

Addis Ababa University, College of Health Sciences, School of
Public Health Ethiopia Field Epidemiology Training Program
(EFELTP)



Addis Ababa, University, College of Health Science, School of
public Health, Department of Preventive Medicine, Field
epidemiology and Laboratory Training Program (EFELTP)

Compiled Body of Work in Field Epidemiology

By Emiru Tessema

Compiled body of Work submitted to the School of Graduate Studies,
of Addis Ababa University in partial fulfilment of the requirements of
Master of Public Health in Field Epidemiology

September 2023
Addis Ababa, Ethiopia

Addis Ababa University, College of Health Science, School of public Health, Department of Preventive Medicine, Field epidemiology and Laboratory Training Program (EFELTP)

Compiled Body of Work in Field Epidemiology

By: Emiru Tessema

Compiled body of Work submitted to the School of Graduate Studies, of Addis Ababa University in partial fulfilment of the requirements of Master of Public Health in Field Epidemiology

Mentors: 1. Alemayehu Worku (Professor)

2. Abdulnasir Abagaro (MPH, PhD Candidate)

Field Mentor: Moti Edosa (MD, MPH)

September 2023
Addis Ababa, Ethiopia

Addis Ababa University, College of Health Science, School of Public Health, Department of Preventive Medicine, Ethiopian Field Epidemiology and Laboratory Training Program (EFELTP) Compiled Body of Work in Field Epidemiology

By: Emiru Tessema (BSc)

Compiled Body of Work Submitted to School of Graduate Studies of Addis Ababa University in Partial Fulfilment for the Degree of Master of Public Health in Field Epidemiology

Approval by Examining Board

_____ // _____

Chairman, Committee of School Graduate

_____ // _____

Advisor

_____ // _____

Internal Examiner _____ // _____

External Examiner-----//-----

Acknowledgement

My sincere appreciation goes towards to my academic mentors, Professor Alemayehu Worku (Department of Preventive Medicine, School of Public Health, Addis Ababa University), Abdulnasir Abagaro (a PhD candidate and resident advisor at the same institution), and Doctor Moti Edosa (Field base supervisor at EPHI), for their constructive feedback and recommendations. Next, I extend my sincere gratitude to the Ethiopian Public Health Institute (EPHI) and the Centre for Disease Control (CDC) for their financial and technical support. I would like to express my heartfelt thanks to Abdulnasir Abagaro, a PhD candidate and resident advisor, for his consistent counsel, mentoring, and guidance. Finally, I want to thank everyone who has ever contributed, including AAU, SPH, the Department of Field Epidemiology and Laboratory, instructors, academic coordinators, and all others.

Table of Contents

Acknowledgement	i
List of Table	iv
List of Figure	vi
Chapter One: Malaria outbreak investigation in Abobo district, Agnuak Zone Gambela regional state, Western Ethiopia 2022.....	1
Chapter Two: Cholera Outbreak investigation in Guradhamole District, Bale zone Oromia region, Ethiopia, 2022	38
Chapter Three: Five years Surveillance data analysis of Severe Acute Malnutrition of Somali region, Ethiopia,2021	56
Chapter Four; Routine HMIS and CBS Surveillance System Evaluation of HIV/AIDS, at South Omo zone, SNNRPs, South Ethiopia, 2021	73
Chapter Five: Drought derived nutritional response evaluation in East Bale Zone, Oromia Regional State, Southeast Ethiopia, April 2022	97
Chapter Six: Disaster Risk management and response at Guyah IDPS in Awusi Rasu zone, Afar regional State, 2021.	111
Chapter Seven: Health and health related information of Shebedino Woreda in Sidama Regional State and to identify problems for priority setting in 2021	123
Chapter Eight: Abstract and Manuscript writing	143
Abstracts on Health Profile Description Report of Shebedino woreda, Sidama Regional	143
Manuscript: Surveillance Data Analyses of Last Five Years (2016-2020) on Sever Acute Malnutrition in Somali Regional State, April 2021, Ethiopia.....	144
Chapter Eight: Research Proposal for Malaria outbreak Investigation and risk factors assessment, at Mender 8/9, Catholic Church, Abobo district, Anuak Zone, Gambella, July/2023	165
Chapter Nine: Additional out puts	186
9.1 Bulletin presentation of Malaria Outbreak Investigation and Response Activities as a Final Report, Gambella Region, August 2022	186
9.2. COVID-19 Data Regeneration Bulletin Report, at Tikur Anbessa Specialized Hospital (TASH), November 20, 2021.....	197
9.3. Bulletin presentation of conflict-induced IDPs in Awash Sebat, Federal Police Training Center, Zone 3, Afar, From August 26, 2014, December 4, 2015, E.C.	201
9.4. Descriptive Epidemiology of Skin Infection in Semera IDP, Afar Region, April to May 2022	209
Results and Findings in U-5 Years	211
Figure 50Skin infection cases by sex categories in under five children ,Semera IDPs, Afar, May 2022.	213

Figure 51 Case description by specific ages in months,, Under-five OPD, Semera IDPs, Afar, May 2022. Case description by specific age: U-5 OPD, Semera, Afar, Ethiopia, May 2022.....	213
Skin infection cases in Adult	214
9.5. Health and nutrition Emergency Response activities in Somali Regional State March/2022 .	218
9.6. Summary reports of Dengue Fever, Zone 3, (Gewani, Gelealo, Awash-40 & 7 Districts), Afar, July 2023.....	225

List of Table

<u>Table 1: Sex and age specific attack rate per 1000 population in Abobo Woreda, Anuak zone, West Ethiopia, September/2022</u>	20
<u>Table 2: Demographic characteristics of malaria outbreak study participants, Abobo Woreda, Gambella, West Ethiopia,2022</u>	25
<u>Table 3: Bivariate analysis of risk factors for Malaria outbreak in Abobo Woreda, Gambella, West Ethiopia,2022</u>	26
<u>Table 4: Multivariate analysis of risk factors for Malaria outbreak in Abobo Woreda, Gambella, West Ethiopia,2022</u>	28
<u>Table 5 Cholera outbreak attack rate by kebele in Guradhamole district, Bale zone, Oromia region, Ethiopia 2022</u>	48
<u>Table 6 Cholera outbreak Sex Specific Attack Rate By kebeles in Guradhamole district, Bale zone , Oromia Region, Ethiopia,2022</u>	48
<u>Table 7 Bivariate and multi variation logistic regression analysis of cholera outbreak investigation in Guradhamole kebeles, Bale zone, Oromia Region, Ethiopia,2022</u>	49
<u>Table 8 Distribution of SAM cases of out & in patients by reporting sites(Zones), Somali region, April 2021, Ethiopia</u>	63
<u>Table 9 Health facilities, ART Sites and Population under surveillance in the South Omo zone, October 2021, Jinka</u>	81
<u>Table 10 HF's distribution respective to service provision, last 1 year (2020) in South Omo Zone, Jinka Oct- 2021</u>	82
<u>Table 11 Case finding performance in adults and paediatrics(<15,15+) in last one year(2020),South Omo zone, Health Department, Jinka, Oct-2021</u>	82
<u>Table 12 Newly identified HIV Cases by sex and age respective to reporting sites, South Omo Zone Health Department ,2020/2021</u>	84
<u>Table 13Number of Adults and children newly enrolled by age and sex, (fine disaggregate) at Jinka Millenium HC, South Omo Zone, Jinka, From June2016-Sep-2121</u>	85
<u>Table 14Number of Adults and children newly enrolled by age and sex, (fine disaggregate)at Jinka General Hospital, South Omo Zone, Jinka, From June2016-Sep-2121</u>	85
<u>Table 15Number of Adults and children newly enrolled by age and sex, (fine disaggregate)at Gazer Primary Hospital South Omo Zone, Jinka, From June2016-Sep-2121</u>	86
<u>Table 16Timeliness and completeness of ART sites, South Omo Zone, Health Department, from December 2020-Oct2021, Jinka Oct-2021</u>	87
<u>Table 17 Eligibility, Screening and coverage of SAM & MAM cases, East Bale, Oromia, April 2022</u>	104
<u>Table 18 Conducted Nutritional Screening among PLW during the Month Of March, East Bale, Oromia, April 2022</u>	104
<u>Table 19 Recovery Rate by totally Affected Districts, as of the end of March 2022, East Bale , Oromia, April2022</u>	105
<u>Table 20WASH profile at Drought Affected Districts, East Bale, Oromia, April 2022</u>	106
<u>Table 21 Distribution of IDPs by House Hold and settled population in Awsi Rasu Zone of Afar Region, March 2022</u>	115

<u>Table 22.cases of OPD visit in Guyah IDPs, Awsi Rasu zone, Afar Region, February- March, 2022</u>	116
<u>Table 23 WaSH distribution at Guyah IDPs, Awsi Rasu Zone, Afar Region, March 2022, Semera</u>	118
<u>Table 24 lists of kebeles in Shebedino woreda, Sidama regional State, May 2021</u>	129
<u>Table 25 Educational institutes in Shebedino woreda , Sidama regional State, May 2021</u>	133
<u>Table 26 Number & site of screened individuals for HIV, Shebedino, Sidama, May 2021.</u>	137
<u>Table 27 Cases, treatment and cure rate, Shebedino, Sidama, May 2021.</u>	137
<u>Table 28 Total allocated budget for Shebedino, 2020/2021, Shebedino, Sidama.</u>	138
<u>Table 29 Immunization coverage, (for children and women), Shebedino, Sidama, May 2021.</u>	139
<u>Table 30Distribution of SAM cases from In and out patients by reporting sites, Somali Region, April 2021.</u>	155
<u>Table 31 Reports of SAM cases by years, Somali Region, April 2021.</u>	156
<u>Table 32 Sample size estimation by different factors from previous relevant factors, Abobo district, Agnuak zone, Gambella, West Ethiopia, Ethiopia, 2023.</u>	177
<u>Table 33 Schedule to investigate malaria outbreak and contracting factors in Abobo District, Anuak zone, Gambella, 2023</u>	181
<u>Table 34 Budget break down to investigate malaria outbreak and contracting factors in in Abobo District, Agnuak zone, Gambella, 1-May to 30-July/2023</u>	182
<u>Table 35 Malaria data validity at regional and district level, Gambella, August 2022.</u>	189
<u>Table 36 Findings of the Assessment for IRS coverage and bed net utilization in different villages of Some woredas in Gambella region, August 2022.</u>	191
<u>Table 37Lists of Assessed Health Facilities, Gambella, August 2022.</u>	192
<u>Table 38 Conducted tests Vs Confirmed cases(positives) for COVID-19 in four months duration(July-October 2021, TASH, AA, 2021.</u>	199
<u>Table 39Rapidly screened population for chronic diseases Awash-7IDPs, Afar, September 2022.</u>	204
<u>Table 40 Immunized children U-5, Awash IDPs,Afar30-August-12-Dec,2022.</u>	205
<u>Table 41 Family planning and ANC, Awash-7, Afar, 2022.</u>	206
<u>Table 42 Referral Linkage, Awash-7 IDPS, Afar, December 2022.</u>	207
<u>Table 43 Activities performed in MHSS, Awash-7 IDPs, Afar, DEC 2022.</u>	208
<u>Table 44SAM cases by Woredas, Afder zone, Somali Region, February 2023.</u>	219
<u>Table 45 Drought Affected areas population in HH, Afder Zone, Somali, February 2023.</u>	220
<u>Table 46 Lists of CMAM and required Emergency responses, Afder Zone, Somali, March 2023.</u>	222
<u>Table 47 Lists kits for cholera outbreak response, Afder Zone, Somali, March 2023</u>	224
<u>Table48 Dengue Fever in four Districts of Gabi Rasu zone, Awash-7, Afar, as of 14-July 2023</u>	226
<u>Table 49 total cases of DF respective to site of outbreak, Awash-7, Afar, July 2023</u>	226
<u>Table 50 Overall surveillance activities and cases management of DF, Awash-7, Afar, July 2023.</u>	228
<u>Table 51 Dengue Fever OPD and IPD case management in four districts, Awash-7, Afar, Jul-2023.</u>	229

List of Figure

<u>Figure 1: Conceptual frame work developed different literatures of malaria outbreak and associated factors, Abobo Woreda, Gambella region, Ethiopia, 2022</u>	10
<u>Figure 2: Map of investigation area, Abobo Woreda, Gambella region, Western Ethiopia, 2022</u>	12
<u>Figure 3: Epi curve showing of malaria outbreak in Abobo district, Gambella region, western Ethiopia, 2022</u>	21
<u>Figure 4: Responsible species of malaria outbreak, Abobo district, West Ethiopia, September, 2022(n=198)</u>	22
<u>Figure 5: Larvae collection from responsible breeding sites of Abobo woreda, west Ethiopia, 2022</u> .	23
<u>Figure 6 Cholera cases distribution by sex in Guradhamole district Bale zone, Oromia regional state, Ethiopia 2022</u>	46
<u>Figure 7 Cholera cases distribution by Age group in Guradhamole, Bale zone Oromia regional state, Ethiopia 2022</u>	46
<u>Figure 8 Number of cholera case by date of onset at Guradhamole district, Bale zone of Oromia Region, Ethiopia,2022</u>	47
<u>Figure 9 Distribution of cholera cases by WHO week, Guradhamole district, Bale Zone, Oromia Region, Ethiopia 2022</u>	48
<u>Figure 10 Map of study area of Surveillance Data Analysis of SAM of Five years (2016-2020), in Somali Region, East Ethiopia,2021</u> .	61
<u>Figure 11 Trends of SAM cases by year in Somali, Ethiopia, April 2021</u>	65
<u>Figure 12 Distribution of SAM cases by months of each year,(2016-2020),April 2021, Somali, Ethiopia</u>	65
<u>Figure 13 Distribution of SAM cases by zones in years(2016-2020), April,2021, Somali, regional state, Ethiopia</u>	66
<u>Figure 14 Trends SAM cases in death at in patients, in year(2016-2020), Somali region, 2021</u>	66
<u>Figure 15 Trends of SAM cases in Epi. Weeks of each year, (2016-2020), April 2021, Somali region</u>	67
<u>Figure 16 Map of study area Routine HMIS and CBS for HIV/AIDS in South Omo zone, SNNRP, Ethiopia,2021</u>	78
<u>Figure 17 Total current on ART from all ART reporting Site, South Omo Zone, Health Department, Oct-2021, Jinka</u>	83
<u>Figure 18Number of HIV/AIDS cases linked to ART in last Three years by sex, South Omo Zone, Health Department, 2019-2021(3 years) Jinka</u>	85
<u>Figure 19 Treatment cascade, PLHIV, known status, on ART & Virally suppressed, South Omo Zone Health Department, 2017-2021,Jinka</u>	87
<u>Figure 20Trends of nutritional screening among under five, East Bale, Oromia, April 2022</u>	102
<u>Figure 21OTP Admission among under five years, East Bale Zone, Oromia, April 2022</u>	103
<u>Figure 22 Map of Awsi Rasu zone, Afar region, Ethiopia, March, 2022</u>	114
<u>Figure 23 Existing Hospitals and Health Facilities in Zone 1, Afar Region, March 2022</u>	116

Figure 24 Information management system (IMS) structure of RRT cluster, APHI & EPHI , Guyah IDP, Awsi Rasu Zone, Afar region, March 2022.....	118
Figure 25: showing study area, Shebedino woreda, Sidama regional State Ethiopia 2021	125
Figure 26 total population of Shebedino Woreda, Sidama region Ethiopia, May,2021	130
Figure 27 Types of religions in Shebedino woreda, Sidama regional State, May 2021	131
Figure 28 ethnic compositions in Shebedino woreda, Sidama region, Ethiopia,2021	132
Figure 29Figure schools with water supply Vs without water supply, in Shebedino woreda, Sidama regional state, May 2021.....	133
Figure 30 school health activities in number of teachers, school age enrolment and dropout Shebedino woreda, Sidama, May 2021.	134
Figure 31 Type and number of health facilities in Shebedino, Sidama, May 2021.....	135
Figure 32 type of health profession in number, in Shebedino Woreda, Sidama regional state, May 2021	135
Figure 33 Top Ten leading causes of OPD visit (morbidity), in Shebedino woreda, May 2021	136
Figure 34 Status of primary health care components by coverage, in Shebedino woreda,.....	136
Figure 35 Map of Study area, Somali Regional State, East Ethiopia, 2021.....	151
Figure 36Trends of SAM cases by year in Somali, Ethiopia, April 2021.....	156
Figure 37 Distribution of SAM cases by months of each year.(2016-2020).April 2021, Somali, Ethiopia.....	157
Figure 38 Distribution of SAM cases by zones in years(2016-2020), April,2021, Somali, regional state, Ethiopia.....	158
Figure 39 Trends SAM cases in death at in patients, in year(2016-2020), Somali region, 2021.....	159
Figure 40 Trends of SAM cases in Epi. Weeks of each year, (2016-2020), April 2021, Somali region.	159
Figure 41Conceptual frame work developed from several literatures of malaria outbreak and contributing factors, July 2023.....	174
Figure 42 Map of the study area, Abobo District, Gambella, August 2022.....	187
Figure 43 Trends of Malaria from week 13-31, 2018-2022 (five years), Gambella, August 2022. ..	189
Figure 44Monthly conducted tests Vs positivity, TASH, AA, July 2021.....	199
Figure 45 Trends of COVID-19 testing capacity from 1-15 December 2021, TASH, AA, 2021.	200
Figure 46 Top Ten leading OPD morbidity, Awash-7, Afar 3-SEP-12-DEC/2022	205
Figure 47Mao showing Semera IDPs, and conflict areas, Afar, May 2022.....	210
Figure 48 Photos that illustrate clinical manifestation of skin infections, Semera IDPs, Afar, May 2022.	211
Figure 49 clinically diagnosed cases, Semera IDPS, Afar, May 2022.....	212
Figure 50Skin infection cases by sex categories in under five children ,Semera IDPs, Afar, May 2022.	213
Figure 51Case description by specific ages in months., Under-five OPD, Semera IDPs, Afar, May 2022.Case description by specific age: U-5 OPD, Semera, Afar, Ethiopia, May 2022.....	213
Figure 52skin infection cases by age group, Under-five, Semera IDPs, Afar, 2022.	214
Figure 53Epi curve that shows the daily cases, Semera IDPs, Afar, May 2022.....	214
Figure 54Skin infection cases by sex category in Adults, Semera IDPs, Afar, May 2022.....	215
Figure 55 Number of skin infection cases by age group in Adults, Semera IDPS, Afar, May 2022..	215

Figure 56 Trends of skin infection in Adults, Semera IDPs, Afar, May 2022.....	216
Figure 57 Clinical (Diagnosis) in Adult OPD, Semera IDPS, Aar, May 2022.....	216
Figure 58 Disaggregated data of DF outbreak by date of onset, Awash-7, Afar, as of 9-June to 06-July 2023,	227
Figure 59 Performances in DF case search, management and Environmental control, Awash-7, Afar. July-20	228

Lists Annexes

[Annex 1 Questionnaire for malaria outbreak investigation of Abobo Woreda, west Ethiopia....](#)**Error! Bookmark not defined.**

[Annex 2 Questionnaire for Routine HMIS for HIV/AIDS and Case Based Surveillance\(CBS\).](#)**Error! Bookmark not defined.**

[Annex 3 Questionnaires for Health Profile Assessment of Shebedino District, ----- Zone, Sidama Region, Ethiopia, May 2021.](#)**Error! Bookmark not defined.**

[Annex 4 Checklist for drought derived nutritional assessment at Zonal and Woreda Health Department....](#)**Error! Bookmark not defined.**

Abbreviation/ Acronym

AAU	Addis Ababa University
ACTz	Artemether Combined Treatments
AIDS	Acquired Immunodeficiency Syndrome
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
AOR	Adjusted Odd Ratio
API	Annual parasite incidence
AR	Attack Rate
ART	Anti-Retroviral Therapy
ASRs	Age Standardized Incidence Rate
BSc	Bachelor of Science
CBN	Community Based Nutrition
CBS	Community Based Surveillance
CD-4	Cluster Differentiation
CDC	Centre for Disease Control
CFR	Case Fatality Rate
CMAM	Community Management of Acute Malnutrition
CSA	Central Statistical Agency
DHIS2	District Health Information Software
DHS	Demographic Health Survey
EDS	Early Detection Rate
EFETP	Ethiopian Field Epidemiology Training Program
EPTB	Extra Pulmonary Tuberculosis
FMOH	Federal Ministry of Health
FP	Family Planning
FY	Fiscal Year
GP	GP-General Practitioners
HC	Health Centre

HC	Health Centre
HEW	Health Extension Worker
HEWs	Health Extension Workers
HF's	Health Facilities
HH	House Hold
HIV	Human Immune Deficiency Virus
HIV	Human Immunodeficiency Virus
HO	Health Officer
HP	Health Post
HP	Health Post
HW	Health worker
IDP	Internally displaced population
IDS	Integrated Disease Surveillance
IHR	International Health Regulation
IRS: -	Insecticide Residual Spray
KG	Kindergarten
KM ² : -	Kilometre square
LLIN: -	Long Lasting Insecticide Net
MAM	Moderate Acute Malnutrition
MCH	Maternal-Child Health
MDT	Multi-Disciplinary Team
MPH	Master of Public Health
MUAC	Mid Upper Arm Circumference
NGOs	None Governmental Organizations
NMSP: -	National Malaria Strategic Plan
OR: -	Odd Ratio
OTP	Outpatient Therapeutic Feeding Program
PHEM	Public Health Emergency Management
PLHIV	People Living with Human immunodeficiency Virus
PLW	Pregnant And Lactating Women
PMTCT	Prevention of Mother-To-Child Transmission

RUTF	Ready to Use Therapeutic Food
SAM	Severe Acute Malnutrition
SBCC: -	Sustained behavioral change communication
SC	Stabilization Center
SMC	Seasonal malaria chemoprevention
SNNPRS	South Nation and National People Regional State
TI	Transferred In
tMDA	Targeted Mass Drug administration
TO-	Transferred Out
USD: -	United State Dollar
VL	Viral Load
WASH	Water and Sanitation Hygiene
WHO: -	World health Organization.

Executive Summary

The results of a two-year field epidemiology training program are contained in this document, which must be submitted to Addis Ababa University, the School of Public Health, and the Department of Preventive Medicine in order to meet a requirement for a Field Epidemiology master's degree program. This document has been divided into nine chapters. These nine chapters include an overview of the catastrophe scenario visited, an analysis of the surveillance data, an evaluation of the surveillance system, and a description of the health profile, manuscript, abstract, thesis proposal for the Epi-project and additional outputs. The first chapter includes the findings of the initial outbreak investigation, in 2022, a malaria outbreak occurred in the Abobo district of the Agnuak zone of Gambella, West Ethiopia, an unmatched case-control study was conducted to investigate the outbreak. The cholera outbreak inquiry is covered in chapter two. In 2022, this outbreak took place in the Guradhamole District, Bale Zone, Oromia Region, and southeast Ethiopia. I oversaw both investigations in the mismatched case-control research that was performed to look into this outbreak. In Chapter 3, the evaluation of the last five years of (2016–2020) malnutrition data in the Somali region is discussed. A record review data analysis was employed. Epidemiological descriptions of cases and fatalities were given, and a pattern in cases was also discovered. Malnutrition prevalence was identified, as well as the trajectory of cases over time. Case-based surveillance (CBS) systems and routine HMIS evaluations for HIV/AIDS are covered in Chapter 4. It describes the extent to which the South Omo zone's SNNPs system is to achieving its founding objectives. System qualities for the HIV/AIDS monitoring, including speed, data quality, sensitivity, usefulness, stability, acceptability, representativeness, and adaptability. A description of the disaster situation is given in chapter five. The crisis scenario concerned the evaluation of the response to nutritional problems brought on by the drought in eight districts of the East Bale Zone, Oromia Regional State, and Southeast Ethiopia in April 2021. Shebedino Woreda, Sidama Region, May–2021, is

profiled in chapter six's health section. Information on health and health-related topics that can be used for evidence-based planning and efficient use of scarce resources was offered. These data can be used to identify risk factors and prioritize public health problems for appropriate interventions. Chapter seven contains the Manuscript of the SAM Data analysis of the Somali region and the abstract of the health profile of Shebedino woreda, Sidama zone, Sept- 2021. Chapter Eight contains the epi-project proposal. The Epi-project proposal was developed to investigate the malaria outbreak and identify the risk factors that contributed to the outbreak in Abobo district, Agnuak zone, and Gambella. A descriptive epidemiology, supplemented by an unmatched case-control study, was conducted in Abobo woreda, from September 9–17, 2022.

Chapter 9 includes six additional output types that were included in the CBOW: IDPs narrative presentation, Descriptive epidemiology of skin infection, COVID-19 backlogged data generation, Somali Region Afder Zone Drought Response narrative summary, and Dengue Fever response in Afar.

Chapter One: Malaria outbreak investigation in Abobo district, Agnuak Zone Gambela regional state, Western Ethiopia 2022

Abstract

Background: Ninety-Four per cent (94%) of malaria morbidity and mortality cases are attributed to the African region. Ethiopia is among ten African countries contributing to these cases. 60% of the Ethiopian population lives in malaria-risk areas with different levels of malaria risk. Although the country has made significant progress towards malaria elimination, seasonal outbreaks persistently resurface, including in previously non-malarious areas where people had low immunity. Abobo woreda is an epidemic-prone high-transmission area with stable transmission. However, the district experienced a malaria outbreak starting in the 21st Epi week of 2022, which prompted the investigation.

Methods-We did a descriptive study, followed by two case-control studies with randomly chosen cases (86) and community controls (172). The malaria cases were confirmed with RDT or microscopy, and the controls had no symptoms during the outbreak. We collected data through a questionnaire given by an interviewer, entered it into Epi-info version-7, and analyzed it with SPSS version 20. We did bivariate and multivariable logistic regression to find out what factors caused malaria.

Result: Between the 21st and 36th Epi weeks of 2022, 198 cases of malaria were reported, with no deaths. With a mean age of 22 (12.31 SD) years, the overall attack rate was 20.2/1000. The two most common species were Plasmodium vivax (PF) 71 (8%) and Plasmodium falciparum (PF) 755. Breeding location close to the house (AOR = 4.28; 95% CI: 1.8–10.27), sleeping outside (AOR = 3.94; 95% CI: 2.18–7.37), and a residence with open eaves (AOR = 3.82; 95% CI: 1.97–7.93) were all independent risk variables. Regular use of ITNS (AOR=0.195; 95%CI: 0.068–0.56), IRS-sprayed homes (AOR=0.42; 95%CI: 0.22-0.80), awareness of malaria transmission (AOR=0.51; 95%CI: 0.28–0.93), and preventative and control measures (AOR=0.50; 95%CI: 0.27–0.93) were protective measures.

Conclusion and recommendation: Risk factors included sleeping outside, being close to a breeding site, and having an open ceiling. However, taking preventative steps like utilizing ITNS, having your house sprayed with IRS, and being knowledgeable about prevention and transmission were all necessary. Regular environmental monitoring, a strengthened surveillance system, communication about behavioral change, ensuring sustainable use of

ITNS, and more research with an emphasis on entomology and climate variables were among our recommendations.

Key Words: Abobo Woreda, Gambella, Malaria, Outbreak investigation.

INTRODUCTION

Background

Protozoan parasites of the genus *Plasmodium* are transmitted to humans by feeding on *Anopheles* mosquitoes and cause malaria, a serious and often fatal disease. The four *Plasmodium* species that transmit from person to person are *Plasmodium vivax*, *Plasmodium ovale*, and *Plasmodium falciparum*. A new species of *Plasmodium Knowlesi* was recently found in the forests of Southeast Asia. *Plasmodium vivax* is more common in Africa than elsewhere and is now responsible for the majority of malaria deaths worldwide, more than *Plasmodium falciparum* (1). Seasonal variation in malaria transmission is largely influenced by altitude and climate change. (2).

The Ethiopian government has implemented initiatives for human resource development, monitoring, and assessment to combat the burden of malaria and lessen the suffering it causes. (6). Furthermore, Ethiopia's National Malaria Strategic Plan (NMSP), which runs from 2021-2022 to 2025-2026, intends to consolidate and sustain a considerable decrease in morbidity and mortality due to malaria. (7). A more precise stratification is required due to the strategic goal of scaling up elimination activities while preventing the reintroduction of malaria into areas that currently have no indigenous malaria cases. This new malaria stratification created in 2020 was based on annual parasite incidence (API) per 1,000 people (per the WHO recommendation), altitude, and expert opinions. As a result, the Gambella region's Abobo woreda is one of the woredas classified in 2020 as having high malaria endemicity. (2, 7)

Description of the cases

Malaria is still a leading cause of morbidity and mortality in endemic regions of the world, affecting both children and adults. 3.3 billion People are estimated to reside in areas where malaria transmission could occur in 87 countries and territories. The diseases are mainly prevalent in underdeveloped tropical and subtropical areas of the world. A global estimate of 229 million cases and 409,000 fatalities from malaria were recorded in the 87 countries

where the disease is prevalent in 2019. According to WHO, Africa accounted for 94% of the world's malaria cases and deaths in 2019, with an estimated 215 million cases and 386 000 deaths worldwide. Every two minutes, a child died, making up 67% of all deaths this year among those under the age of five. Today's problems with malaria include the emergence of resistance to anti-malaria medications and insecticides used to kill mosquitoes, misunderstandings about the disease in communities and households, inadequate routine surveillance data produced by healthcare facilities for epidemiological analyses to identify trends and variations in malaria incidence, inaccurately developed monitoring threshold methods, a lack of comparable historical data, and inadequate health care coverage in many countries.(8–10). Higher percentages of people staying outside during the early evening and early morning hours help the mosquitoes' biting schedule. Other difficult elements include people's behavior and occupations. (11, 12)

Additionally, because the predictive accuracy of indicators is not high enough to permit decisions involving pricey interventions like indoor residual pesticide spraying in Africa's highlands, effective prevention of malaria outbreaks is difficult. (13). this is accompanied by unanticipated global increases in the age-standardized incidence rate (ASR) of malaria from 2015 to 2019. (14). As a result, malaria epidemics are currently one of the most complicated public health issues in Sub-Saharan Africa and can be attributed to both natural and man-made causes. Following its eradication, the reemergence of malaria does severe damage to a nation's economy and to the lives of its citizens. (15).A malaria risk area included 75% of Ethiopia's surface, and 60% of the country's population resides there in around 565 districts. (16,17). Related to this Ethiopia is among world countries sharing the burden of 95% of malaria morbidity and mortality globally in 2019(5). Every year, the two seasons that coincide with the main growing seasons—September to December and April to May—see high malaria transmission rates in Ethiopia. Therefore, malaria has a negative socioeconomic impact on the nation's productivity and development. (2). This poses high direct and indirect economic burden to household in rural Ethiopia(18). Coexistence of widely distributed species Programs to prevent and control malaria are also challenged by Plasmodium falciparum and Plasmodium Vivax. P. falciparum, which accounts for 70% of all species in Ethiopia, has maintained a consistent proportion over time.(19).

Ethiopia has been executing a program to prevent and manage malaria for many years; however, coverage of LLIN and IRS has remained low (62% and 23%, respectively). (19). Although the incidence of malaria decreased from 32/1000 to 15/1000 from 2015 to 2019, it surprisingly increased to 28/1000 in 2020, with 1,509,182 total cases and a fatality rate of 0.39 per 100,000. (20). In addition, many malaria outbreaks were reported in various low-transmission and malaria-free regions of the nation, which runs counter to the goal of eliminating malaria within a few selected geographic areas by the year 2020 and totally from Ethiopia by the year 2030. These outbreaks have catastrophic effects on local communities because they lack antibodies to malaria outbreaks. (21). Having a breeding site for mosquitoes close to where you live, sleeping outside overnight, not wearing protective clothing, not knowing much about malaria, not utilising insecticide-treated bed nets, having a breeding site for mosquitoes close to where you live, and the lack of environmental controls were all factors that contributed to those epidemics. (22) (23).

The Abobo district would be classified by the national categorization as having a high malaria endemicity with consistent and intense year-round transmission by 2020. During the 22nd WHO week of 2022, malaria cases in Mender 8/9 and Catholic sites in Abobo Woreda, however, went over the alert level. The district saw exceptionally severe rains and flooding prior to the beginning of the current outbreak. Determining whether this outbreak is linked to the emergence of new breeding locations, past travel patterns, or other factors is crucial. Consequently, the goal of this study was to confirm the existence of an outbreak, describe it, and pinpoint the elements that increase the risk of contracting malaria in the Abobo area of the Gambella region.

Significance of the study

With a high endemic risk of malaria by 2020, Abobo Woreda is one of the low-lying, prone-to-epidemic districts in western Ethiopia. The district's persistent pattern of transmission set it apart before the current outbreak. It is essential to look into the outbreak that is currently happening there. The results of this investigation would offer significant information regarding the predominant malaria parasite species associated with illness, attack rate by sex and age group, and factors associated with illness for local and national public health agencies, policymakers, the regional health bureau, Abobo Woreda health staff, and other

stakeholders working on malaria prevention and control to lessen the burden of the current outbreak and prevent future outbreaks. Research findings related to the environment

LITERATURE REVIEW

Overview of Malaria outbreak

In order to be effective, malaria prevention and control measures must be precisely targeted in both time and location because epidemics are frequently sudden and unexpected. (24). The ability of early detection systems (EDS) to detect malaria is crucial for efficient and quick epidemic containment. The presence of effective disease surveillance systems is a crucial component of such capacity. (25). The investigation of this outbreak involves the collection of important information on the cause of the current infection, which includes the administration of a standardized questionnaire to the person on whom infection was diagnosed (3). During the years 1998–2003, WHO established the fundamental ideas and principles for enhancing country capabilities for the early detection and management of malaria outbreaks. An essential stage in the creation of an EDS is the delineation and mapping of epidemic-prone areas. (9). When the number of malaria cases exceeds or will exceed the ability of the current health services to treat them, an epidemic has begun. An assessment of the epidemic risk, the importance of an early reaction, and the availability of resources for an inquiry should provide the foundation for EDS implementation. True malaria epidemics have been documented in Ethiopia and Madagascar's highlands, where transmission is typically nonexistent. Because the health services weren't ready and the impacted communities weren't immune, these have been especially severe. (26). In highland fringe areas where malaria is non-endemic, *Plasmodium vivax*, which causes relapse infection after infected mosquitoes bite, is the most dominant species (27). In order to lower malarial morbidity and stop malaria epidemics, vector control is crucial. The national malaria program should incorporate entomological surveillance as a key strategy to inform the planning and execution of vector control measures and guarantee that the right interventions are being used where they are required. Focus entomological investigations are reactive, short-term epidemiological studies conducted in situations involving eradication or eradication prevention. (28).

Factor associated with malaria outbreak

Socio-demographic related factors

An outbreak of malaria occurred in west Bengal, India shows that age group 15-29, 30-44 with attack rate of 63 % and 68% were mostly attacked age group, Whereas additionally male mostly affected than females 52% vs 48% respectively (29). According to another malaria outbreak study in Colombia revealed that males are mostly affected group than females, and additionally Plasmodium vivax is responsible species for outbreak (30).

Different articles conducted worldwide on accompanying factors of malaria outbreak discovered that different socio-demographic factors were among contributing factors of malaria infection. The study done in northern Namibia after 2016 transmission period of outbreak in Southern Africa reported that socio-demographic factors such as being unemployed compared to agriculture worker (AOR=2.25), being children (AOR=4.32) and being security personnel (AOR=4.46) were among factors associated with risk of malaria illness (31). According to another investigation and control of a Plasmodium falciparum malaria outbreak in Shan Special Region II of Myanmar the most important risk factor for malaria infection during outbreak was age <15 years with an OR of 13.5 ($P < 0.01$) (32). According to malaria outbreak investigation in endemic municipalities of Colombia proportion of inhabitants over 45 years were among socio-demographic factors associated with malaria outbreak (33). As per the study on the malaria outbreak investigation in Mashonaland, East Zimbabwe, the majority of cases were male at 60% (38/63). However, according to this study, there was no statistical difference in socio-demographic factors associated with infection among both cases and controls (34). In divergence with this study in Nwoya District of Northern Uganda, females (AR = 8.1%) were more affected than males (AR = 4.7%) ($P < 0.0001$). Of all age groups, 5–18 years (AR = 8.4%) were most affected (35).

According to malaria outbreak epidemiological analysis conducted in Ankesha District, Awi Zone, Northern Ethiopia, the highest attack rate of this outbreak was among pediatrics, which was between age groups 5 and 14, with an 18/1000 attack rate, and additionally, the highest attack rate was among male sex groups with 53.3% compared to females (36). Similar to the study in Awi zone by age group and divergence by gender, the outbreak investigation

conducted in Workaye kebele of Sidama district, Northwest Ethiopia, revealed that the age group of 5–14 years and females were more affected by the malaria outbreak (23).

Environmental and housing condition related factors

There was a favorable link between environmental and housing characteristics and malaria infection in the majority of outbreak investigations undertaken in numerous countries. A comparative epidemiological assessment of the malaria outbreak in two Jharkhand districts found that both regions included lush vegetation and water bodies, like as ponds and shallow wells, that might serve as mosquito breeding grounds (37). Another malaria outbreak investigation conducted in Chipinge, Zimbabwe, revealed a positive association between contracting malaria infection and environmental-related factors such as Staying near a river or swamp, which predisposed people to contracting malaria by around three times as compared to those living far away from a river (OR =2.7, 95% CI = 1.2; 6.3) (38). The investigation of the malaria outbreak, which was facilitated after heavy rainfall, reported that 55% (59/107) of case-persons and 18% (19/107) of controls had stagnant water around households for several days following rainfall (ORM-H = 5.6, 95% CI = 3.0–11) (35).

A malaria outbreak in China was attributed to climatic change (14%), three to artificial breeding grounds (43%), and the remaining three (3/7, 43%) were attributed to natural disasters, according to a systematic review of the investigation into the malaria outbreak in China. (39). The results of malaria outbreak research in the Riaba area of Bioko Island indicate that a number of factors, including increased rainfall and a significant number of anthropogenic anopheline breeding sites produced by building projects, are to blame for the burden of malaria infection.(40).

According to a study on factors linked to malaria infection in Mashonaland, East Zimbabwe's Mudzi District, having a house with open eaves and a body of stagnant water close by (AOR = 5.4, 95% CI = 1.2-23.3) were among the independent environmental and housing condition risk factors linked to malaria infection.(34). As the finding of the malaria outbreak investigation conducted in Zimbabwe Sleeping in a house with open eaves (OR: 2.97; 95% CI 1.44–6.16; $p < 0.01$) and sleeping in a poorly constructed house (OR: 4.33; 95% CI 1.97–9.51; $p < 0.01$) were significantly associated with acquiring malaria infection.(41).

Most investigations of outbreaks in Ethiopia found a connection between environmental and housing conditions, such as the presence of trash collection materials at home (AOR = 0.25,

95% CI 0.11-0.61) and the presence of mosquito breeding grounds nearby (AOR = 9.08, 95% CI 3.6-22.93). (22), Living in an unscreened house or window, having a mosquito breeding place close to your home, and having inadequate environmental management are all factors that can increase your risk of getting malaria. (23,36,42,43).

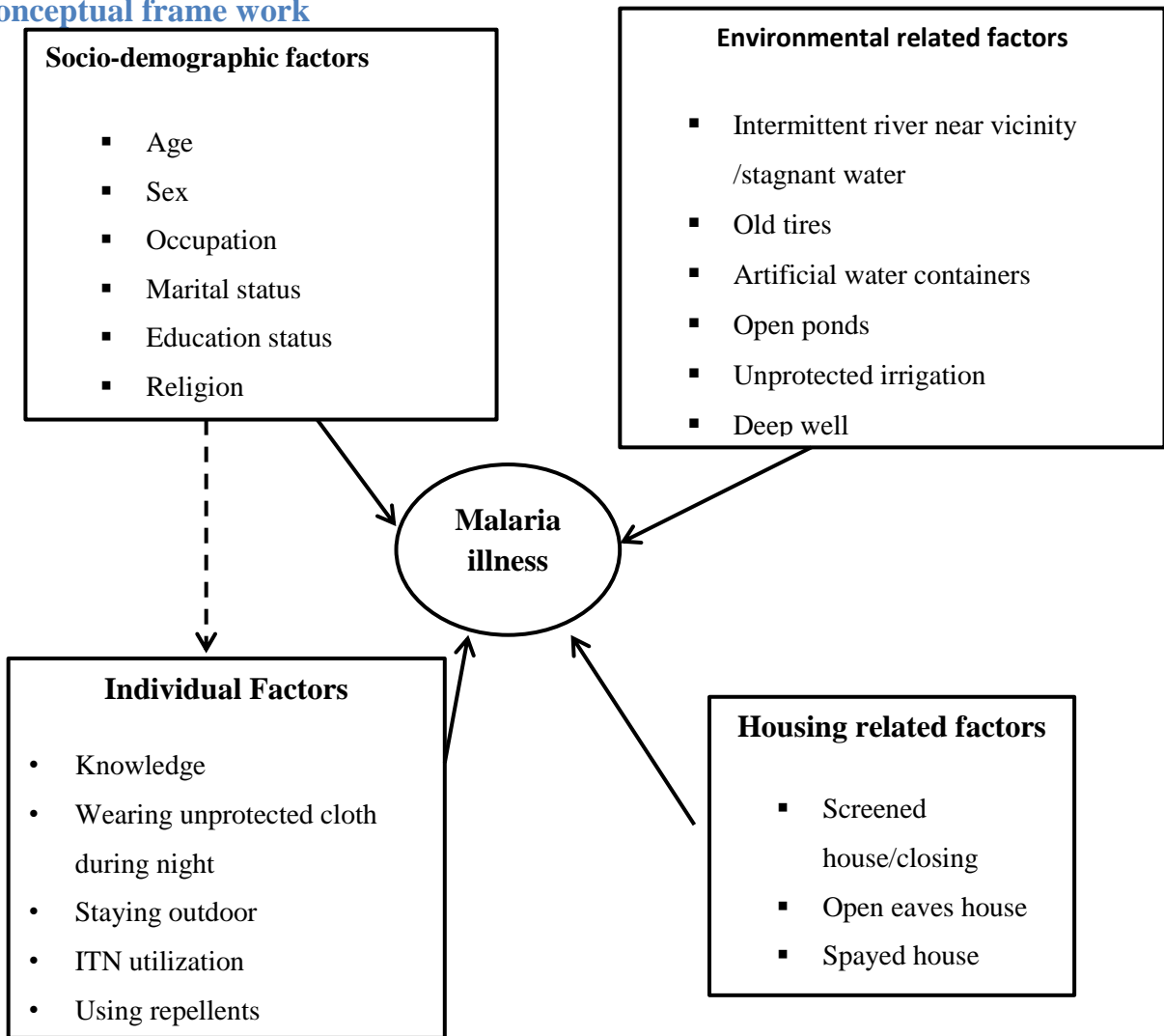
Individual related factors

The findings of a malaria outbreak investigation conducted in West Bengal, India's Darjeeling region show that respondents who slept outside had a higher risk of contracting malaria than those who did not (AOR 3.8, 95% CI 2.2-6.5).(29). Researchers contrasted villages that experienced malaria outbreaks with those that did not in the Muleba district of northwest Tanzania. They discovered that residents in the district were prone to malaria outbreaks due to poor usage of insecticide-treated nets and knowledge gaps about malaria transmission, symptoms, prevention, and management.(44).

The results of a Malaria Outbreak investigation in the Nwoya District of Northern Uganda showed that wearing full extremity covering clothing in the evening (ORM-H = 0.30, 95% CI = 0.20-0.60) and sleeping under a long-lasting insecticide-treated net (LLIN) 14 days prior to the onset of symptoms (ORM-H = 0.43, 95% CI = 0.22-0.85) were among the preventative measures for malaria infection.(35). The results of a study carried out in a rural area of southern Zimbabwe indicated that spending the evenings outside (OR: 2.24; 95% CI: 1.04–4.85; p = 0.037) and shutting eaves (OR: 0.45; 95% CI: 0.20–1.02; p = 0.055) were among the characteristics that were independently related to malaria infection. (41).

Studies on malaria outbreaks in Sub-Saharan African countries and Ethiopia have shown that a variety of factors, including improper use of insecticide-treated bed nets, a lack of indoor residual spray, sleeping outside of one's home at night, a lack of knowledge about how to prevent malaria transmission, a lack of nearby waste collection facilities, and overnight outdoor activity, are independently linked to malaria infection.(22,23,43,45,46)

Conceptual frame work



=

Figure 1: Conceptual frame work developed different literatures of malaria outbreak and associated factors, Abobo Woreda, Gambella region, Ethiopia, 2022

Objectives

General objective

To describe the magnitude of malaria epidemic morbidity and mortality and to investigate factors associated with the epidemics in Abobo Woreda, Gambella Region, and Sep/ 2022

Specific objectives

- ❖ To describe magnitude and distribution morbidity and mortality attributable to current outbreak by persons, place, and time in Abobo Woreda, Gambella Region, Sep/ 2022
- ❖ To identify malaria species that causes epidemic in Abobo Woreda, Gambella Region, Sep/ 2022
- ❖ To identify risk factors associated with malaria epidemic in Abobo Woreda, Gambella Region, Sep/ 2022

Methods and materials

Study area and period

This study was conducted from September 9-17, 2022, at Abobo District, Gambella Regional State, West Ethiopia,

There are several districts in Gambella, one of them is Abobo. It is a part of the Anuak Zone and is bordered on the southeast by the Majang Zone, on the south by Gog, on the southwest by Jor, on the north by the Gambela Zuria, and on the northeast by the Oromia Region. The Alwero River forms part of its northern border. The name of the town in Abobo is Abobo. Abobo's 21 kebeles have about six that are prepared for relocation. This woreda has a total population of 15,741 as of the 2007 Census, an increase of 12.65% over the 1994 Census, of which 8,184 are males and 7,557 are women. Its area is 3,116.17 square miles. In this woreda, according to the CSA's 2007 Census, there are 15,741 people overall, an increase of 12.65% from the 1994 census, of whom 8,184 are men and 7,557 are women. The woreda has a total area of 3,116.17 square kilometers.

The population density in Abobo is 5.05, higher than the Zone's average of 4.83 people per square kilometer. According to the census, 4,090 people, or 25.98%, live in cities. In this woreda, there were 3,867 households in total, averaging 4.1 people per household and 3,663

dwelling units. 71.41% of the population indicated they were Protestant, followed by 10.77% who identified as Catholic, 9.98% who identified as practicing Ethiopian Orthodox Christianity, and 6.12% who identified as Muslim.

The woreda had 13,973 residents in 3,597 households as of the national census of 1994; 7,223 of them were males and 6,750 were women; 1,222, or 8.75% of the total, lived in urban areas. The Anywaa people (44.05%), the Kambaata (20.1%), the Amhara (12.57%), the Oromo (6.31%), and the Majang (5.99%) were the five largest ethnic groups in Abobo; all other ethnic groups made up 10.98% of the population. 44.08% of people speak Dha-Anywaa as their mother tongue, while 20.45% speak Kambaata, 13.5% speak Amharic, 5.93% speak Majang, and 5.65% speak Afaan Oromo. The remaining 10.39% speak all other primary languages that have been recorded. 32.2% of the population reported practicing Protestantism as their primary religion, followed by 29.66% who claimed to practice Ethiopian Orthodox Christianity.

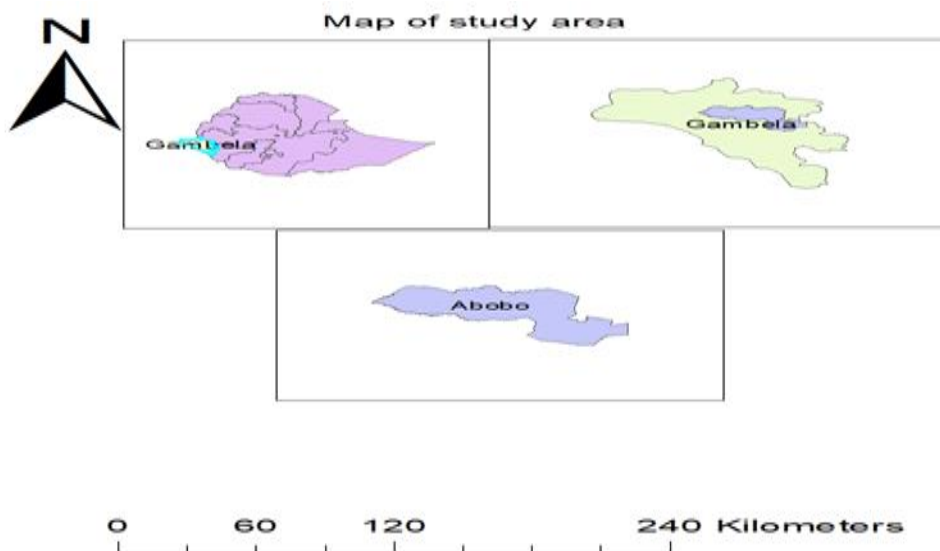


Figure 2: Map of investigation area, Abobo Woreda, Gambella region, Western Ethiopia, 2022

Study Design

Between September 9 and September 17, 2022, a descriptive epidemiology study that included an unmatched case-control study was carried out in the Abobo woreda. The steps of an epidemic investigation used in this inquiry were those suggested by the Centers for Disease Control and Prevention (CDC).(47). After confirming the existence of an outbreak, the systematic approach was utilized to prepare for field work, verifying a diagnosis to discover and record patients before epidemiologically evaluating the study hypotheses.

Descriptive Epidemiology

Malaria cases are all acute febrile illnesses, with peripheral blood samples from people in Mender 8/9 and Catholic Church clinic locations in the Abobo area testing positive for the rapidly diagnostic antigen test. During the outbreak, all confirmed cases were line-listed using official formats adapted from the national malaria management guidelines. To establish the presence of an outbreak, it was compared to the same week in 2021 using an epidemic threshold constructed using five years of data from 2017 to 2021. Basic data on all confirmed cases was collected using a standard line list format that was taken from the national malaria guidelines in order to describe the outbreak by time, place, and person. Epi curve was built to depict the time course and magnitude of an epidemic.

Analytical Epidemiology

An unmatched case-control study was done to find the risk factors for malarial sickness. Cases were chosen at random from a line list. In contrast, controls were chosen from among the case patients' neighbors who had not received any treatment for malaria during the epidemic period and had not shown any signs or symptoms of the disease in the previous two weeks, regardless of their age, sex, economic standing, or level of education. For the analytical investigation, a case-to-control ratio of 1:2 was employed.

Laboratory methods

The rapid diagnostic test (RDT), which was a standard malaria diagnostic tool at the health post level, was used to identify confirmed malaria cases from all febrile cases that visited the health post and nearby clinic. Additionally, RDT was used at the community level to confirm the selected control.

Population

Source population for descriptive

All Residents of Mender Eight or Nine and Catholic Church Clinic sites in Abobo Woreda were source population.

Study population for descriptive study

All residents of Abobo district who have had a malaria case confirmed by rapid diagnostic test (RDT) and line listed between the 21st and 36th WHO of 2022.

Study population for analytical study

All selected case and controls full-filling case definition criteria residing in Mender 8/9 and Catholic Church Clinic sites of Abobo Woreda, West Ethiopia.

Inclusion and exclusion criteria

Inclusion Criteria: Residents of Mender 8/9 and Catholic Church clinic sites were included as cases if they had a confirmed case of malaria that had been documented online and discovered at home during the data collection period. Neighbors of cases who had no signs or symptoms of malaria in the previous two weeks and had a negative RDT test were also included as cases.

Exclusion criteria: Any person who hadn't been a resident of Mender 8/9 and Catholic sites in the previous two weeks before the occurrence of the outbreak, who is critically ill and unable to respond, or who has no willingness to participate.

Sample size estimation

The required sample was recruited based on sample size, which was calculated using the EPI-Info statistical package by considering the assumptions of 95% CI, Power of 80%, 5% level

of significance (α), and a 1:2 case-to-control ratio. Different factors and variables from different relevant studies were used to determine the number of cases exposed and the number of controls exposed. Thus, sleeping outside during the night, taken from the study conducted in Afar, was 76.9% and 57.6% in case and control, respectively. (46) Produced the largest sample size 234 (78 cases and 156 controls). By adding 10% non-response rate the final generated sample size was 258 (86 for case and 172 for control).

Sampling procedure

Case: The Mender 8/9 and Catholic Church sites health centers line list, which was employed as the sampling frame for this investigation, had 199 malaria cases. 86 cases were selected by simple random selection from a line list using the number assigned to each case. In cases where a case was selected as absent, a case from the following home was used. Community health workers worked to locate the particular village or residence of the cases.

Control: Controls were randomly picked from the neighborhood of selected patients based on the sample frame of cases that had no clinical diagnosis of malaria and were proven negative by RDT. For Selected individuals below eighteen years of age, parents or caretakers were interviewed.

Study variables

Dependent variable

- Malaria illness

Independent variables

Socio-demographic factors: Age, Sex, marital status, Occupation, Educational status, Family size

Environmental and housing conditions: Presence of an unprotected dam; screened house; sprayed house; Presence of stagnant water or an intermittent river near home.

Individual factors: Knowledge about malaria transmission, prevention, and control, Travel history, Presence of malaria cases in families, using protective cloth, sleeping outdoors, Staying outside overnight and ITN utilization

Operational definition and definition of terms

(Ref.https://apps.who.int/iris/bitstream/handle/10665/208815/WHO_HTM_GMP_2016.6_eng.pdf)

Operational definitions

Malaria outbreak: When reported malaria cases in a certain week exceed the specified threshold, which is the second-biggest number of the latest preceding five years of the same weeks or prior year doubled cases,

Wearing Protective clothing: Those responders who wore clothes that covered extremities during the night

Stagnant water near home: The presence of standing/immobile water within one kilometer of the respondent's residence.

Mosquito breeding sites include stagnant water, exposed artificial water containers, unprotected irrigation, and the presence of ponds and tick grass, which are conducive to mosquito development.

Staying outdoors overnight: someone who stays outdoors for more than six hours during the night(22).

Good knowledge: Individuals who scored above mean of knowledge questions otherwise poor (22).

Definition of a case

Suspect: A patient, who has a fever or a recent history of fever, lives in a location where malaria is common, or who has travelled in the past 30 days to an area where malaria is common.

Probable cases: Anyone with a fever and one or more of the clinically recognized symptoms of malaria, such as headache, rigor, back pain, chills, sweats, myalgia, nausea, and vomiting, is considered to be probable.

Confirmed: Any suspected case that has plasmodium parasites found by RDT.

Data collection method and tool

Analytical research: using a standardised questionnaire adapted from prior pertinent studies, data were gathered through interviews conducted by three health-oriented health workers (two clinical nurses and one health extension worker). Information on socio-demographic traits, clinical presentation (for patients only), and potential risk is included in the adopted questionnaire..(22, 43). The information obtained directly from cases and controls regardless of their age, sex, educational background, and ethnicity In this instance, when the recruited respondent is a child less than 15 years old, their parent or caretaker was interviewed.

Environmental assessment: In addition to environmental inspection, selected respondents were asked about the presence of stagnant water near their home or within a 1 km radius. The presence of any artificial breeding site, such as uncovered water containers, immobile water containers, broken glass, ponds, and old tries, was assessed at the same time during the data collection period. An entomological survey was undertaken by zonal entomologists by collecting larvae from positive breeding sites.

Quality control

A one-day orientation was given for data collectors on the components of the data collection instrument, how to recruit cases and controls, and interview ethics. Before data processing, the completeness of the collected data was determined.

Data processing and analysis

The collected data for the analytical study and the data on the line list were checked for accuracy, coded, entered into Epi info version 7, cleaned, and then transferred to SPSS version 25 for analysis. The population of 2020/21GC kebeles was used as the denominator to calculate the attack rate. Using descriptive statistics like frequency, percentage, ratio, and proportion, descriptive epidemiology described the severity of this pandemic by age, sex, and species of infection. Both bivariate and multivariable logistic regression were used for the analytical analysis. Data for the analytical study was collected, and data from the line list was

checked for completeness, coded, entered into Epidata version 4.6, cleaned up, and sent to SPSS version 25 for analysis. 2020/21GC Kebeles' population was used as the denominator to calculate the attack rate. With descriptive epidemiology, the severity of this pandemic was broken down by age, sex, and species of infection using statistics like frequency, percentage, ratio, and proportion. Bivariate and multivariable logistic regression were both used in the analytical process

Permission Letter

A formal letter was written from the Anguak zonal health office, and permission was obtained from the Woreda health office to conduct an outbreak investigation at Mender 8/9 and Catholic sites. The purpose of this outbreak investigation was briefed in detail for health care providers, study participants, and kebele administration in the language they understood. Written consent was given for adults and the care partner or caregiver in cases where the selected participant was less than 18 years old.

Dissemination of the study

Both a hard copy and an electronic copy of the investigation's findings will be handed to Addis Ababa University's epidemiology department. Additionally, the results of this investigation will be transmitted to a yearly national and international scientific conference as well as presented to the Abobo Woreda health office and the Gambella regional state. Finally, a manuscript will be finished and submitted for publication to a recognized international journal.

Result

Epidemic confirmation

The threshold, indicated by a doubling of instances when compared to a similar Epi week last year, is the third quartile of weekly cases over the previous five years. An outbreak of malaria was therefore identified in the Abobo woreda when cases in Mender 8/9 and Catholic sites started to exceed limits starting with the 15th Epi-week of 2022 (Figure 3). Furthermore, the absence of a travel history demonstrated the representativeness of the reported cases in particular regions.

Descriptive epidemiology person

A total of 1122 suspected cases of malaria were examined by RDT microscopy at the Catholic Church site and Mender 8/9 sites in the Abobo woreda between the outbreak's 21st and 36th Epi-week. With no deaths, the 844 cases that were confirmed have a positive rate of 75.22 percent. There were 844 instances of malaria overall, of which 362 (42.9%) were female and 482 (57.1) were male. In terms of the catchment population, the overall attack rate of the outbreak was 124/1000, and for the mender 8/9 and catholic locations, it was 90.1/1000. Ages 15 to 44 accounted for 53.6% of all cases during the pandemic and had the greatest attack rate. Males experienced 127 sex-specific attacks per 1000 people, while females experienced 91. The affected individuals' (cases') median age was 22 (12.31SD) years. 110 attacks per 1000 people occurred in the productive age group of people over 15 years (Table 1).

Table 1: Sex and age specific attack rate per 1000 population in Abobo Woreda, Anuak zone, West Ethiopia, September/2022

Variables	Total population	Number of cases	Species			Attack rate per 1000 pop.
			PF	PV	Mixed	
Sex						
Male	3,800	482 (57.1%)	432(89.6%)	39(8.1%)	11(2.3%)	127
Female	3,996	362 (42.9%)	323(89.2%)	32(8.8%)	7(2%)	91
Age group						
0-4	1609	180(21.3%)	167(92.8%)	10(5.5%)	3(1.7%)	112
5-15	2057	210(24.9%)	191(91.0%)	14(6.7%)	5(2.3%)	102
>15	4130	454(53.8%)	397(87.4%)	47(10.4%)	10(2.2%)	110

Descriptive epidemiology by person, place, time and clinical characteristics

The average Plasmodium parasite incubation period was taken into account when constructing the epidemic curve for this outbreak on a weekly basis. The created Epi curve (figure 3) demonstrates that the outbreak is of the propagated (progressive) kind and lasts longer than common source epidemics, which have several peaks and the potential to disseminate a virus from one vulnerable individual to another via an intermediary host (a mosquito). Additionally, the epidemic curve for this outbreak displays a succession of progressively larger peaks that are spaced, on average, by one malaria parasite incubation cycle and 9 to 14 days. Epidemic inquiry started after the threshold was crossed after four weeks of case load. Due to a lack of early epidemic response and investigation during Epi Week, the number of cases increased from 30 to 33. In this epidemic, Plasmodium falciparum species made up 755 (89.5%), followed by Plasmodium vivax species at 71 (8.1%) (Figure 4). The most frequently observed clinical manifestations were fever, headache, chills, fatigue and perspiration.

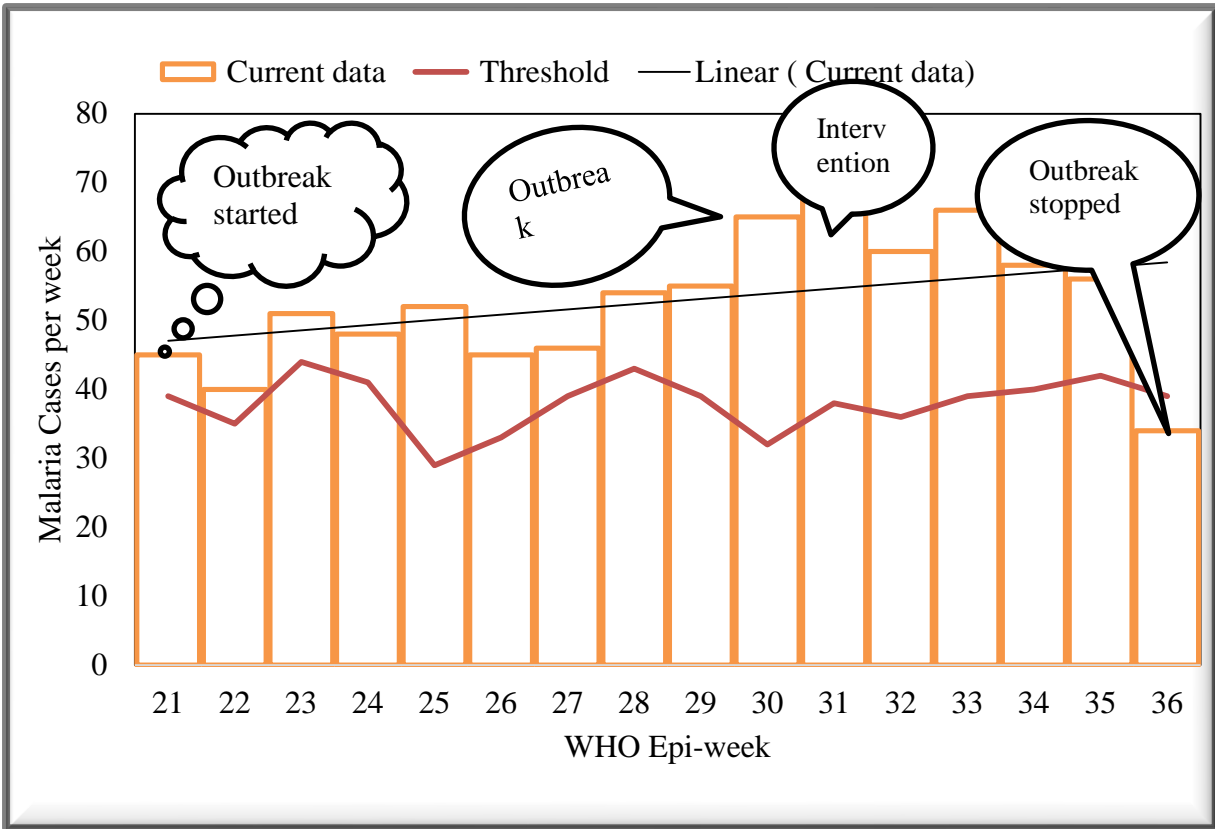


Figure 3: Epi curve showing of malaria outbreak in Abobo district, Gambella region, western Ethiopia, 2022

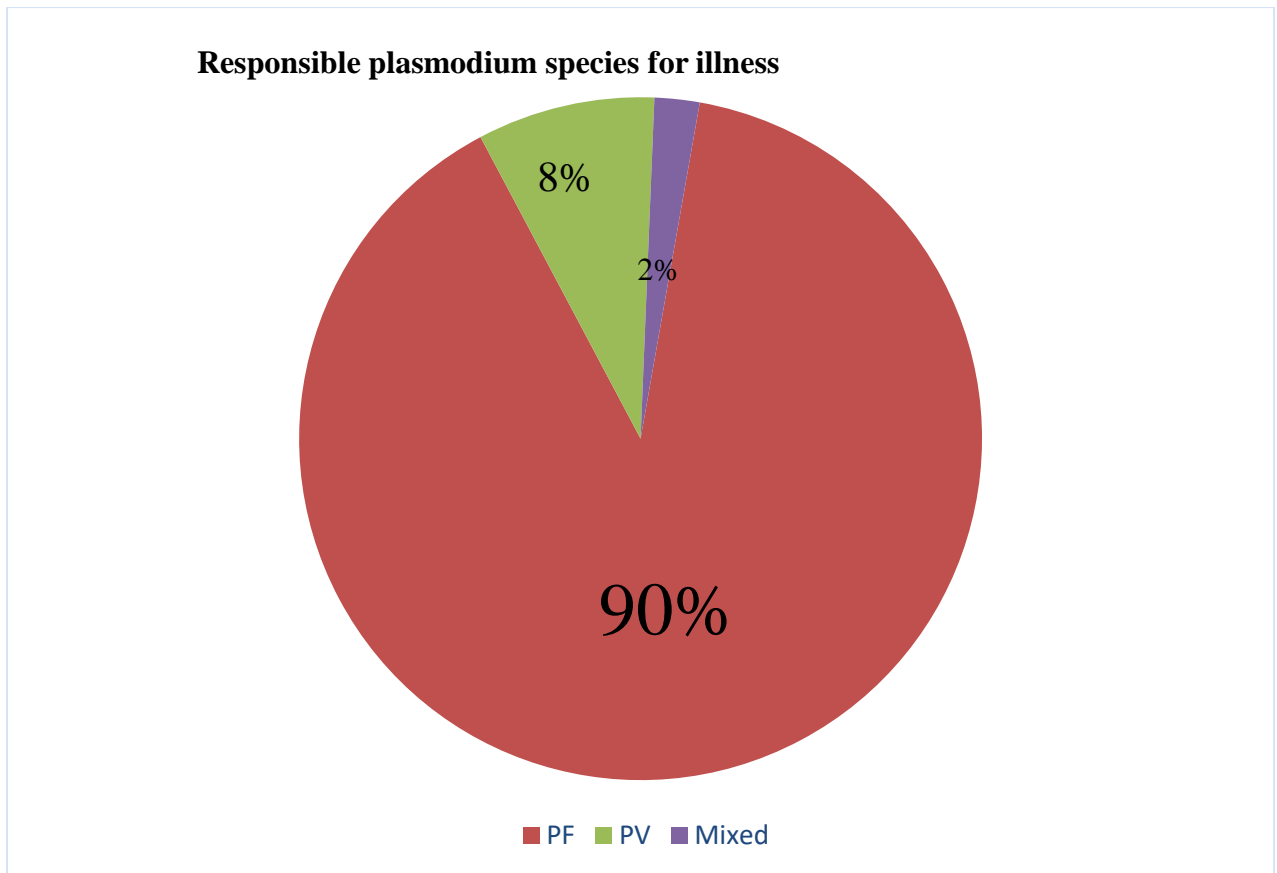


Figure 4: Responsible species of malaria outbreak, Abobo district, West Ethiopia, September, 2022(n=198).

Environmental assessment

An environmental assessment was done during the early stages of the outbreak inquiry to find prospective mosquito breeding grounds and pinpoint the mosquito species that were infected in the area. Numerous breeding locations, or stagnant water brought on by the rainy season, were found close to people (Figure 5). To determine the species and prevalence of mosquitoes, entomological analysis was done. A high prevalence of Anopheles mosquito larvae has been discovered in prospective breeding areas based on larval density and the HLC aspirated method. There were more larvae (11 per dip) in rain marshy pools, fewer (7 per dip) in riverside pools, and fewer (3 per dip) in drinking water holes.



Figure 5: *Larvae collection from responsible breeding sites of Abobo woreda, west Ethiopia, 2022*

Public health intervention

For the locals, environmental control and malaria prevention awareness raising were carried out. Community members helped with the drainage and rerouting of the stagnant water. IRS, off-site, and on-site training for medical professionals and community health workers were conducted. Focal spray was applied to selected breeding sites. It was done to actively monitor cases of fever.

Analytical epidemiology

Socio-demographic characteristics of the participants

A total of 258 individuals participated in our study for the analytical component. Of which, 121 (46.9%) and 137 (53.1%) were men and women, respectively. 170.5% of the participants, or 182, were in the 15–44 age range. According to Table 2, the median ages of the cases and controls were 22.6211.18 SD and 24.9912.11 SD, respectively

Associated Risk factors

Eleven variables independently exhibit statistically significant relationships in bivariate logistic regression. Living in a home with open eaves, having unprotected irrigation close to home, spending the night outside, and the presence of breeding sites nearby were all statistically associated factors in bivariate logistic regression for developing malaria illness at P-values less than 0.05 (Table 3). While utilizing ITNS, having your home sprayed with IRS, donning protective clothing, covering your windows and doors with curtains, using any form of insect repellent, and being well-versed in malaria transmission and preventive techniques were all variables that reduced your risk of contracting malaria. There was no statistically significant link between having artificial water holding material and getting malaria, sleeping area, travel history, or family history of malaria.

In this investigation, all significant bivariate logistic regression components with P-values less than 0.25 were incorporated into the multivariable logistic analysis model. Adjusted odd ratios larger than and less than one, together with P-values less than 0.05 at 95% confidence intervals, were considered significant determinants or protective factors of getting malaria sickness, respectively.

Eight factors in both directions, i.e., being factors for contracting malaria infection and being protective against contracting malaria infection, were statistically significant in multivariable binary logistic regression analysis at 95% confidence intervals and a 0.05 p-value out of eleven candidate independent variables (Table 4).

Table 2: Demographic characteristics of malaria outbreak study participants, Abobo Woreda, Gambella, West Ethiopia, 2022

Variables		Respondent category		COR	95% CI	P-Value
		Case (N=86(%))	Control (N=172(%))			
Sex	Female	39(45.3%)	82(47.7%)	0.91	0.51-1.53	0.96
	Male	47(54.7%)	90(52.3%)	1		
Age category	0-4	4(4.7%)	6(3.5%)	4.0	0.68-23.2	0.122
	5-14	20(23.3%)	25(14.5%)	3.6	0.94-13.9	0.059
	15-44	59(68.6%)	123(71.5%)	3.1	0.87-10.8	0.081
	>=45	3(3.4%)	18(10.5%)	1		
Marital status	NA	25(29.10%)	35(20.3%)	1.264	0.69-2.31	0.447
	Single	14(16.3%)	32(23.3%)	1.127	0.54-2.34	0.749
	Widowed	1(1.20%)	2(1.2%)	1.087	0.09-12.2	0.946
	Married	46(53.5%)	103(59.9%)	1		
Ethnicity	Angua	73(84.9%)	134(78%)	1.60	0.80-3.17	0.19
	Kambata	13(15.1%)	38(22%)	1		
Occupation	Student	31(36.0%)	48(27.90%)	1		
	Farmer	41(47.7%)	106(61.60)	0.668	0.37-1.18	0.169
	Merchant	5(5.8%)	9(5.2%)	0.914	0.28-2.97	0.881
	NA	9(10.5%)	9(5.2%)	1.346	0.50-3.61	0.555
Education status	NA	10(11.6%)	10(5.8%)	1.070	0.36-3.12	0.902
	No formal	10(11.6%)	31(18.0%)	0.392	0.14-1.02	0.057
	Primary	49(57.0%)	108(62.80)	0.519	0.25-1.07	0.078
family size	Secondary	17(19.80%)	23(13.40%)	1		
	Small	12(14.0%)	22(12.8%)	1		
	Large	74(86.0%)	150(87.2%)	0.904	0.42-1.92	0.795

Table 3: Bivariate analysis of risk factors for Malaria outbreak in Abobo Woreda, Gambella, West Ethiopia, 2022

Factors	Respondent category	COR		95% CI for COR		P-value	
		Case	Control	Lower	Upper		
Travel History	Yes	11(12.8)	24(14.0%)	0.904	0.42	1.945	0.79
	No [®]	75(87.2)	148(86.0%)	1			
Staying outdoor over night	Yes	56(65.1)	69(40.1%)	3.0728	1.791	5.273	0.000 *
	No [®]	30(34.9)	103(59.9%)	1			
wore full extremity covering clothe in evening hours	No [®]	58(67.4)	74(43.0%)	1			
	Yes	28(32.6)	97(56.4%)	0.401	0.233	0.689	0.001 *
Using window or door curtains	No [®]	51(59.3)	74(43.0%)	1			
	Yes	35(40.7)	98(57.0%)	0.518	0.306	0.876	0.014 *
Having artificial water near home	Yes	65(75.6)	138(80.2%)	0.763	0.411	1.416	0.391
	No [®]	21(24.4)	34(19.8%)	1			
Using any type of insect repellents	No [®]	78(90.7)	137(79.7%)	1			
	Yes	8(9.3%)	35(20.3%)	0.401	0.177	0.909	0.029 *

Have waste collection	No [®]	48(55.8)	70(40.7%)	1				
	Yes	38(44.2)	102(59.3%)	0.543	0.322	0.917	0.022*	
Unprotected irrigation	Yes	19(22.1)	17(9.9%)	1.556	0.796	3.044	0.196	
	No [®]	67(77.9)	155(90.1%)	1				
Breeding site near home/ Intermittent River with in 1KM of vicinity	Yes	78 (90.7%)	121(70.3%)	4.198	2.356	7.478	0.00*	
	No [®]	8 (9.3%)	51 (29.7%)	1				
ITNS utilization	Always	36(41.8)	99(57.6%)	0.191	0.081	0.45	0.000	
	Usually	31(36.1)	63(36.6%)	0.259	0.108	0.623	0.003	
	Never [®]	19(22.1)	10(5.8%)	1				
IRS	Yes	38(44.2)	116(67.4%)	0.382	0.225	0.65	0.000	
	No [®]	48(55.8)	56(32.6%)	1				
House with open eves	Yes	57(66.3)	68(39.5%)	3.006	1.749	5.167	0.000	
	No [®]	29(33.7)	104(60.5%)	1				
Good knowledge on sign and symptoms of malaria	No [®]	33(38.4)	79(45.9%)	1				
	Yes	53(61.6)	93(54.1%)	0.708	0.466	1.334	0.375	
Good knowledge on transmission of malaria	No [®]	57(66.3)	77(44.8%)	1				
	Yes	29(33.7)	95(55.2%)	0.412	0.241	0.707	0.001	
Good knowledge on malaria prevention	No [®]	52(60.5)	75(43.6%)	1				
	Yes	34(39.5)	97(56.4%)	0.506	0.298	0.856	0.011*	

Note: * indicate statistically significant factors at P. value < 0.25 cut- off point along CI & 1 indicate reference group/category.

Table 4: Multivariate analysis of risk factors for Malaria outbreak in Abobo Woreda, Gambella, West Ethiopia, 2022

Factors	Respondent category		AOR	95% C.I. AOR		P-value	
	Case	Control		Lower	Upper		
Staying outside over night	Yes	56(65.1)	69(40.1%)	3.11	1.7	5.68	0.00
	No®	30(34.9)	103(59.9%)				
Wearing full extremity covering clothe in evening	Yes	28(32.6)	97(56.4%)	0.57	0.31	1.04	0.07
	No®	58(67.4)	74(43.0%)				
Using window or door curtains	Yes	28(32.6)	97(56.4%)	0.49	0.27	0.89	0.02
	No®	58(67.4)	74(43.0%)				
Using repellents	Yes	8(9.3%)	35(20.3%)	0.46	0.19	1.14	0.1
	No®	78(90.7)	137(79.7%)				
Having waste collection	Yes	38(44.2)	102(59.3%)	0.63	0.35	1.14	0.13
	No®	48(55.8)	70(40.7%)				
Breeding site near home	Yes	78 (90.7%)	121(70.3%)	4.28	1.79	10.27	0.00
	No®	8 (9.3%)	51 (29.7%)				
ITNS utilization	Always	36(41.8)	99(57.6%)	0.195	0.068	0.56	0.002
	Usually	31(36.1)	63(36.6%)	0.242	0.083	0.706	0.009
	Never®	19(22.1)	10(5.8%)				
IRS	Yes	38(44.2)	116(67.4%)	0.418	0.217	0.805	0.009
	No®	48(55.8)	56(32.6%)				
House with open eves	Yes	57(66.3)	68(39.5%)	3.816	1.973	7.382	0.000
	No®	29(33.7)	104(60.5%)				
Good knowledge on malaria prevention	Yes	29(33.7)	95(55.2%)	0.51	0.28	0.93	0.03
	No®	57(66.3)	77(44.8%)				
Good knowledge on transmission	Yes	34(39.5)	97(56.4%)	0.5	0.27	0.93	0.03
	No®	52(60.5)	75(43.6%)				

Discussion

The descriptive analysis of this study showed that during the outbreak, the attack rate was highest among males (127/1000) and children under the age of five (112/1000). The plasmodium falciparum species was responsible for 90% of the morbidity during the pandemic. The case-control study identified three risk factors for the present malaria outbreak: the existence of mosquito breeding grounds, nighttime outdoor activity, and dwellings with exposed eaves. Closing windows and doors (screening), using ITNS, residing in a home that has been sprayed with IRS, and having a thorough understanding of malaria prevention and transmission were protective factors. The investigated epidemic period ran from the 21st to the 36th weeks of Epi Week, which fell within the predicted vector months of Ethiopia and coincided with other outbreak seasons in other regions of Ethiopia. (2). The cumulative attack rate 108/1000 of the two sites population was in contrary with national malaria elimination program (48). Moreover, attack rate recorded during this epidemic was higher than other epidemics in different parts of Ethiopia(43,46).

Males under the age of five and reproductive age groups were the most affected groups, according to the descriptive epidemiology of this study, and the primary species causing malaria sickness was Plasmodium falciparum (90%) followed by Plasmodium vivax (8%) This result was consistent with research carried out across Ethiopia.(46). This finding also consistent with outbreak occurred in Tigray region by attacked age group, sex and responsible species for infection(43). It's possible that the age group's inadequate immunity contributes to the highest attack rate among children under five. Additionally, this discovery regarding the primary pathogen species was compatible with the result of a malaria pattern analysis conducted by many lowland parties in Ethiopia and other African nations. (23,34,38,42,43).

Increased breeding site formed as a result of heavy rain fall and poor malaria preventive measures were responsible factors for contracting malaria illness (35). According to this reality, the analytical results of this study showed that residents who have stagnant water

nearby or who live close (within 1 km) to an intermittent river had a 4.28 times higher chance of developing malaria than those who didn't. The river that passed this kebele broke, creating numerous responsible breeding locations. This result is in line with the findings of a study on the spread of malaria that was undertaken in Zimbabwe's Mashonaland East district, Mudzi District, where having stagnant water close to your home was found to be a risk factor for malaria infection.(34). This also supported by the study in Chipinge, Zimbabwe reported the association of contracting malaria infection and living near river(38). The results of this investigation were also consistent with an investigation into a malaria outbreak in Sidama District, Northwest Ethiopia, which found that communities within a kilometer of intermittent rivers had a 4.72 times higher risk of contracting malaria than those farther away. (23). Other malaria outbreak investigation conducted in different parts of Ethiopia Afar region (46) Tigray region (43) also supported the association between having stagnant water close to your home and acquiring malaria. This sheds a spotlight on the significance of managing and controlling breeding sites, especially on high land periphery with low transmission rates, in order to stop the reemergence of competent anopheles.(28).

In addition to developing resistance to popular insecticides, a greater percentage of malaria mosquitoes are active at night and attack people outside. Moreover, the occupation factor of people during the night contributes to the persistence and transmission of malaria. (11,12). The results of our study were corroborated by this data, which showed that those who spent the night outside had a 3.94 (95% CI: 2.108–7.27) times greater chance of developing malaria than people who spent the day indoors. This result is consistent with a study on a malaria outbreak in Bengal, India, which found that sleeping outside increased the risk of getting malaria by 3.8 times, and with a study in a rural area of south Zimbabwe, which found that staying outside increased the risk of getting malaria by 2.24 times.(29,41). Additionally, the results of this study are consistent with past investigations of malaria outbreaks carried out in Ethiopia, which identified sleeping or staying outside as one related risk factor for getting malaria sickness.(22,43,46).

When compared to the control group, our findings showed that regular use of ITNS reduces the chance of developing malaria by 80%. Additionally, compared to the opposite group, living in a sprayed home reduces risk by 58%. Other investigations backed up this conclusion.(23,46). However, this study found that factors like using window or door curtains

(screening), being well-informed about malaria transmission, and having adequate knowledge of malaria transmission and prevention were protective against contracting the disease when compared to living in an unscreened home and having inadequate knowledge of malaria transmission and prevention. When compared to individuals who did not use window or door screening to keep mosquitoes out during the evening, employing window and door curtains (screening) statistically reduces the risk of developing malaria by 51% (AOR = 0.49; 95% CI: 0.27–0.89). Although this result is similar to that of an inquiry into a malaria outbreak that was done in Northern Uganda, this variable was used favorably in this study. (35). Similarly this finding supported by study conducted in Tanquae Abergelle district, Tigray region of Ethiopia(43). Awareness and perception about malaria is an important aspect that prevent the risk of contracting this diseases(49).

Similar to other studies, ours determined that people's understanding of how malaria is transmitted and prevented was a barrier to getting the disease. The likelihood of developing malaria is reduced by 50% (AOR = 0.50; 95% CI: 0.27–0.93) compared to individuals who are not well-informed about how malaria is transmitted. The likelihood of contracting malaria infection is reduced by 49% (AOR = 0.51; 95% CI: 0.27–0.93) compared to individuals who are not well-informed on its preventative strategies. This research was in line with a study done in Ethiopia that found that understanding how malaria spreads and how to prevent it cuts the chance of getting malaria by 25%. (2322,).

Our investigation has several restrictions. One of the limitations addressed is the possibility that the chosen controls could still be in the early stages of a disease after the data was collected. The RDT diagnostic instrument is the accepted method for confirming malaria, but it is not the best method. Additionally, Budget restrictions prevented the completion of a thorough entomological survey of mosquitoes.

Conclusion and recommendation

Our investigation has several restrictions. One of the limitations addressed is the possibility that the chosen controls could still be in the early stages of a disease after the data was collected. The RDT diagnostic instrument is the accepted method for confirming malaria, but it is not the best method. Additionally, Budget restrictions prevented the completion of a thorough entomological survey of mosquitoes. In order to identify and handle individual

instances early, continuous monitoring and follow-up are necessary. To guarantee efficient management of larval sources, ongoing environmental monitoring should be suggested. The community should be given autonomy by the local health authority to maintain and govern their environment. At the home and community levels, sustained behavioral change communication (SBCC) addressing malaria preventive and control mechanisms should be strengthened. Hotspots should get targeted mass drug administration (tMDA), along with a focused IRS. Regional and zonal administrations should improve the district's ITNS and IRS programs as malaria prevention and control methods. Another important task that needs to be done is a thorough entomological analysis of the vector. To understand the scope and severity of the malaria outbreak in such endemic-prone locations, additional research taking into account assessments of climatic conditions should be undertaken. Additionally, improving the surveillance system for malaria is essential for early detection and early warning of new cases before they pose a major risk to the population at risk.

References

1. WHO recommendations for treating malaria. Geneva; 2015. 1-115 pages. Vol. 3, Letters in Applied Microbiology.
2. TG Dillu. 2020 National Malaria Elimination Roadmap from the Federal Democratic Republic of Ethiopia
3. WHO. Disease surveillance for malaria control: an operational manual. World Health Organization, Geneva; 2012.
4. Biomedicine T. Malaria outbreak in a non endemic tribal block of Balasore district , Orissa , India during summer season. 2012;29(2):277–85.
5. World Health Organization. Global progress and challenges in malaria control over the past 20 years. 2020; Geneva.
6. Zewotir TT, Mwambi HG, and Ayele DG. Three regions of Ethiopia's malaria problem adistributed spatially. Malar J (online). 2013 Dec 17;12(1):207. From: Malaria Journal. Biomed Central.com Articles/10.1186/1475-2875-12-207
7. Federal Ministry of Health of Ethiopia. Strategic Plan for Ethiopia's Malaria Elimination, pages 1–5, 2021–2025.
8. Kashyap V., Kumar D., Singh SB., Kumar A., and Kishore A. Using shoe leather epidemiology, a comparative analysis of epidemiological investigations of malaria outbreaks and accompanying mortality was conducted in two districts of Jharkhand over the same prewinter season. 2018;
9. Jean-Olivier Guintran, C. Delacollette, and P. Trigg. Early malaria epidemic detection systems in Africa. 2006;1–100. Disponible à partir de: <http://www.li.mahidol.ac.th/thainatis/pdf-ebook/ebook77.pdf>
10. Evaluation of Malaria Diagnostic Methods as a Key for Successful Control and Elimination Programs. Mbanefo A, Kumar N. 2020;
- 11; Trop Med Infect Dis.Limwagu AJ, Finda MF, Moshi IR, Monroe A, Nyoni AP, Swai JK, et al. between human behavior and the likelihood of being bitten by a malaria vector in southeast Tanzania. Editor: L.H. Carvalho, PLoS One [Internet]. 2019 Jun 3;14(6):e0217414. Obtainable from: 10.1371/journal.pone.0217414 (dx.plos.org)

12. Govella NJ, Ferguson H. Why Use of Interventions Targeting Outdoor Biting Mosquitoes will be Necessary to Achieve Malaria Elimination. *Front Physiol* [Internet]. 2012;3(June):1–5. Available from: <http://journal.frontiersin.org/article/10.3389/fphys.2012.00199/abstract>
13. Ruppel A, Chlichlia K, Bahgat M. Invasion by schistosome cercariae: neglected aspects in *Schistosoma japonicum*. *Trends Parasitol* [Internet]. 2004 Sep;20(9):397–400. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1471492204001588>
14. Liu Q, Jing W, Kang L, Liu J, Liu M. Trends of the global , regional and national incidence of malaria in 204 countries from 1990 to 2019 and. *J of Travel Med*. 2021;1–12.
15. Nasir SMI, Amarasekara S, Wickremasinghe R, Fernando D, Udagama P. Prevention of re-establishment of malaria: historical perspective and future prospects. *Malar J* [Internet]. 2020 Dec 7;19(1):452. Available from: <https://doi.org/10.1186/s12936-020-03527-8>
16. Bugssa G, Tedla K. Feasibility of Malaria Elimination in Ethiopia. *Ethiop J Health Sci*. 2020;30(4):607–14.
17. U . S . PRESIDENT ’ S MALARIA INITIATIVE ETHIOPIA Malaria Operational Plan FY 2021. 2021;
18. Hailu A, Lindtjørn B, Deressa W, Gari T, Loha E, Robberstad B. Economic burden of malaria and predictors of cost variability to rural households in south-central Ethiopia. Carvalho LH, editor. *PLoS One* [Internet]. 2017 Oct 11;12(10):e0185315. Available from: <https://dx.plos.org/10.1371/journal.pone.0185315>
19. Taffese HS, Hemming-schroeder E, Koepfli C, Tesfaye G, Lee M, Kazura J, et al. Malaria epidemiology and interventions in Ethiopia from 2001 to 2016. *BMC Infect Dis Poverty*. 2018;7(103):1–9.
20. Ethiopian Federal Ministry of Health. 2013EFY Annual Performance report of the Ethiopian Health Sector. 2020.
21. Vajda É, Webb C. Assessing the Risk Factors Associated with Malaria in the Highlands of Ethiopia: What Do We Need to Know? *Trop Med Infect Dis* [Internet]. 2017 Mar 1;2(1):4. Available from: <http://www.mdpi.com/2414-6366/2/1/4>
22. Tesfahunegn A, Berhe G, Gebregziabher E. Risk factors associated with malaria outbreak in Laelay Adyabo district northern Ethiopia, 2017: Case-control study design.

- BMC Public Health. 2019;19(1):1–7.
23. Workineh B, Mekonnen FA, Sisay M, Gonete KA. Malaria outbreak investigation and contracting factors in Simada District, Northwest Ethiopia: A case-control study. *BMC Res Notes* [Internet]. 2019;12(1):1–6. Available from: <https://doi.org/10.1186/s13104-019-4315-z>
 24. Cox J, Abeku TA. Early warning systems for malaria in Africa: from blueprint to practice. *Trends Parasitol* [Internet]. 2007 Jun;23(6):243–6. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1471492207000803>
 25. Abeku TA. Response to Malaria Epidemics in Africa. *Emerg Infect Dis* [Internet]. 2007 May;13(5):681–6. Available from: http://wwwnc.cdc.gov/eid/article/13/5/06-1333_article.htm
 26. FMOH. National Malaria Guidelines, Fourth edition [Internet]. Addis Ababa; 2017. Available from: https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/eth_national_malaria_guidline_4th_edition.pdf
 27. Tesfaye S, Belyhun Y, Teklu T, Medhin G, Mengesha T, Petros B. Malaria pattern observed in the highland fringe of Butajira , Southern Ethiopia : a ten-year retrospective analysis from parasitological and metrological data. *MW Journal*. 2012;3(5):1–8.
 28. WHO. Malaria surveillance, monitoring & evaluation: a reference manual. Geneva; 2016. 82–103 p.
 29. Sharma PK, Ramanchandran R, Hutin YJ, Sharma R, Gupte MD. A malaria outbreak in Naxalbari, Darjeeling district, West Bengal, India, 2005: weaknesses in disease control, important risk factors. *Malar J* [Internet]. 2009 Dec 10;8(1):288. Available from: <https://malariajournal.biomedcentral.com/articles/10.1186/1475-2875-8-288>
 30. Chaparro P, Padilla J, Vallejo AF, Herrera S. Characterization of a malaria outbreak in Colombia in 2010. *Malar J*. 2013;12(330):1–11.
 31. Smith JL, Mumbengegwi D, Haindongo E, Cueto C, Roberts KW, Gosling R, et al. Malaria risk factors in northern Namibia: The importance of occupation, age and mobility in characterizing high-risk populations. *PLoS One* [Internet]. 2021;16(6):e0252690. Available from: <http://dx.doi.org/10.1371/journal.pone.0252690>
 32. Liu H, Xu J, Yang H, Li M, Sun C, Yin Y, et al. Investigation and control of a

- Plasmodium falciparum* malaria outbreak in Shan Special Region II of Myanmar along the China-Myanmar Border from June to December 2014. *Infect Dis Poverty* [Internet]. 2016;5(32):1–11. Available from: <http://dx.doi.org/10.1186/s40249-016-0127-8>
33. Mateus JC, Carrasquilla G. Predictors of local malaria outbreaks: An approach to the development of an early warning system in Colombia. *Mem Inst Oswaldo Cruz*. 2011;106:107–13.
 34. Masango TT, Nyadzayo TK, Gombe NT, Juru TP, Shambira G, Chiwanda S, et al. Factors associated with malaria infection in Mudzi District, Mashonaland East Zimbabwe, 2019: a case-control study. *BMC Public Health*. 2020;20(1):1–9.
 35. Nsereko G, Kadobera D, Okethwangu D, Nguna J, Rutazaana D, Kyabayinze DJ, et al. Malaria Outbreak Facilitated by Appearance of Vector-Breeding Sites after Heavy Rainfall and Inadequate Preventive Measures: Nwoya District, Northern Uganda, February–May 2018. *J Environ Public Health* [Internet]. 2020 Apr 22;2020:1–10. Available from: <https://www.hindawi.com/journals/jeph/2020/5802401/>
 36. Worku Lake M. Epidemiological Analysis of Malaria Outbreak in Ankesha District, Awi Zone, Amhara Region, Ethiopia, 2012: Weaknesses in Control Measures and Risk Factors. *Sci J Public Heal* [Internet]. 2016;4(2):132. Available from: <http://www.sciencepublishinggroup.com/journal/paperinfo?journalid=251&doi=10.11648/j.sjph.20160402.18>
 37. Kumar D, Singh S, Kumar A, Kishore A, Kashyap V. A comparative study of epidemiological investigations of malaria outbreaks and related deaths in two districts of Jharkhand during the same prewinter season using shoe-leather epidemiology. *J Fam Med Prim Care* [Internet]. 2017;6(4):744. Available from: <http://www.jfmpc.com/article.asp?issn=2249-4863;year=2017;volume=6;issue=1;spage=169;epage=170;aulast=Faizi>
 38. KUREYA T, NDAIMANI A MM. Malaria Outbreak Investigation in Chipinge, Zimbabwe: A Case-control Study. *Iran Soc Parasitol*. 2017;12(3):423–32.
 39. Lu G, Zhou S, Horstick O, Wang X, Liu Y, Müller O. Malaria outbreaks in China (1990 – 2013): a systematic review. *Malar J*. 2014;13(269):1–9.
 40. Guerra CA, Fuseini G, Donfack OT, Smith JM, Ayingono T, Mifumu O, et al. Malaria outbreak in Riaba district , Bioko Island: lessons learned. *Malar J* [Internet].

- 2020;19(277):1–9. Available from: <https://doi.org/10.1186/s12936-020-03347-w>
41. Mundagowa PT, Chimberengwa PT. Malaria outbreak investigation in a rural area south of Zimbabwe : a case – control study. *Malar J* [Internet]. 2020;19(197):1–10. Available from: <https://doi.org/10.1186/s12936-020-03270-0>
 42. Defi GB, Belachew A, Addissie A, Hailemariam Z. A Malaria Outbreak in Ameya Woreda , South-West Shoa , Oromia , Ethiopia , 2012 : Weaknesses in Disease Control , Important Risk Factors. *Am J Heal Res*. 2015;3(3):125–9.
 43. Tesfay K, Assefa B, Addisu A. Malaria outbreak investigation in Tanquae Abergelle district, Tigray region of Ethiopia: a case–control study. *BMC Res Notes* [Internet]. 2019 Dec 4;12(1):645. Available from: <https://doi.org/10.1186/s13104-019-4680-7>
 44. Kinung’Hi SM, Mashauri F, Mwangi JR, Nnko SE, Kaatano GM, Malima R, et al. Knowledge, attitudes and practices about malaria among communities: Comparing epidemic and non-epidemic prone communities of Muleba district, North-western Tanzania. *BMC Public Health*. 2010;10:1–11.
 45. Gerachew YW, Getayenew AT, Ayenew ML TY. Malaria Outbreak Investigation in Argoba District , South Wello Zone , Northeast Ethiopia , 2016 : A case control study. *BMC Infect Dis Poverty*. 2016;1–17.
 46. Debela MB, Kahsay AB, Mokonnen TM. Malaria outbreak and contracting factors in Afar. *J Public Heal Epidemiol*. 2018;10(July):233–40.
 47. Goodman SAR and RA. *The CDC field epidemiology manual*. 2018. 295–307 p.
 48. President US, Initiative M. *PRESIDENT ’ S MALARIA INITIATIVE ETHIOPIA*. 2019;
 49. Erhun WO, Agbani EO, Adesanya SO. Malaria Prevention : Knowledge , Attitude And Practice In A Southwestern Nigerian Community . *AFrican J Biomed Res*. 2005;8:25–9.

Chapter Two: Cholera Outbreak investigation in Guradhamole District, Bale zone Oromia region, Ethiopia, 2022

Abstract

Introduction: - A confirmed cholera outbreak was notified from Guradhamole District, Bale Zone of Oromia Regional State (PHEM) to National Public Health Emergency Management (PHEM) on November 5, 2022. We investigated the outbreaks that occurred in Guradamaole District of Bale Zone, Oromia Region, to Confirm and identify the contributing factors to the cholera outbreak.

Methods: The study design included 22 cases and 44 controls in a ratio of 1:2 mismatched case controls. A stool sample was sent to the regional laboratory in Adama on November 6, 2022, where it was cultured and discovered to be positive for *Vibrio cholera*. Nine (9) stool samples were examined using RDT, and one sample was examined using culture. In one culture and all RDT, *Vibrio-Cholera O1* serotype Ogawa was discovered. On November 22, 2022, water samples were brought to the Adama Regional Laboratory and tested positive for *Escherichia coli* type I. All four water samples were taken from canals that locals, pastoralists, and day workers used for drinking water and other domestic reasons. Other faecal coliform bacteria were also recovered from these samples.

Result:- On November 4, 2022, the Guradhamole district, Yadi Kebele, had the first outbreak of cholera. A male 4-year-old child was the subject of the index case. In Guradhamole, the outbreak then extended to the kebeles of Yadi, Habrona, and Ejeru between November 4 and November 22, 2022. Following Yadi Kebele in terms of reported case percentages is Ejeru Kebele. The cholera outbreak started in Guradhamole woreda on November 4-2022 and increased steadily until it peaked on November 16-2022. On November 23-2022, the disease was deemed to be over. The district reported a total of 22 cholera cases, with zero case fatality rates (CFR) and an attack rate (AR) of 1.6 per 1000 people. Yadi was where the majority of cases were found.

Conclusion: Lack of Oral Cholera vaccination (OCV), improper latrine utilization and use of untreated water utilization for food preparation are well associated risk factors for further

occurrence of Cholera outbreaks in the district. The Oromia regional health bureau, Bale zone Health office and Guradamole Health office are highly recommended to conduct community mobilization for preventive measures and then to communicate with EPHI for provision of OCV supplementation to the local community

. **Keywords:** Cholera outbreak, Guradamole District, Bale zone, Oromia region .

Introduction

Although most cases of cholera are seen in regions like Asia, Africa, and South America, a few cases occur in the United States each year. Cholera is diarrhoea caused by the bacteria *Vibrio cholerae*, serogroup O1 or O139. The infection is often mild or without symptoms, but sometimes it can be severe. The most common symptom is mild to severe watery diarrhoea, and occasionally nausea and vomiting. (1). Despite a 36% drop in deaths, WHO received nearly twice as many global cholera cases in 2019. Since 2010, when Haiti experienced a big epidemic, the Americas and Africa have witnessed the lowest numbers of cases and fatalities of the illness, respectively. 93% of all documented cases worldwide originate from Yemen, a single country. This reporting is subject to some limitations, and data for 2020 is still being compiled, so just a heads up. Between 2013 and 2021, 22 countries received more than 87 million doses of the oral cholera vaccine (OCV). 2019 saw the delivery of 9 million pills for preventive campaigns and 14.5 million dosages for outbreak responses.(2).

The cholera outbreak in Ethiopia has now affected 66 kebeles spread throughout 8 woredas in the Bale, Guji, and West Arsi zones of Oromia, as well as 2 woredas in the Liban zone of Somalia. As of January 30, 2023, 1,055 cases of cholera, including 28 associated deaths, had been reported. A million people are in high danger among the eleven woredas that are affected. The outbreak, which started in the Bale zone, has spread to the adjoining zones of West Arsi and Guji. Governmental and nongovernmental organisations, including the World Health Organisation (WHO), the Oromia and Somali Regional Health Bureaus (RHBs), and the Ethiopian Public Health Institute (EPHI), and others, the Ethiopian Ministry of Health organised a consultative and advocacy meeting on the implementation of the National Cholera Elimination Plan (NCP) on December 26, 2022.(3). In the Bale Zone of Oromia, there has been a reported cholera outbreak in 15 kebeles in 3 woredas (districts). 191 cholera cases have been documented as of 10 October 2022, with 4 deaths(3).

The Ethiopian public health institute received a report of a confirmed cholera case in a four-year-old male child in Jibri health centre, Yadi village, 10 km away from Guradhamole woreda, on December 5, 2022. A team from EPHI immediately contacted the woreda's public health emergency management (PHEM) focal person to verify the rumour. The Wereda focal person reported two confirmed RDT cholera cases. EPHI communicated the situation to the Oromia regional health bureau ORHB/PHEM coordinator and EPHI EOC. On November 6,

2022, a team consisting of field epidemiology residents was deployed to investigate the outbreak in Guradhamole woreda. The aim of the study was to assess the source of the outbreak, identify potential risk factors, and guide response in the affected Guradhamole woreda, Bale zone, Oromia region, south-east Ethiopia, from December 5–25, 2022.

General Objective

To assess the source of the outbreak and identify the potential risk factors following response activities in Guradhamole Woreda, Bale Zone, Oromia, Southeast Ethiopia, 2022

Specific Objectives:-

To describe the outbreak in terms of Time, place, and person (TPP),

To identify factors associated with the outbreak

To implement prevention and control measures.

Methodology

Study Area- The investigation was conducted in Guradhamole Woreda, Bale Zone, Oromia Regional State, and south-east Ethiopia. Guradamole is one of the woredas in the Oromia Region of Ethiopia. Part of the Bale Zone, Guradamole is bordered on the south by the Ganale Dorya River, which separates it from the Borena Zone; on the southwest by Meda Welabu; on the west by Mennana Harena Buluk; on the northwest by Berbere; on the northeast by the Mena River, which separates it from Goro; and on the southeast by the Somali Region. The administrative centre of the woreda is Haro Dibe. It is found at latitudes 6o 19 60.00'' N and 40o 29' 59.99'' E.

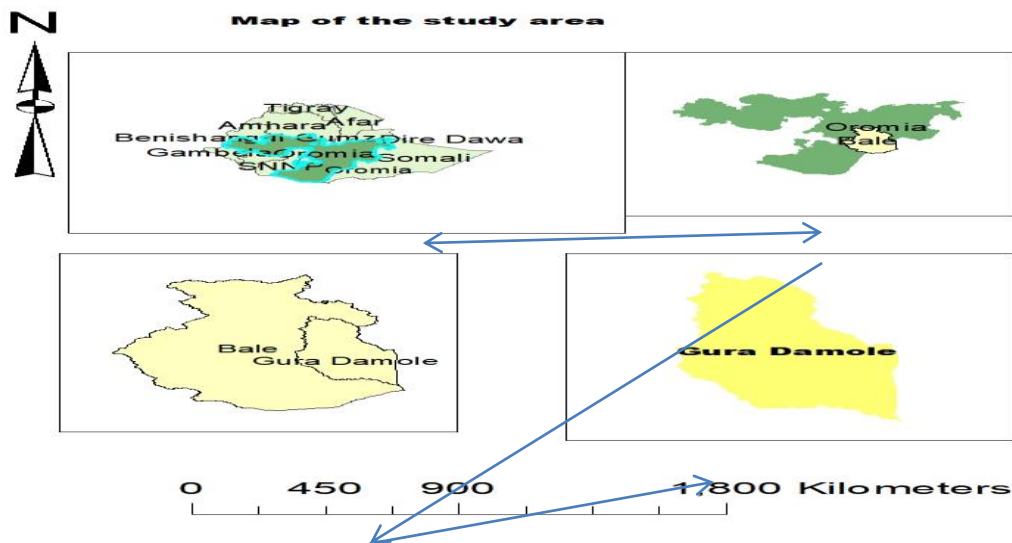


Fig 2. Map of the study area, Guradamole District, Bale zone, Oromia, South east Ethiopia, 2022

Study Design and Period

A descriptive cross-sectional study design was used to collect secondary data from the Guradamole Woreda health centre, including medical records and queue lists. The factors in the line list include age, sex, district, kebele (village) name, date of illness onset, and disease outcome. Some patients were questioned at the household (HH) level at Jibri Cholera Treatment Centre (CTC) to better understand their critical viewpoints. The research was done from November 5 to November 25, 2022.

Operational Definitions:

Suspected case: a case of cholera is suspected in an area where there is a cholera epidemic if a patient aged five or more develops Acute Watery diarrhoea (AWD) with or without vomiting.

Confirmed case: a suspected case, *Vibrio-cholera* 01 or 139 has been isolated from their stool.

Sample sizes:

The magnitude of the cholera outbreak was described using a descriptive cross-sectional study, and the risk factors for cholera infection were found using a 1:2 unmatched case-control study design. The descriptive study covered every suspected case of cholera noted on the line list. There were 66 samples in total (22 cases and 44 controls) for the case-control study. We located the cases on a list and then looked for their homes to conduct an interview. For each chosen case, two nearby controls who live in the same kebele were recruited. Cases that had contact history with another confirmed cholera case, the existence of cholera case(s) in the surrounding area, and the double population percentage calculation utilising the Epi-Info version 7.0 statistics package Consumption of holy water produced the biggest sample size, as seen in Table 1 below. A 2:1 control-to-case ratio was chosen for practical reasons. $Z=1.96$ (1:2 ratio of cases to controls), $P1 =$ proportion of exposure among the cases, and $Z=.84$ for 80% power are the values for 0.05 significant level. $P2$ represents the exposure rate in the control. Among the responders, there were identified pairs of cases and controls. All case-control respondents' data were collected. Utilising the variables Consumption of Holy Water (80% conducted in Addis Ababa, Ethiopia, with a 95% confidence interval (CI), a control-to-case ratio of 2:1, and an odds ratio (OR) of 20.5%, the necessary sample size was determined. However, to our advantage, there were 22 cases found on the line list, which is more than the sample size predicted. As a result, we took into account 44 comparable controls and all cases.

Table 6 Sample size Determination for the study on the cholera case outbreak investigation, Guradamole District, Oromia, Ethiopia, April, 2022

N	Variable/Factors	Confidence interval	Power	Exposed	OR	Control to case ratio	Sample size	Control	Case	Total	Reference
1	Consumption of holy water	95%	80	8%	20.5 %	2:1	20	10	30	(4)	
2	Eating Raw vegetables	95%	80	20%	15.3 %	2:1	20	10	30	(4)	
3	Washing hands with soap	95%	80	90%	0.04 %	2:1	16	8	24	(4)	

Sampling: All cases that meet standard PHEM cholera case definitions were included.

Dissemination of reporting: The study's findings were evaluated and shared with the Guradamole woreda health office, the Bale zone, the Regional Health Bureau, Addis Ababa University's School of Public Health, the Ethiopian Field Epidemiology Programme, and EPHI.

Sample collection and procedure.

Nine (9) stool samples were collected onsite and then detected with the Rapid Diagnostic Test (RDT) for Vibro cholera. Eight stool samples from patients and three water samples collected from the Dimal River (the common source of water for consumption by the local community) were transported to a regional laboratory for confirmation using Cary Blair Transport Medium, and a cold-chain transportation system was maintained.

Data Analysis and Quality Control

Data was checked and cleaned in time, place, and person using Micro Excel version 2016 and SPSS version 20 before analysis.

Permission letter for Ethical Considerations

The Bale Zone Health Bureau received an official letter from EPHI that was initially sent to the Oromia Regional Health Bureau. In order for the National investigation team from EPHI and the Oromia regional PHEM members to responsibly undertake the response activities at the site of the outbreak and take the full mandate to conduct the epidemiological and laboratory investigations and respond to public health emergencies related to the outbreak, the Bale zone Health Bureau forwarded to the Guradhamole Health Office (specifically to PHEM) to obtain permission and to do the outbreak investigation and response.

Reporting of the findings

The Guradhamole Woreda Health Office, Bale Zone Health Bureau, Addis Ababa University School of Public Health, Field Epidemiology Training Programme, and EPHI all received an interpretation along with an overview of the study's findings.

RESULT

Laboratory findings: On November 6, 2022, a stool sample was sent to the regional lab in Adama, where it was cultured and confirmed to be *Vibrio cholera* positive. Nine (9) samples from stool were tested using RDT, and one sample was evaluated using culture. One culture and every RDT included *Vibrio-Cholera O1* serotype Ogawa. On November 22, 2022, water samples that were brought to the Adama Regional Laboratory from four separate water sites contained *Escherichia coli* type I. All four water samples collected from canals used for drinking and other domestic purposes by villagers, pastoralists, and day labourers also included additional faecal coliform bacteria.

Descriptive Epidemiology

The cholera outbreak began on November 4, 2022, in the Guradhamole district of Yadi Kebele. The index case was observed in a four-year-old male child. The outbreak then spread

to three kebeles in Guradhamole, namely Yadi, Habrona, and Ejeru. During the period November 4–22, 2022–2023, a total of 22 cholera cases with no deaths were reported in Guradhamole district, with a 1.6 attack rate (AR) and a case fatality rate (CFR) of zero per 1000 people. The case was more common in males than in females.

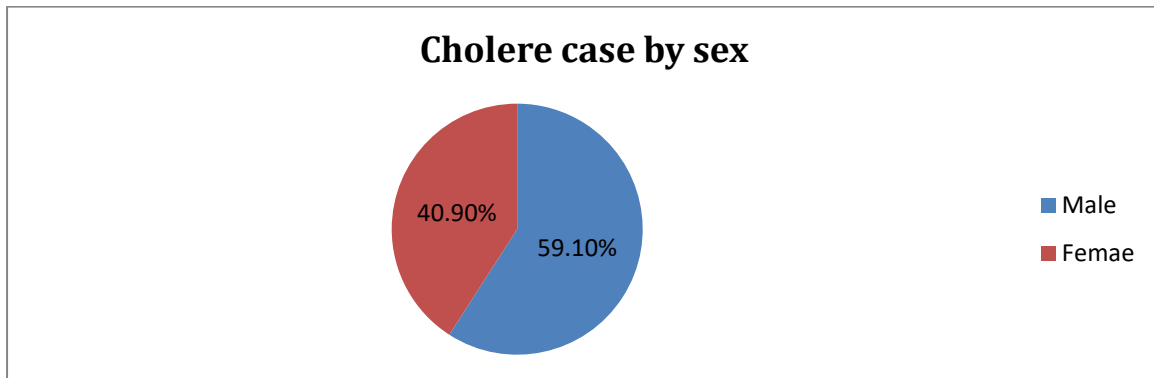


Figure 6 Cholera cases distribution by sex in Guradhamole district Bale zone, Oromia regional state, Ethiopia 2022

The median age was 19 years, with an age range of 1–66 years. Age-specific attack rate (ASAR) is highest (50%) among the 15–44 age groups, followed by the 5–14 age group (22.7%).

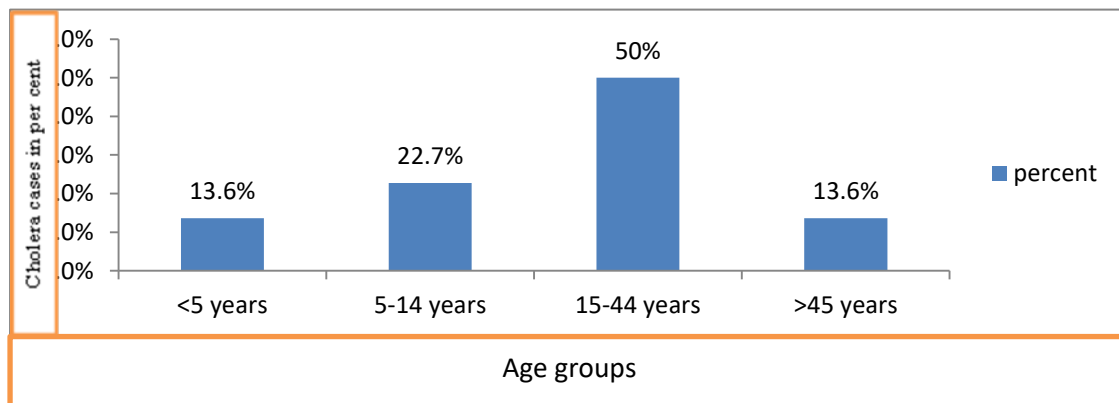


Figure 7 Cholera cases distribution by Age group in Guradhamole, Bale zone Oromia regional state, Ethiopia 2022

Three Kebeles in Guradhamole district were affected by the cholera outbreak in 2022. The highest proportion of cases was reported from Yadi Kebele, followed by Ejeru Kebele.

The cholera outbreak began in Guradamole woreda on November 4, 2022, and the number of cases gradually climbed until it peaked on November 16, 2022, when the outbreak was declared over on November 23, 2022.

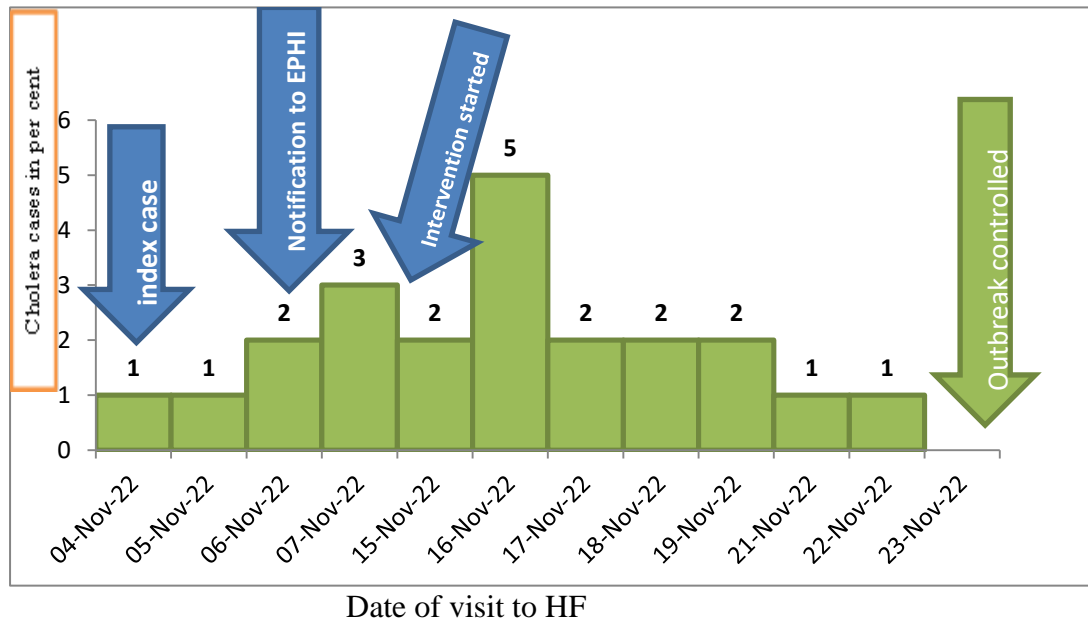


Figure 8 Number of cholera case by date of onset at Guradamole district, Bale zone of Oromia Region, Ethiopia,2022

In Guradamole district, Cholera outbreak was started in week 44; and reach its pick on week 46 of 2022. The outbreak was controlled in the 47th WHO Epidemiologic week of 2022.

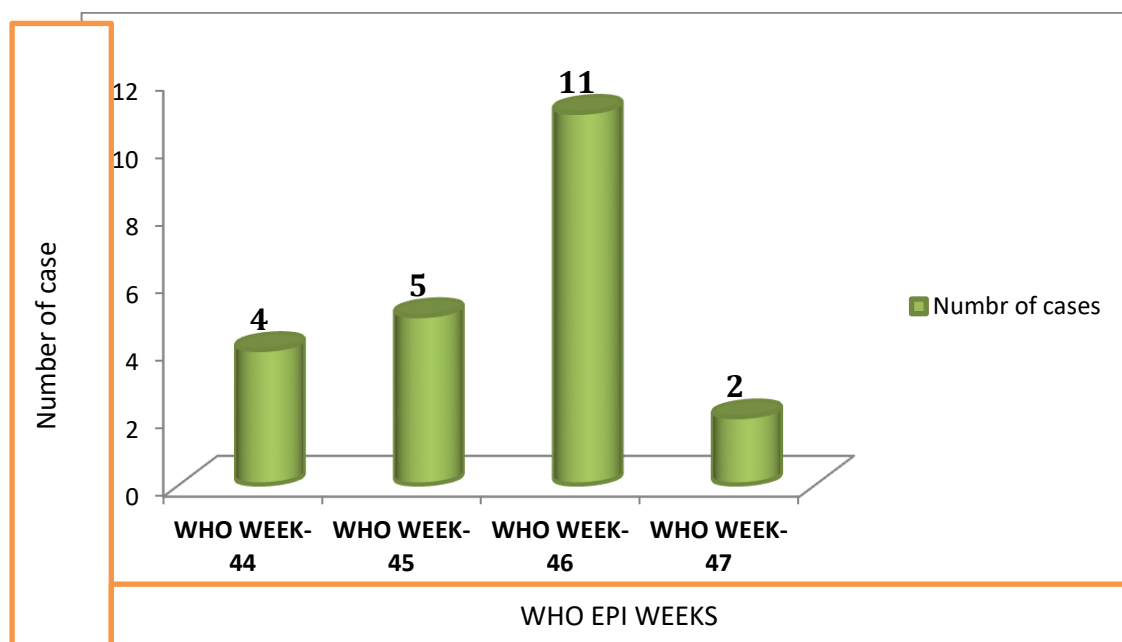


Figure 9 Distribution of cholera cases by WHO week, Guradhamole district, Bale Zone, Oromia Region, Ethiopia 2022

The cholera outbreak attack rate in Guradhamole woreda was 1.6 per 1000 people. Yadi Kebele had the greatest attack rate (3.42/1000). The cholera infection spread between kebeles that shared borders.

Table 5 Cholera outbreak attack rate by kebele in Guradhamole district, Bale zone, Oromia region, Ethiopia 2022,

SN	Kebeles	case	Population	AR/1000	Remark
1	Yadi	20	5832	3.42	
2	Habrona	1	4044	0.247	
3	Ejeru	1	3871	0.258	
	Total	22	13747	1.6	

In Guradhamole woreda, the cholera outbreak sex-specific attack rate was 1.6 per 1000 males and 1.62 per 1000 females. Females had the highest sex-specific attack rate (3.81/1000) in Yadi Kebele.

Table 6 Cholera outbreak Sex Specific Attack Rate By kebeles in Guradhamole district, Bale zone , Oromia Region, Ethiopia,2022.

Kebel es	Total Population	Male population	Male(SS AR)	Female Population	Female(SS AR)
Yadi	5832	2945	3	2887	3.81
Habrona	4044	2042	0	2002	0
Ejeru	3871	1955	0	1916	0
Total	13747	6942	1.6	6805	1.62

Analytical Epidemiological study

A total of 22 patients and 44 neighbourhood controls took part in the study to investigate risk variables for cholera infection in the Guradhamole area of Bale Zone, Oromia Regional State. During bivariate analysis, four variables were chosen as potential candidates for the final model. These variables were vaccination, drinking untreated water, and latrine use. Eating raw vegetables and two other factors were linked to cholera cases.

In bivariate analysis, variables with p-values less than or equal to 0.2 were selected for multivariable analysis to determine the variable's significance. Two variables were found to be substantially linked to cholera infection after controlling for confounding effects in the multivariable regression model. Having a Vaccination history is a protective factor for cholera infection (AOR = 0.066, 95% CI: 0.007–0.636), and utilising latrine facilities is a risk factor for cholera (AOR = 51.87, 95% CI: 2.641–1018.88).

Table 7 Bivariate and multi variation logistic regression analysis of cholera outbreak investigation in Guradhamole kebeles, Bale zone, Oromia Region, Ethiopia,2022

SN	Variable	Binary Logistic regression		Multinomial logistic regression			
		P-value	COR	P-value	AOR	95% CI for Exp (B)	
						Lower Bound	Upper Bound
1.	Vaccinated	0.002	0.158	0.019*	0.066	0.007	0.636
2.	Drinking untreated water	0.002	9.462	0.119	4.773	0.669	34.064
3.	None utilization	0.016	13.22	0.009*	51.87	2.641	1018.88
4.	Eating raw vegetables	0.027	4.667	0.357	2.263	0.398	12.850

Public health Interventions

The cholera outbreak intervention was based on four fundamental foundation.

Coordination

A task force and a committee were formed at the region, zone, and woreda levels to coordinate response efforts at the zone and woreda levels. The committee participated in several outbreak response efforts. Various non-governmental organisations (NGOs) communicated to provide logistical and material support for the outbreak response.

Surveillance

We started with rumour confirmation and worked our way up to outbreak confirmation. We took stool and water samples to confirm the outbreak and identify risk factors. We also assist the surveillance team with active case searches and contact tracing actions in the pastoral community (farm area). Contacts were tracked for five days. Cases were registered on a line list, examined, interpreted, and then shared with decision-makers. The daily SITREP was created and distributed to the appropriate stakeholders and partners.. Disinfection of cases' homes, clothing, and other objects that have come into contact with cholera cases

A. case management

One cholera treatment centre (CTC) at one health centre and three at the Kebeles CTU were built to treat cases. Ambulance service was available from CTC around-the-clock. According to national cholera treatment recommendations, cases in the CTC were given to the Jibri Health Center's medical staff for treatment. The CTC conducted operations for infection control and prevention. Cases were treated with IV flooding and ORS depending on how dehydrated they were. Antibiotics and chemoprophylaxis were given in accordance with the national cholera guideline for severe cases and contact with severe cases, respectively.

Social mobilization

To facilitate social mobilization operations, Districts health members were assigned to manage their own kebele. An ambulance megaphone was used to offer health information to 15,000 HH in the impacted kebele and nearby kebele in Guradhamole

woreda. A health professional assigned to their working region educates daily labourers about cholera. Health education was also delivered in markets and schools in the native tongue. Continuous health education was provided to caregivers.

WaSH interventions were among those pillars.

We looked at the hygiene and sanitation practises of the farmers, pastoralists, and daily workers as well as their usage of latrines. The daily workers had no access to latrines or safe drinking water sources. The water was taken straight from a Dumal River canal that was contaminated. We formed a kebele task force to manage the building of latrines

Discussion

On November 4, 2022, a cholera outbreak broke out in Yadi Kebele, Guradamole woreda, Oromia region. A four-year-old child visited the health centre as the index case. And the outbreak spread to Habona and Ejeru Kebele on November 13, 2022, and ended 19 days later, on November 23, 2023. Yadi Kebele, with AR, has the highest number of cholera cases (3.42%). The high attack rate (AR) in Yadi could be attributed to the kebel's large number of daily labourers and poor toilet conditions. The total attack rate (AR) was 1.6%, which was greater than the 0.69 in Amibara woreda, Afar Region(5). Our finding is also higher than the finding in Epidemiology of Cholera Outbreak and Summary of Preparedness and Response Activities in Addis Ababa, Ethiopia, 2016, which are 8,083 cases (AR of 0.24 per cent)(6). It is less than the Attack Rate (AR) for Harana Buluk and Berbere woredas, which are 55.1/100,000 and 24.94/ 100,000, respectively (7). Our findings are consistent with a study of cholera cases tracked along the Ganale River. Individual attack rates ranged from 0.03% to 4.12%, as did the overall attack rate for all three zones (nearly 0.50%)(8).

Case fatality rate (CFR) was zero, which is comparable to the results in the Amibara district in the Afar region(5). Our results are less severe than Ethiopia's fourth cholera update. By December 14, there had been 669 cholera cases (including 191 IDPs) reported in 5 woredas in the Bale zone (Harana Buluk, Berbere, Delo Mena, Gura Damole, and Meda Welabu), 1 woreda in the Guji zone (Girja), and 2 woredas in the Liban zone (Karsadula and Guradamole), with 24 related deaths (cumulative case fatality).(9). Our study is comparable to one that was done to investigate a cholera outbreak in four areas of the Kirkos sub-city of

Addis Ababa(10). Our results are comparable to the case fatality rate (CFR) for Berbere of 0% and lower than the CFR for Harana Buluk of 1.47% (8).

Participants who received a cholera vaccine are 93.4% less likely to become infected with cholera than those who did not receive a cholera vaccine (AOR = 0.06, 95% CI: 0.007–0.636). Oral cholera has the potential to drastically lower the global cholera load. With one-third of nations in danger of cholera, we can expect enormous, rapidly distributed, and long-lasting cholera epidemics like those recently seen in Yemen and Haiti.(11).

Household and Individual Risk Factors for Cholera Among Cholera Vaccine Recipients in Rural Haiti Oral cholera revealed that vaccination was used as part of cholera control in Haiti. (12). A study on The Role of Vaccine Coverage within Social Networks in Cholera Vaccine Efficacy found that increasing levels of vaccine coverage in bariatric social networks can lead to increasing levels of indirect protection for non-vaccinated individuals as well as increasing levels of total protection for vaccine recipients.(13). This is due to the fact that the vaccine works by exposing you to a small dose of live cholera bacteria, which causes the body to develop immunity to the disease.

Participants who don't use latrines are 51 times more likely to be infected by cholera than those who do (AOR = 51.87, 95% CI 2.641–1018.88). Similar to our findings in our study on Inadequate Hand Washing, Lack of Clean Drinking Water, and Latrines as Major Determinants of Cholera Outbreak in Somali Region, Ethiopia, in 2019, no use of latrines is a risk factor for cholera with no household level toilet or latrine (AOR 3.25, 95% CI 1.57–6.76).(14). A Systematic Review and Meta-Analysis of Risk Factors Associated with African Cholera Outbreaks The use of substandard public toilet facilities increases the spread of cholera in Africa(15). This is owing to the fact that cholera is an acute diarrheal sickness caused by a *Vibrio cholerae* bacterial infection of the intestine. People can become ill if they consume food or water contaminated with cholera bacteria, hence there should be no usage of latrines.

Conclusion

The Guradamole district witnessed a cholera outbreak, particularly in the third half of 2022. The outbreak arose as a result of improper latrine use. The Cholera outbreak in the district was caused by the *Vibrio cholerae* 01 serotype. Washing could potentially be a source of the outbreak. The outbreak could reoccur because of a lack of latrine use, a lack of clean water for drinking, and a failure of the surveillance mechanism to spot it early.

Recommendation

Lack of Oral Cholera vaccination (OCV), improper latrine utilisation, and use of untreated water for food preparation are well-associated risk factors for the further occurrence of Cholera outbreaks in the district.

The Oromia regional health bureau, Bale zone, and Guradamole Health offices are highly recommended to conduct community mobilisation for preventive measures, including proper latrine utilisation and proper water treatment, and then to communicate with EPHI for the provision of OCV supplementation to the local community.

Reference

1. Furlonge J. What Is Cholera? *Lancet*. 1854;64(1616):148.
2. The ROF. 8 TH ANNUAL MEETING OF THE GLOBAL TASK FORCE ON. 2021;(June).
3. Arsi W, Regional S. Cholera Outbreak - Flash Update #5. 2023;(January):28–30.
4. Dinede G, Abagero A, Tolosa T. Cholera outbreak in Addis Ababa, Ethiopia: A case-control study. *PLoS One*. 2020;15(7):1–12.
5. Violence GB, Health AR, Among O, With W, In D, Of A, et al. Addis ababa university college of health science school of public health. 2011;(May).
6. Endris AA, Addissie A, Ahmed M, Abagero A, Techane B, Tadesse M. Epidemiology of Cholera Outbreak and Summary of the Preparedness and Response Activities in Addis Ababa, Ethiopia, 2016. *J Environ Public Health*. 2022;2022.
7. Outbreak C, Readiness F. Dref application. 2023;1–23.
8. Bartels, S., Greenough, P., Tamar, M., & VanRooyen, M. (2010). Investigation of a Cholera Outbreak in Ethiopia's Oromiya Region. *Disaster Medicine and Public Health Preparedness*, 4(4), 312-317. doi:10.1001/dmp.2010.44.
9. Outbreak C, Update F. Cholera Outbreak - Flash Update #3. 2022;(November):13–5.
10. Tadesse T, Zawdie B. Cholera outbreak investigation in four districts of Kirkos sub-city in Addis Ababa, Ethiopia: A case-control study. *Med Res Innov*. 2019;3(4):1–6.
11. Wierzba TF. Oral cholera vaccines and their impact on the global burden of disease. *Hum Vaccines Immunother*. 2019;15(6):1294–301.
12. Matias WR, Teng JE, Hilaire IJ, Harris JB, Franke MF, Ivers LC. Household and individual risk factors for cholera among cholera vaccine recipients in Rural Haiti. *Am J Trop Med Hyg*. 2017;97(2):436–42.
13. Root ED, Giebultowicz S, Ali M, Yunus M, Emch M. The role of vaccine coverage within social networks in cholera vaccine efficacy. *PLoS One*. 2011;6(7):1–8.

14. Challa JM, Getachew T, Debella A, Merid M, Atnafe G, Eyeberu A, et al. Inadequate Hand Washing, Lack of Clean Drinking Water and Latrines as Major Determinants of Cholera Outbreak in Somali Region, Ethiopia in 2019. *Front Public Heal.* 2022;10(May):1–11.
15. Paye NG, Miller RHB, Zhou C, Weamie SJY, Davies TA. Systematic Study and Meta-Analysis of Risk Factors Associated with Cholera Outbreaks in Africa: A Review. *Adv Infect Dis.* 2021;11(02):240–60.

Chapter Three: Five years Surveillance data analysis of Severe Acute Malnutrition of Somali region, Ethiopia,2021

Introduction

Background

An all-encompassing word, malnutrition refers to any deviation from an adequate and optimal nutritional status brought on by a deficiency in a particular nutrient or by consuming a diet that contains an unsuitable ratio or combination of nutrients. Malnutrition comes in two flavours: overnutrition and undernutrition, and severe acute malnutrition (SAM) comes in three varieties: kwashiorkor, marasmus, and marasmic kwashiorkor. A person is either acutely or chronically malnourished, depending on the sort of nutritional insufficiency they are experiencing. Acute malnutrition is caused by an abrupt drop in food consumption, whereas chronic malnutrition results from insufficient nutrition over an extended period of time(1).

The Scale Up Nutrition (SUN) Movement was established at the spring 2010 World Bank and IMF meetings, at the height of a global financial crisis, by stakeholders from Ministries of Health, the UN system, development agencies, civil society organisations, academia, the private sector, and philanthropic bodies. In order to advance nutrition investments in the field of development work, members of the SUN Movement developed a Framework for Action to Scale Up Nutrition, based on the 2008 Lancet study with UN leadership. (2).

By creating international stakeholder networks, the SUN Movement sought to enhance nutrition-related collaboration and create a more persuasive nutrition agenda at the international and national levels. The Country Network, the Civil Society Network, the Donor Network, and the Business Network were formed by the SUN Movement as four Multi-Stakeholder Platforms (MSPs) under the direction of national leaders. Additionally, SUN Movement participants established MSPs in their home nations. (3)(4).

In 2009, the Ethiopian House of Representatives published the Food, Medicine and Health Care Administration and Control Proclamation (No. 661/2009)..

By ensuring the dependability and grade of commodities and medical services through the licencing, registration, and inspection of pharmacies, food outlets, medical practitioners, and healthcare facilities, both entities are obligated to promote and protect the public's health. In accordance with their respective mandates, both organisations will maintain the quality and security of nutritional supplies such as fortified foods, food fortificants/premix, micronutrient supplements (iron, zinc, folic acid, vitamin A, etc.), breast milk substitutes, infant and follow-up formulas, complementary foods, therapeutic and supplementary foods, iodized salt, and WASH(5).

The government has previously carried out policies and plans that aim to reduce undernutrition both directly and through indirect means. Some of the programmes on this list include those for increasing agricultural output, promoting girls' education, immunisation, integrated management of newborn and childhood illnesses (IMNCI), water and sanitation (WASH), family planning, skilled delivery, prevention of mother-to-child HIV transmission (PMTCT), and delaying pregnancy.. (5).

Statement of the problem

The marketing of foods and non-alcoholic beverages is now mostly uncontrolled in LMICs; where rules are there, they are typically voluntary guidelines that are ineffectively monitored and implemented. Rarely is WHO advice on recommended practises for such marketing followed. (6).

According to a 1974 proclamation issued at the World Food Conference, every man, woman, and child have the inherent right to be free from hunger and malnutrition. 98% of them lived in regions that were developing economically. Malnutrition has a disproportionately negative impact on socially vulnerable populations including children and expectant mothers. (7)(8).

Insufficient access to food, malnutrition in children and pregnant women, and disparities between sexes all contribute to a cycle of nutrition problems that impact present and future generations and increase the risk of stillbirths, miscarriages, low birth weight, growth failure, maternal and neonatal mortality, impaired cognitive development, below-average adult productivity, and slower national economic growth(9).

There may be an association between age and physical nutritional status. It is commonly known that the mother's size and body composition at the onset of pregnancy have significant variables on the growth of the foetus. Ensuring that teenage girls are physically and nutritionally capable of having children is essential. According to the 2011 Ethiopian Demographic and Health Survey (EDHS), the average age of a first marriage is almost 16.5 years old. 13% of teenage girls (ages 15 to 19) are now mothers or are about to become parents for the first time(10)(11)(12).

According to preliminary findings from the Cost of Hunger in Africa (COHA) study, malnutrition costs Ethiopia, Sudan, Swaziland, and Egypt between 1.9 and 16.5% of each nation's respective national Gross Domestic Product (GDP), especially in Uganda(13)(14).

Over 3.5 million children under the age of five worldwide die each year from causes primarily attributable to malnutrition. Over 13 million births each year result in low birth weight (LBW) infants. In addition to the 19 million severely wasted children, there are 55 million wasted children overall. Children who are stunted number 178 million worldwide. Ethiopia included, only 36 countries are home to 90% of the 178 million people on the planet. Obesity prevalence in preschoolers was 6.7% all over the world. Globally, malnutrition is one of the top four causes of child mortality. In 2013, 45% of all mortality among children and adolescents were attributable to malnutrition, according to the World Health Organisation (WHO). A 60.7% mortality rate has been associated with it (15)(16)(17). In Africa, there are 8.5% of all instances of obesity. Twenty-two of the 34 countries that account for 90% of the world's malnutrition burden are in Africa, and this continent has seen an increase in the number of stunted children as a result of population growth and a nearly constant frequency of stunting over the past 20 years(18)(19).

Ethiopia is the sixth wasting burden country among the top ten most harmed countries. Stunting affects 44.4% of children nationwide, underweight affects 28.7%, and wasting affects 9.7%, according to the 2011 EDHS. A body mass index (BMI) of less than 18.5 kg/m² is considered to be thin or undernourished, and the poll finds that 27 percent of Ethiopian women meet this criteria. This suggests that there is a comparatively high prevalence of chronic malnutrition among Ethiopian women. Between 2000 and 2011, the prevalence of stunting and underweight fell by 32 and 23%, respectively (20).

Addis Ababa is an ideal spot to discuss the coexisting rates of malnutrition and overnutrition. Ethiopia's capital and biggest city is Addis Ababa, which is also one of the most food insecure and underweight countries in the world. The city's obesity and overweight rates are comparable to those of other cities in the Sub-Saharan Africa (SSA) region, where 10.2% of adults and 25.7% of school-age children and women were overweight or obese, respectively. In this capital, trends in the rising obesity rates have not yet been identified, and nothing is known about the causes of being overweight. But these details could make programme and policy approaches to dealing with concurrent underweight more clear(21)(22).

A study using information from the Ethiopian Demographic and Health Surveys conducted in 2000, 2005, and 2011 found that the prevalence of overweight/obesity increased significantly from 16.1 to 20.6% in Addis Ababa's non-pregnant women of reproductive age (age 15-49), while the prevalence of underweight decreased from 17.9 to 14.1% (23).

There is a knowledge gap regarding the presence of the double burden of malnutrition in teenagers, which is apparently crucial to the accomplishment of numerous public health goals, including the Millennium Development Goals aiming to reduce child and maternal mortality and non-communicable diseases. Despite the fact that there have been many studies on child malnutrition in Ethiopia, more study is still needed (24).

Rationale of the study

Malnutrition is one of the thirty-two prioritised events and diseases based on defined parameters and included in the national surveillance system, according to the National Public Health Emergency Management (PHEM) guideline. These top-priority incidents and illnesses are divided into those that require immediate attention and weekly reporting. By employing a defined weekly reporting format at all levels of government (community to national level), of which SAM is a weekly reportable condition.

The MOH has also developed and placed into action a national nutrition program and initiatives by establishing strategic goals and targets that either directly or indirectly help to lower the rate of malnutrition. Ethiopia is faced with difficulties due to recurrent humanitarian crises including floods, droughts, and conflicts that have an impact on agricultural productivity and the ability to provide a healthy meal for the populace.

Directly or indirectly, the situation is having an impact on the Somali region, which is leading to a rise in malnutrition cases and fatalities. The existence of low socioeconomic class populations and street children in the area, along with these humanitarian situations, has a significant impact on the rise in SAM cases and fatalities. These factors led to the weekly reporting of a particularly high number of SAM cases through the surveillance system. Therefore, the aim of analysing the last five years SAM data in the Somali Region was to determine the incidence of SAM cases, describe the trend of SAM cases and deaths in the region, describe cases epidemiologically, provide information for effective planning and targeted interventions, and provide an input or basis for further research on it.

Significance of the study

The purpose of this study was to demonstrate the extent of malnutrition in the Somali regional state, which was its main contribution. The implementation of intervention strategies will thereafter occur. The impact of malnutrition will be reduced to a manageable level if the implementation procedures are subjected to routine monitoring and evaluation. The expense of treating malnutrition will consequently decrease, as will the amount of time wasted attending to cases. We're going to do something else useful with this time. The national nutrition program's and nutrition surveillance's goals can be met thanks to these methods.

Objective

General objective

To provide malnutrition information for appropriate public health planning, enforce nutrition-related policies, and guide the effective use of malnutrition treatment supplies in the Somali region in 2021.

Specific objectives

To determine the magnitude of Severe Acute Malnutrition (SAM),

To determine the mortality and morbidity due to Severe Acute Malnutrition (SAM),

To describe Severe Acute Malnutrition (SAM) cases epidemiologically

To determine the proportion of Severe Acute Malnutrition (SAM) cases treated as inpatients and outpatients

Methodology

Study area population

The study area for this last five years malnutrition data analysis was the Somali regional state. The Somali regional state is divided into eleven Zones and six specizones (94 woredas administratively).

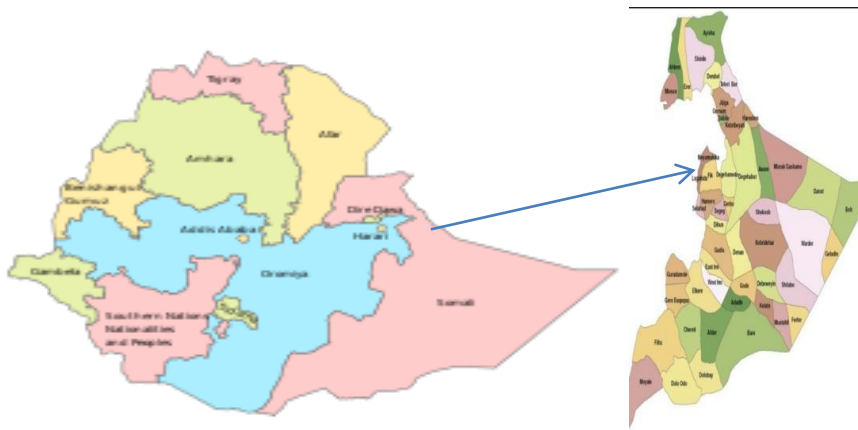


Figure 10 Map of study area of Surveillance Data Analysis of SAM of Five years (2016–2020), in Somali Region, East Ethiopia,2021 .

Study population

The average total population of the regional state for the study period was projected to be 15,654 million (based on CSA 2017), and The total area of the regional state is 327,068 km². The study population for this malnutrition data analysis was all children less than five years of age found in the region.

Study period and design

A retrospective secondary data review was conducted to analyse the last five years (2016–20120) PHEM surveillance malnutrition data for the Somali region from April 15–30, 2021.

Data collection tools and procedures

Malnutrition surveillance data was requested from the national Public Health Emergency Management (PHEM) team, and permission was gained to access the data from the PHEM data management case team. The PHEM weekly reporting format for malnutrition was used to collect the data.

Assessment and data quality assurance

The PHEM surveillance malnutrition data for the Somali region were examined, validated, and cleaned to ensure their completeness, validity, and consistency.

Analysis of data

Data obtained from the Somali Region's PHEM surveillance program over the previous five years (2016–2020) were analysed using Microsoft Excel 2010. Evaluation and descriptions of malnutrition cases in the region recorded between 2016 and 2020 were based on the use of basic mathematical operations (addition, subtraction, division, and multiplication).

Data dissemination

The final result of the analysis will be submitted to Addis Ababa University School of Public Health Department of Field Epidemiology, FMOH, EFELTP, Somali Region, Regional Health Bureau/PHEM Unit, and EPHI.

Ethical issues

Verbal informed consent to access and analyse the last five years (2016–2020) PHEM surveillance malnutrition data for the Somali region was obtained from the national PHEM Head after a detailed explanation of the objective, methodology, and data dissemination.

Results

There was also a discrepancy in the sum total of malnutrition in all woredas. This indicates that there were missing values or mathematical errors in registration or during addition. Because all the numbers figured out on the sum total were correspondingly unmatched.

Table 8 Distribution of SAM cases of out & in patients by reporting sites(Zones), Somali region, April 2021, Ethiopia

Reporting sites(Zones)	Sum of Malnutrition OutPts Cases	Sum of Malnutrition InPts Cases	Sum of Malnutrition total Cases
Afder	86354711 (9.4%)	30 (4.%)	34307917
Dhewa	31543376 (3.4%)	0	12383912
Doollo	58842597 (6.4%)	156 (23.2%)	23002782
Erar	70886225 (7.7%)	0	27863802
FAAFAN	133264446 (14.4%)	25 (3.7%)	52707102
Fik	58416605 (6.3%)	0	22572520
Jarar	119190054 (12.9%)	273 (40.7%)	46692012
Korahe	100941706 (10.9%)	7 (1.0%)	39383882
Liben	68665861 (7.4%)	15 (2.2%)	26784960
NOGOB	4581413 (0.5%)	45 (6.7%)	2104848
SHABEELE	103769605 (11.3%)	105 (15.7%)	40584900
SITTI	85855555 (9.3%)	14 (2.1%)	33537135
Grand Total	922312154	670	361925772

From the last 5 years reports of 12 Zones of reporting sites in Somali Regions, 3 Zones were not included in 2016 (Dhawa, Elar, and Fek), and one Zone (Nogobo) was silent starting from 2017 up to the reporting date.

Table 9 Distribution of SAM cases as outpatient & inpatient cases by reporting year, April 2021, Somali region, Ethiopia.

Years	Sum of Malnutrition OutPatient Cases	Sum of Malnutrition InPatient Cases	Sum of Malnutrition total Cases
2016	18492	670	19162
2017	185504746	0	185504746
2018	233012136	0	233012136
2019	247389915	0	247389915
2020	256386865	0	256386865
Grand Total	922312154	670	922,312,824

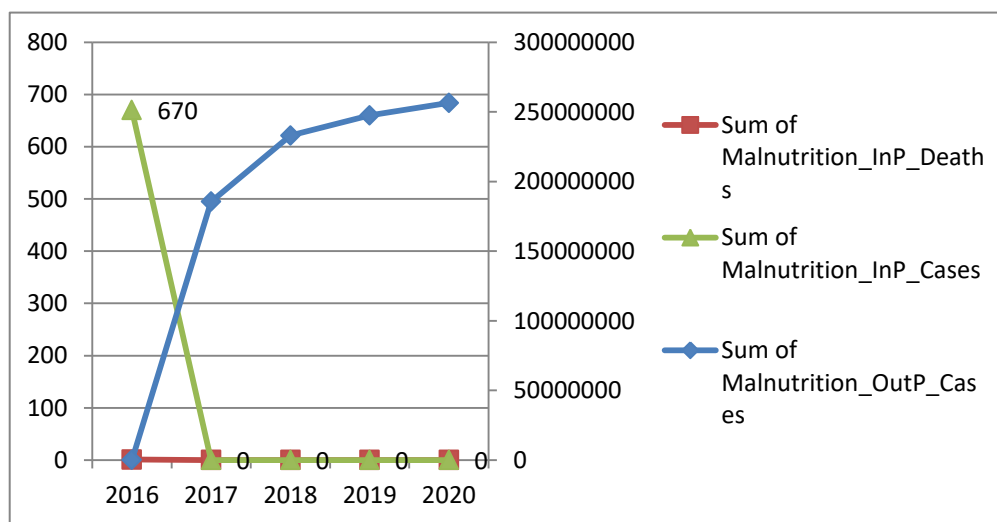


Figure 11 Trends of SAM cases by year in Somali, Ethiopia, April 2021

The number of cases increased from year to year consecutively (2016–2020), with the highest number of cases (256,386,865), or 27.8%, being reported in 2020. Fafaan is the leading zone, followed by Jarar and Shebelle (second and third, respectively). In 2020, regardless of season, the number of SAMs in all months was very high.

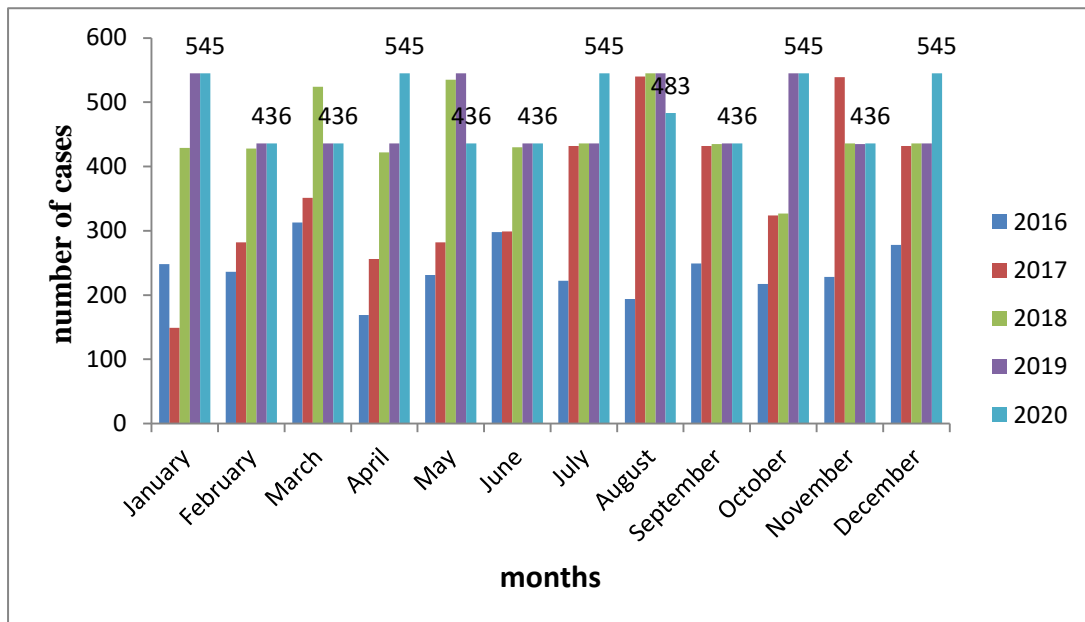


Figure 12 Distribution of SAM cases by months of each year,(2016-2020),April 2021, Somali, Ethiopia

There were a total of 922,312,154 & 670(outpatient & inpatient SAM cases) respectively. (Faafan, Jarar & Shebelle) were the top three zones with the distribution of SAM cases at outpatient with 14.4%, 12.9% & 11.3% respectively.

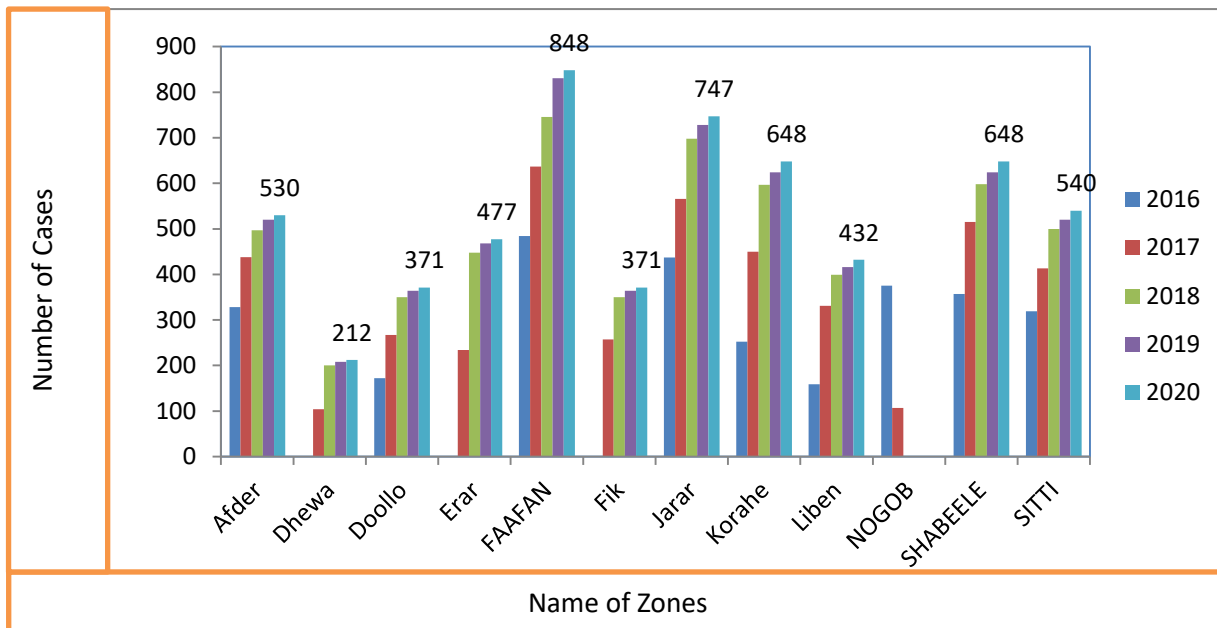


Figure 13 Distribution of SAM cases by zones in years(2016-2020), April,2021, Somali, regional state, Ethiopia.

From the total of 670 inpatient cases in 2016, one death (CFR 0.14%) was reported from Afder Zone, Gura Damole Woreda, and there was no death report in all the rest of the reporting years either as an outpatient or an inpatient.

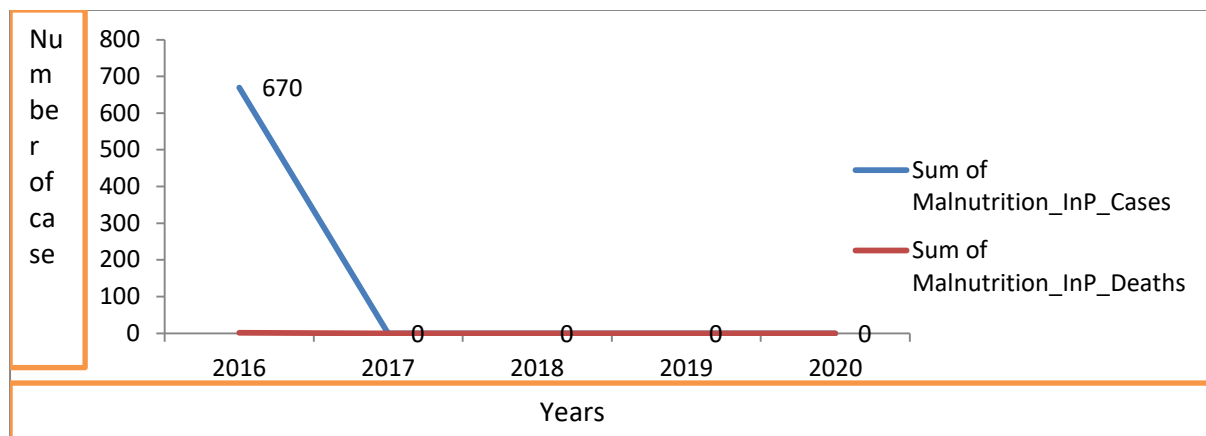


Figure 14 Trends SAM cases in death at in patients, in year(2016-2020), Somali region, 2021

The highest SAM case was reported in the 34th Epi. Week of 2020, other than the rest of the reporting years. The case for the increments was not clearly defined. However, drought, displacement, starvation, and the poor economic level of an individual Costs of food items, a

lack of strong nutrition-related policies, irregular inspection of packed foods, and growth in population are thought to be the underlining causes.

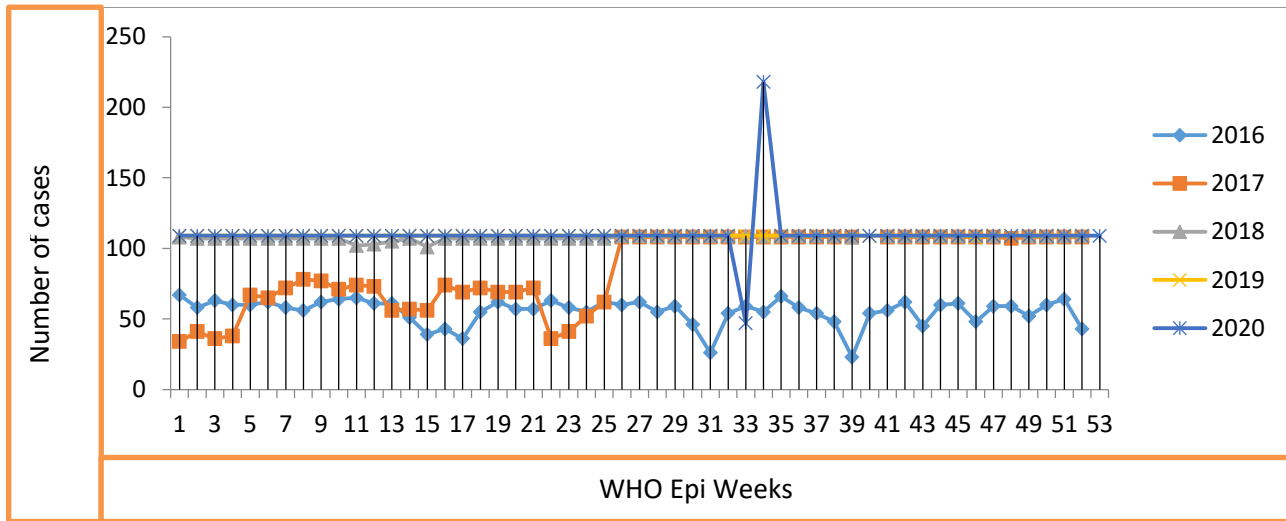


Figure 15 Trends of SAM cases in Epi. Weeks of each year, (2016-2020), April 2021, Somali region.

Discussion

In the Somali Regional State between 2016 and 2020, there were 922,312,824 cases of severe acute malnutrition (SAM) (9922,312,154 outpatient cases and 670 inpatient cases, respectively). This translates in a death rate of 0.0000001 per 1000 individuals for the years 2016 to 2020, or an average of 184,462,565 cases annually.

Each year between 2016 and 2020 saw an increase in the number of cases that had been recorded, with 2020 seeing the most cases (256,386,865), or 27.8%, of all cases. Jarar and Shebelle are the second and third zones, respectively, with Fafaan in the forefront. There were no circumstances for increments that could be distinctly identified. The price of food items, a lack of strong nutrition-related policies, and irregular packaging inspection may all be contributing factors to this rise in SAM cases. Given the discrepancy in the total number of instances, the growth may perhaps be due to more full data. Coordination issues and a poor reaction from the nutrition acting authorities are two potential contributing factors to the increase. SAM prevalence is increasing, and resources for controlling it have been increased, according to the surveillance report from which the numbers were drawn.

Despite a lot of reports from outpatients, deaths were not documented in any of the five years—only in 2016—and there was only one fatality reported among inpatients. Uncertainty exists on how to tie the number of cases reported during the course of the reporting year to the number of reported deaths. It is obvious that incomplete values in the sum total can raise the possibility that there may be a discrepancy in registration, so advice on data clearing, completeness, and validation as of reporting time should be made. In EPI week 34 of 2020, there were the most SAM cases recorded. Since malnutrition lowers a person's immunity, making them more susceptible to numerous communicable diseases, which are regarded as the main underlying causes, families and healthcare facilities are focused on dietary supplementation and seeking out health care services. As a result, every home in the country as well as the entire country must pay for medical supplies.

The data generated by the weekly PHEM surveillance system are not very informative due to the minimal number of features and variables—which exclude factors like age and sex—used in it. The woreda collected data quickly, yet the summary had contradictions once more. Without these pertinent characteristics, it is difficult to analyse and interpret instances by woreda, age group, or sex, which is essential for targeted planning and intervention as well as effective use of limited resources. It is also difficult to assess the incidence of both MAM and overall malnutrition (MAM and SAM) patients since the study did not cover cases of MAM. The proportion of MAM patients that developed into SAM cases was also unknown.

Limitations

Due to a lack of sufficient data for these age groups in all SAM cases, infants younger than six months of age are included in the denominator used in this analysis. Due to the absence of age, sex, and woreda/kebele characteristics in the weekly PHEM surveillance reporting format, the study did not identify case distribution by any of these factors. MAM instances were not included in the PHEM report either. These restrictions also restricted the analysis for future planning, as well as the range of the conversation. Additionally, there were inconsistencies in the missing values and the total number of instances.

Conclusion and Recommendations

Although millions of malnutrition cases were treated under SAM, their numbers were also overestimated because MAM cases were not included in the weekly PHEM report. From year to year, more SAM cases were reported.

For the correct malnutrition estimate, MAM and SAM case data must be gathered and reported by all levels of reporting units.

To have complete information on the cases, MoH must include the necessary characteristics, such as age and sex, in the weekly surveillance data reporting format.

The PHEM reporting formats need to be modified by the federal government and Somali Regional State to include MAM cases, age, and sex. To identify the predisposing elements, research organisations or anyone else with an interest should conduct more research.

MoH should implement nutrition-related policies and maintain routine inspections of packaged foods in place of food security programmes like CBN (community-based nutrition), OTP (outpatient therapeutic feeding programme), and TSFP (targeted supplementary feeding programme). Incorporating and improving a multi-sectoral approach is also necessary to combat malnutrition.

MoH and Somali Regional State are highly recommended to forward capacity-building training for all health workers, including HEWs and health care providers.

References,

1. Harvard Medical Cases on the world's health care delivery system. 2015-October, GHD-C08.<http://docplayer.net/41279476-Malnutrition-cases-in-global-health-delivery-ghdc08-october-2015-concept-note.htm>
2. Nutritional Scaling. the Scaling Up Nutrition Movement's introduction. February 2014. [wpcontent/uploads/2014/04/Orange_Internal_Outline_ENG_20140415_web.pdf](http://www.scalingupnutrition.org/wp-content/uploads/2014/04/Orange_Internal_Outline_ENG_20140415_web.pdf) at scalingupnutrition.org.
3. Secretariat of SUN Movement. SUN is a worldwide initiative to eradicate malnutrition. Movement for Scaling Up Nutrition; 2015. [Pager_from 4pager_ENG_20150227_web_pages.pdf](http://www.scalingupnutrition.org/wp-content/uploads/2015/02/4pager_ENG_20150227_web_pages.pdf), available at <http://scalingupnutrition.org/wp-content/uploads/2012/10>.
4. Nutritional Scaling Up. Nutrition Scaling Up: In Use. Engaging Multiple Stakeholders Effectively. 2014 February. http://scalingupnutrition.org/wp-content/uploads/2014/02/Nutrition_Scaling_Up_In_Use_Engaging_Multiple_Stakeholders_Effectively.pdf
5. The Federal Democratic Republic of Ethiopia's administration. Programme for National Nutrition between June 2013 to June 2015
6. WHO (2010). a set of guidelines for targeting children with food and drinks that are not alcoholic. The World Health Organisation, or WHO, is based in Geneva, Switzerland. You can download [9789241500210_eng.pdf](http://whqlibdoc.who.int/publications/2010/9789241500210_eng.pdf) from <http://whqlibdoc.who.int>.
7. The multiple facets of food security: the level of food insecurity around the world. 2013. <http://www.fao.org/docrep/018/i3458e/i3458e.pdf>.
FAO, WFP, and IFAD are
8. The World Food Programme, the International Fund for Agricultural Development, and the UN's Organisation for Food and Agriculture. the state of food insecurity on a global scale. Taking Stock of Different Progress Towards 2015 Global Hunger Goals. Organisation for Economic Cooperation and Development, Rome, 2015.
9. Trends & issues with child undernutrition, T. Benson and M. Shekar (2006). Disease and Mortality in Sub-Saharan Africa

11. Scholl, T. O., Hediger, M. L., Bendich, A., Schall, J. I., Smith, W. K., & Krueger, P. Prenatal multivitamin/mineral supplements use: Impact on the pregnancy's outcome. 146:134–41 in American Journal of Epidemiology.

12. CSA & ICF Worldwide (March 2012). Study on health and demographics in Ethiopia, 2011. Adis Abeba.

The United Nations' Food and Agriculture Organisation. Food Systems as a Basis for Better Dietary Supplements The State of Food and Agriculture. Rome; 2013. <http://www.fao.org/docrep/018/i3300e/i3300e.pdf>.

14. Child malnutrition in Africa its its socioeconomic effects. Visit <http://www.carmma.org/update/socio-economic-impact-child-malnutrition-africa> for further details. 18th of July 2014, accessed

15. Maternal and child undernutrition: Global and regional exposures and health impacts, Black, R., Allen, L. H., Bhutta, Z. A., Caulfield, L. E., De Onis, M., Ezzati, M., Mathers, C., and Rivera, J. The Lancet, published 17. Caulfield LE, Onis M de, Blössner M, Black RE. Undernutrition as an underlying cause of child deaths associated with diarrhea, pneumonia, malaria, and measles. Am J Clin Nutr. 2004;80(1):193 ---198.

18. de Onis M, Blössner M, Borghi E (2010). Global prevalence and trends of overweight and obesity among preschool children. Am J Clin Nutr. 92(5):1257–64. <http://dx.doi.org/10.3945/ajcn.2010.29786> PMID:20861173

19. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 384(9945):766–81. [http://dx.doi.org/10.1016/S0140-6736\(14\)60460-8](http://dx.doi.org/10.1016/S0140-6736(14)60460-8) PMID:24880830

20. Tran A, Gelaye B, Girma B, Lemma S, Berhane Y, Bekele T, Khali A, Williams MA: Prevalence of metabolic syndrome among working adults in Ethiopia. Int J Hypertens 2011, 2011:193719. doi:10.4061/2011/193719. Epub 2011 May 26.

21. Kebede D, Ketsela T: Precursors of atherosclerotic and hypertensive diseases among adolescents in Addis Ababa, Ethiopia. *Bulletin of the World Health Organization* 1993, 71(6):787–794.
22. Yibeltal T, Charles T, Uriyoan C (2000). *The Rising Overweight-obesity and Its SocioDemographic Correlates in Addis Ababa.Ethiopia.* 2011 pp. 1-14.
23. World Health Organization, (WHO) (2009). *Global health risks: mortality and burden of disease attributable to selected major risks.*
24. Federal Democratic Republic of Ethiopia Central Statistical Agency. *Population Projection of Ethiopia for All Regions at Wereda Level from 2014 – 2017, August 2013, Addis Ababa.*
25. <http://populationof2018.com/addis-ababa-population-2018.html>
26. Federal Democratic Republic of Ethiopia, Ethiopian Health and Nutrition Research Institute. *Public Health Emergency Management Centre. Addis Ababa, Ethiopia February 2012.*
27. *Scaling Up Nutrition. Draft State of the SUN Movement Progress Report. September 2013.* http://scalingupnutrition.org/wp_content/uploads/2013/09/SUN_Progress_Report_2013_ENGLISH1.pdf.

Abstract

Introduction - HIV/AIDS cases are a serious issue that requires constant observation, follow-up, and reporting through a case-based surveillance (CBS) system. The goal of public health surveillance is to gather, evaluate, comprehend, and disseminate information about any occurrences that impact public health. HIV/AIDS is a highly infectious and contagious illness that affects everyone on the globe and makes it difficult for individuals to lead a healthy life.

Objective: The objective of this study was to describe the case-based surveillance system for HIV/AIDS at selected ART sites, the Zone Health Department, and Woreda Health Offices in relation to the case-based surveillance system and to evaluate the key system attributes of the South Omo Zone, Jinka, SNNRS, and Ethiopia.

Method: A descriptive, cross-sectional study design was used to evaluate the system. The study was conducted from October 25 to November 5, 2022, to collect relevant information on HIV/AIDS case-based surveillance-related performance attributes, reporting systems, and other related issues using the structured questionnaire by interviewing the facility's ART focal person, service providers at Point of Care (POC), and data clerks from the Zonal and Woreda HIV versions, in addition to assessing records and documents.

Result: The overall two-year case-based surveillance system evaluation related to HIV/AIDS in Jinka Zone Health Department indicated that all ART sites (12/12) have well-computed and analysed trends of ART, CD-4, viral load follow-up, transfer out (TO), and transfer in (TI) without much difficulty, and the formats are assumed to be easy and comprehensive. In the first quarter of 2022, thirty-eight (38) index cases were completed, and 11/38 (28.9%) were declared positive. Four hundred forty-five (207 and 238, male and female), respectively, were newly identified as HIV cases in the past two years. The case was more figurative in the age groups ranging from 25 to 49, with 153/207 (73.9%) in males and 141/338 (59.24%) in females. A total of three thousand eight hundred sixty-six were PLHIV. 3050/3866 (79%) have known their status. 2977 (97.6%) had been on ART, and 66.5% were virally suppressed. The performance attributes of HIV include data analysis, flexibility, usefulness, and simplicity (46/46; 100%), data quality, sensitivity, and related systems. All 12/12(100%)

ART sites have met the expected timeliness and completeness perfectly in the last twelve months. CBS representativeness is only 4/12 (33.3%). The total population under surveillance was 820,472. The number of males and females is 401,520 (48.9%) and 418,952 (51.1%), respectively.

Conclusion: Checking up on the public health surveillance system on a regular basis is key to finding out what's working and what needs to be improved. In the South Omo Zone, the case-based surveillance system was good, but to make it even better, more supervision and data management are needed in addition to paying attention to the malfunction of the CD-4 machine due to a lack of calibration. The case-based surveillance system for HIV/AIDS is really helpful in figuring out how many cases there are and how bad the morbidity and mortality rates are in the zone. It's also simple, flexible, and well-liked by everyone who was assessed at POC.

Key word-HIV/AIDS, CBS, Jinka, South Omo, Ethiopia

Introduction

Background

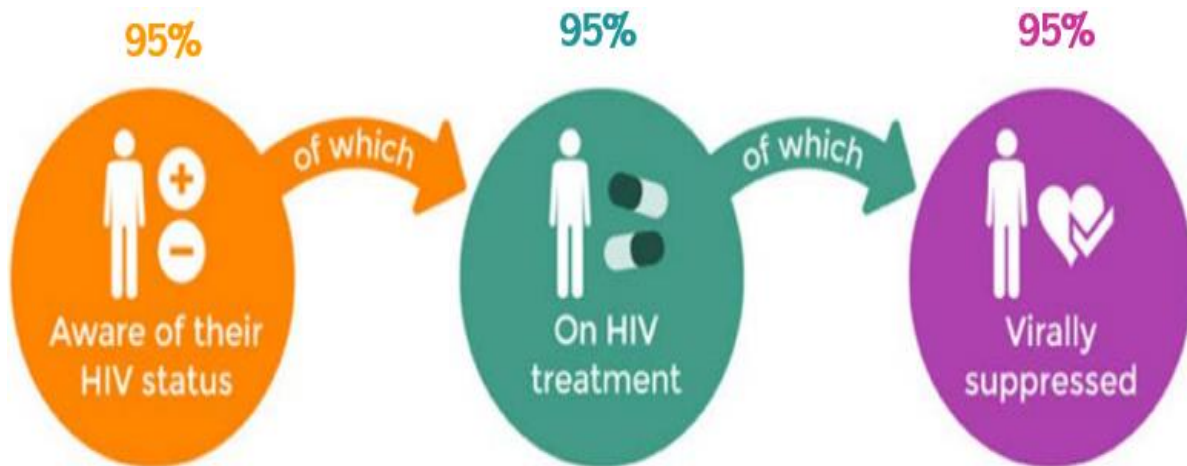
The on-going, systematic collection, analysis, interpretation, and dissemination of data about a health-related event for the purpose of lowering mortality and morbidity and improving health is known as public health surveillance. This can be accomplished in a number of ways, including by identifying the causes of diseases, formulating plans of action, planning, and monitoring health efforts (1). It is carried out through a system with legal support that extends across various communication channels from the top-level central health authority all the way down to the level of peripheral health institutions and the community. These sets provide mechanisms for upstream and downward ward reporting and feedback(1)(2)(3). Ethiopia used a variety of tactics to create a functional surveillance system. However, timely reporting and analysis of surveillance data for communicable non-communicable diseases is lacking. As a result, there is little chance to intervene with a sensible public health response and save lives. Even when sufficient data is gathered, it is frequently unavailable for use at the local level(4). Understanding these issues In September 1998, at the 48th meeting of the Regional Committee for Africa in Harare, Zimbabwe, African States adopted integrated disease surveillance (IDS) as a regional strategy (resolution AFRO/RC48/R2) for early detection and effective response to priority communicable diseases for the African region(2). The Federal Ministry of Health has been reforming and reorganising the health sector since 2008, focusing in particular on the concept of BPR for disease surveillance and response. This makes the Public Health Emergency Management (PHEM) Center's surveillance of priority diseases a reliable system. The capacities of this new structure extend all the way down to the district level. Using cutting-edge technology, this is intended to improve tracking and monitoring of diseases of public health issues. Ethiopia is also preparing to adopt the International Health Regulation (IHR), which member states proclaimed in 2005, as a member state of the WHO(5). Since HIV/AIDS places a significant strain on society, it is recognised as a disease that must be reported every month and every week (if there are any new cases). These circumstances were determined based on: Under IHR 2005, high infectious potential diseases must be reported globally(6). The overall purpose of surveillance of this virus is to monitor the trend against the seated tolerance limits, pick up any deviation from the limit at the earliest point in time, and have a prompt response.

Assessing the effectiveness and efficiency of this system in achieving the stated objectives is part of the development or improvement of the existing resources, infrastructure, and design. This improves the information provided and thereby helps improve service provision and delivery. That is the three 95's: (95% of those eligible groups should be tested and aware of their HIV status; 95% of those aware of their HIV status should be linked to ART care and treatment; and 95% of those linked to ART care and treatment should be virally suppressed). The change in the quality of information needs to be assessed, particularly for diseases that exert high public health stress. HIV/AIDS is one of the most virulent infectious diseases. It is a persistent threat to health in developed or developing nations, including Ethiopia, where it represents a major constraint to economic development measures and reduces the likelihood of living a healthy life.(7). (3.4).

The surveillance system evaluation of this selected disease has a public health importance in South Omo Zone, SNNPRS. Also it is aimed to assess the HIV/AIDS SDG GOAL :control the HIV Pandemic through implementation of the three 95's in 2030 .The surveillance data analysis of HIV/AIDS in South Omo Zone indicates 3866 people are living with HIV,3050 known their status, . Therefore this study was conducted to evaluate public health surveillance systems of routine HMIS of HIV/AIDS in SNNP Regional State, South Omo zone which are 304 and 588 km to South from the regional city (Hawassa) and Addis Ababa respectively.

Rationale of the study

HIV is a pandemic disease and is the mainstay of the public's interest in the field of health care. The surveillance system must be reviewed with regard to the 2030 enactment of the three 95s and AIDS and HIV surveillance. Regular assessments of public health surveillance systems are necessary, or the evaluations ought to include recommendations for enhancing their usefulness, effectiveness, and quality. The effectiveness of a public health tracking system's operations in achieving its objectives is the primary subject of assessment. This assessment was carried out to describe the state of the HIV/AIDS virus monitoring system in South Omo and to show how well the system is performing with regard to the intended objective of ending the HIV Virus Pandemic. (95:95:95 in 2030) The HIV/AIDS SDG Goal



Objectives

General objective

To describe the routine HMIS and Case Based Surveillance(CBS) for HIV/AIDS and to evaluate key system attributes of the Case Based Surveillance System at South Omo Zone (SNNPRS) for Global and national HIV/AIDS strategy and implementation of 95:95:95 targeted initiatives, which covers the period of 2020–2030, October 2021

Specific objectives

To assess the core activities of routine HIMS (HIV case detection, treatment cascade, reporting, data analysis, and responding) of the routine case-based surveillance system of HIV/AIDS in the South Omo Zone

To evaluate the key attributes of a case-based Surveillance system in terms of specificity, simplicity, flexibility, acceptability, timeliness, and completeness

To determine whether the system is meeting its objectives (for the global and national HIV/AIDS strategy and implementation of 95:95:95 targeted initiatives),

Methods, Materials and Study area

The case-based surveillance system evaluation was conducted at the SNNP Regional State, South Omo Zone, Health Department, Jinka General Hospital, Gazer Primary Hospital, Jinka Mellinium, woreda/district health offices, and Keyafer health centres, which were among the health facilities providing HIV/AIDS services under the zone health department and included in the study.

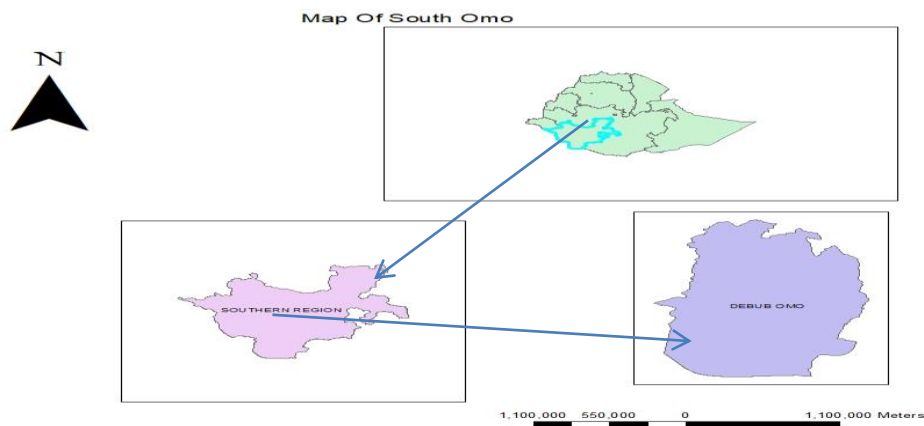


Figure 16 Map of study area Routine HMIS and CBS for HIV/AIDS in South Omo zone, SNNRP, Ethiopia,2021

Study design and period

A descriptive Cross-sectional study design was used to evaluate the system. The surveillance activity was carried out between October 25 and November 5, 2021.

Study unit:

The study subjects were the health facilities (Health Centres, Keyafer and Banatsemay worda health Offices, Hospitals, and zone health department providing HIV/AIDS services and reporting sites in South Omo area.

Sample Size:

A total of 2 Health centers (Jinka Mellinium & Keyafer health centres), 1 primary hospital (Gazer), Jinka General Hospital and Zonal Health department) were selected. Selection technique of Hospitals and health facilities was done as in the steps below:

Sampling Technique:

Hospitals were purposively selected based on burden of referral of HIV/AIDS cases reported to Health Department. The rest health centres were selected based on their accessibility in transportation related to local security and identified woreda's health offices of the selected health centres have been included in the study.

Methods of Data Collection: The Case-Based Surveillance System Evaluation Tool for HIV, an updated CDC guideline to evaluate public health surveillance systems, was used. The evaluation aimed to assess the system's performance on the basis of standards like flexibility, acceptability, representativeness, stability, and data integrity. Interviews have been held with departmental representatives, the designated PHEM officer, and the focal point for HCs and hospitals. Assessments of acceptability, flexibility, and usefulness have been conducted.

Document review

The purpose of the document review was to understand and assess the data reporting process, and to compare data across different sources to identify any problems with data quality, Timeliness, completeness, and aggregation.

Data analysis

Data was cleaned and then, entered and analysed using the Microsoft Excel work sheet 2010 and qualitative data was summarized to supplement the quantitative findings

Operational definition

Acceptability: Acceptability reflects the willingness of persons and organizations to participate in the surveillance system (28).

Active surveillance system: is a system that is 'based on the public health officials' initiative to contact the physicians, laboratory or hospital staff or other relevant sources to report data (29).

Completeness: proportion of all expected data reports that were actually submitted to the public health surveillance system (29).

Comprehensive surveillance systems: include reports of cases of infectious diseases that occur within the whole population of the geographical area covered by the surveillance system (29).

Data Quality: the completeness and validity of the data recorded in the public health surveillance system (29)

Flexibility: A flexible public health surveillance system can adapt to changing information needs or operating conditions with little additional time, personnel, or allocated fun

Passive surveillance: relies on the physicians, laboratory or hospital staff or other relevant sources to take the initiative to report data to the health department (29).

Population under surveillance: defined as targeted groups (risk groups) which is determined according to objectives of the surveillance system and should take into account feasibility (29).

Representativeness: describes the occurrence of a health-related event over time and its distribution in the population by place and person (28).

Sensitivity: The sensitivity of the surveillance system is the number of cases reported by the surveillance system or 'true cases' (a), divided by the number of cases (a+c) in the community (31).

Simplicity: The simplicity of a public health surveillance system refers to both its structure and ease of operation, while still meeting their objectives (28).

Stability: refers to the reliability and availability of the public health surveillance system (29). **Timeliness:** reflects the speed between steps in a public health surveillance system (28).

Usefulness: implies that surveillance results are used for public health action. (28ds (28)

Result

Graphs, frequency tables, pie charts, per cent and narration have been used to present the data of the following indicators.

Performance of existing surveillance system

Population under surveillance

The total population of South Omo Zone is about 820,472, and there are 11 woredas- one city administration & ten rural woredas (from estimated total population in zone Health department). There are a total of 1 general hospital, 2 primary hospitals, 43 health centres, 254 health posts providing health services. Among those, 1 primary hospital, 1 general hospital and 9 health centres are providing HIV/AIDS services. There are 80 private clinics and neither of them is providing ART services. The South Omo Health Department receives reports from all sites, aggregates and reports to regional health bureau.

Table 9 Health facilities, ART Sites and Population under surveillance in the South Omo zone, October 2021, Jinka

S/N	Lists of Woreda under surveillance	General hospital	Primary hospital	Health centers	Health posts	NGOs	Private clinics	Number of HFs providing ART	Total population under the surveillance
1	Jinka Town	01	0	01	06	0	21	02	33,412
2	South Ari	0	01	06	31	0	14	01	164,507
3	Malle	0	01	05	28	0	05	01	119,894
4	Benatsemay	0	0	06	31	0	12	01	75,355
5	Hammar	0	0	05	38	0	05	01	84,937
6	Dasanech	0	0	05	22	0	03	01	75,036
7	Ngangatom	0	0	01	20	0	02	01	24,926
8	Salamago	0	0	07	20	0	08	02	39,655
9	North Ari	0	0	04	35	0	06	01	95,840
10	Wuba Ari	0	0	01	11	0	02	01	59,161
11	Bakadawal	0	0	02	12	0	02	0	47,749
	Total	01	02	43	254	0	80	12	820,472

Only Four ART sites were on implementation of CBS,(Jinka General Hospital, Gazer Primary Hospital, Jinka Millennium HC and Turmi HC).

In last 1st Quarter of 2021, a total of 38 index test was done by Gazer General Hospital and 11(28.94%) of them were declared positive.

Table 10 HFs distribution respective to service provision, last 1 year (2020) in South Omo Zone, Jinka Oct- 2021

Woreda	#H Fs	#HFs priority	in KPN/PNS	#HFs KPN/PNS	#MSG&APP Site	ART/PMCT Facility	CBS site
Jinka	2	2	2	2	1	2	2
Dehub	6	0	0	0	1	1	1
Ari							
Malle	6	0	0	0	0	1	0
Benetsem	6		0	0	0	1	0
ay							
Hamer	4	0	0	0	1	1	1
Dasanech	5	0	0	0	0	1	0
Nyangato	1	0	0	0	0	1	0
m							
Salamag	5	0	0	0	0	2	0
North Ari	4	0	0	0	0	1	0
Wubi Ari	1	0	0	0	0	1	0
Bakadaw	2	0	0	0	0	0	0
al							

A case finding performance indicated that 4633(age less than 15) and 50235 (15+) from a total of 54868 individual were tested in last year(2021), of which 471(0.9%), 16&455 from age less than 15 and 15+ respectively, have been declared positive yielding 0.34% &0.91% respective to the age category

Table 11 Case finding performance in adults and paediatrics(<15,15+) in last one year(2020),South Omo zone, Health Department, Jinka, Oct-2021

Age	Tested	positives	Yields
<15	4633	16	0.34
15+	50235	455	0.91
Total	54868	471	0.9

Among those known their status (3050), 2977(97.6%) were currently on ART at all ART service providing HFs. Jinka General Hospital is providing ART services for a total of 1358(46%) clients followed by Gazer primary hospital and Jinka Millenium HC 526(18%) and 394(13%) respectively. Wubhammer HC is the last with a least number of ART clients of 15(0.5%).

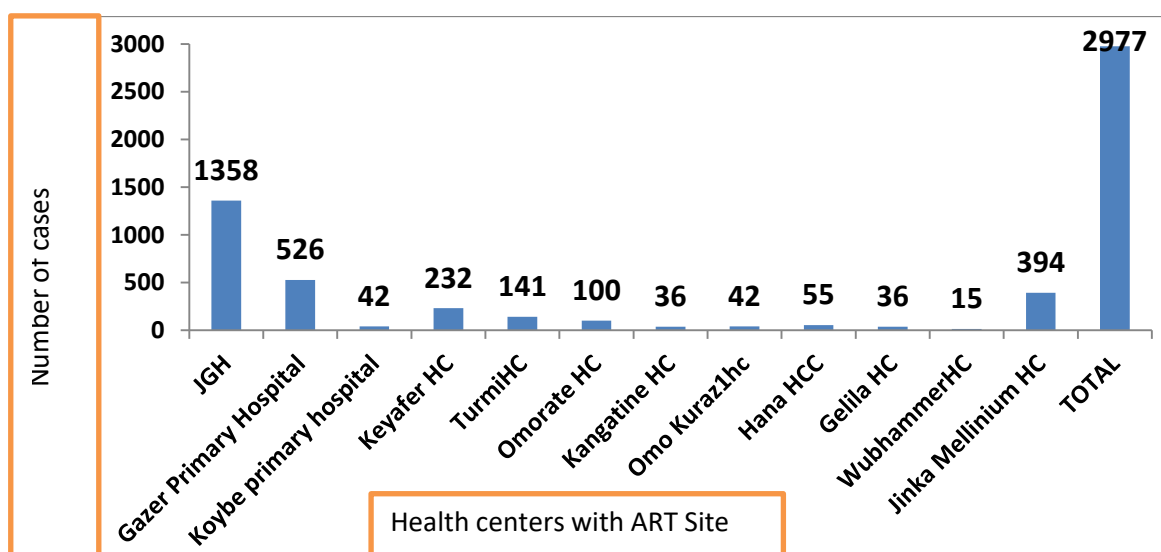


Figure 17 Total current on ART from all ART reporting Site, South Omo Zone, Health Department, Oct-2021, Jinka

Table 12 Newly identified HIV Cases by sex and age respective to reporting sites, South Omo Zone Health Department ,2020/2021

Reporting ART sites	<15		15-19		20-24		25-49		50+		Total	
	m	F	M	f	m	F	M	f	m	f	M	F
Jinka GH	1	3	0	12	6	24	51	44	4	1	62	84
Koybe PH	0	0	0	0	1	0	1	2	0	0	2	2
Gazer PH	4	3	1	1	9	10	26	28	1	2	41	44
JMHC	0	1	3	5	7	10	26	22	3	4	39	42
Keyafer HC	0	0	0	0	0	4	11	9	2	0	13	13
OmorateHC	0	1	0	0	7	7	7	5	0	0	14	13
TurmiHC	0	0	0	0	0	3	17	12	1	1	18	16
KangatineHC	0	2	0	0	1	0	6	8	0	0	7	10
Omo/Khc	0	0	0	0	0	1	4	0	0	0	4	1
HanaHC	0	0	0	0	1	1	3	4	0	0	4	5
GelilaHC	0	0	0	1	0	0	0	1	0	0	0	2
WubhammerHC	1	0	0	0	1	0	1	6	0	0	3	6
Total	6	10	4	19	33	60	153	141	11	8	207	238

The total number of HIV/AIDS linked to ART in last three years by sex category indicated that 523(42%) & 708(58%) was males and female respectively.

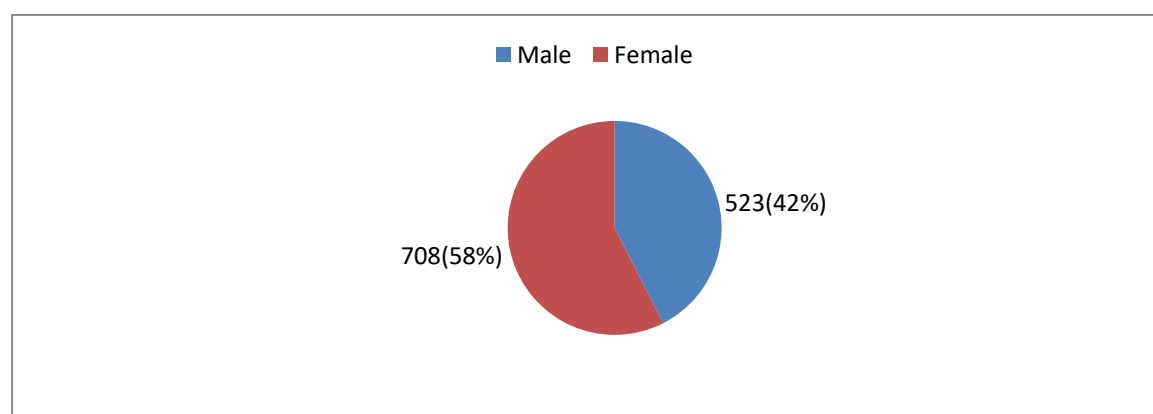


Figure 18 Number of HIV/AIDS cases linked to ART in last Three years by sex, South Omo Zone, Health Department, 2019-2021(3 years) Jinka

Enrolment ART by HFs providing ART Service

Millenium HC is providing ART services for a total of 403 clients 187&216 male and female respectively. In age <15, there are a total 7, of which 3 of them were male and 4 of them were females. Females age 15+ accounts for 53.55 %(212) and males 46.45 %(184) too.

Table 13 Number of Adults and children newly enrolled by age and sex, (fine disaggregate) at Jinka Millenium HC, South Omo Zone, Jinka, From June2016-Sep-2121

Sex	Age<15	Age 15+	Total
Male	3	184	187
Female	4	212	216
Sub-total	7	396	403

The enrolment of clients on ART at Jinka General Hospital was 759 [335(44.13%) male and 524(55.87%) female], of which, 28 and 731 were age less than 15 and greater than 15 respectively.

Table 14 Number of Adults and children newly enrolled by age and sex, (fine disaggregate)at Jinka General Hospital, South Omo Zone, Jinka, From June2016-Sep-2121

Sex	age<15	age15+	Total
Male	11	324	335
Female	17	407	524
sub-total	28	731	759

The enrolment of clients on ART at Gazer Primary Hospital was 530 [530(41.9%) male and 317(58.1%) female], of which, 18 and 512 were age less than 15 and greater than 15

Table 15 Number of Adults and children newly enrolled by age and sex, (fine disaggregate) at Gazer Primary Hospital South Omo Zone, Jinka, From June 2016-Sep-2121

Sex	age<15	age15+	Total
Male	10	212	222
Female	8	309	317
sub-total	18	512	530

The five years treatment cascade in Jinka Zone Health Department indicated that 3866 were PLHIV. 3050 (79%) has known their status. Among those, 2977 (97.6%) had been on ART, that was good achievement in progression of one of the three 95. But, only 66.5% were virally suppressed. In general, the progression of treatment cascade from 2017-2021 was in good achievement in each year as figured out below.

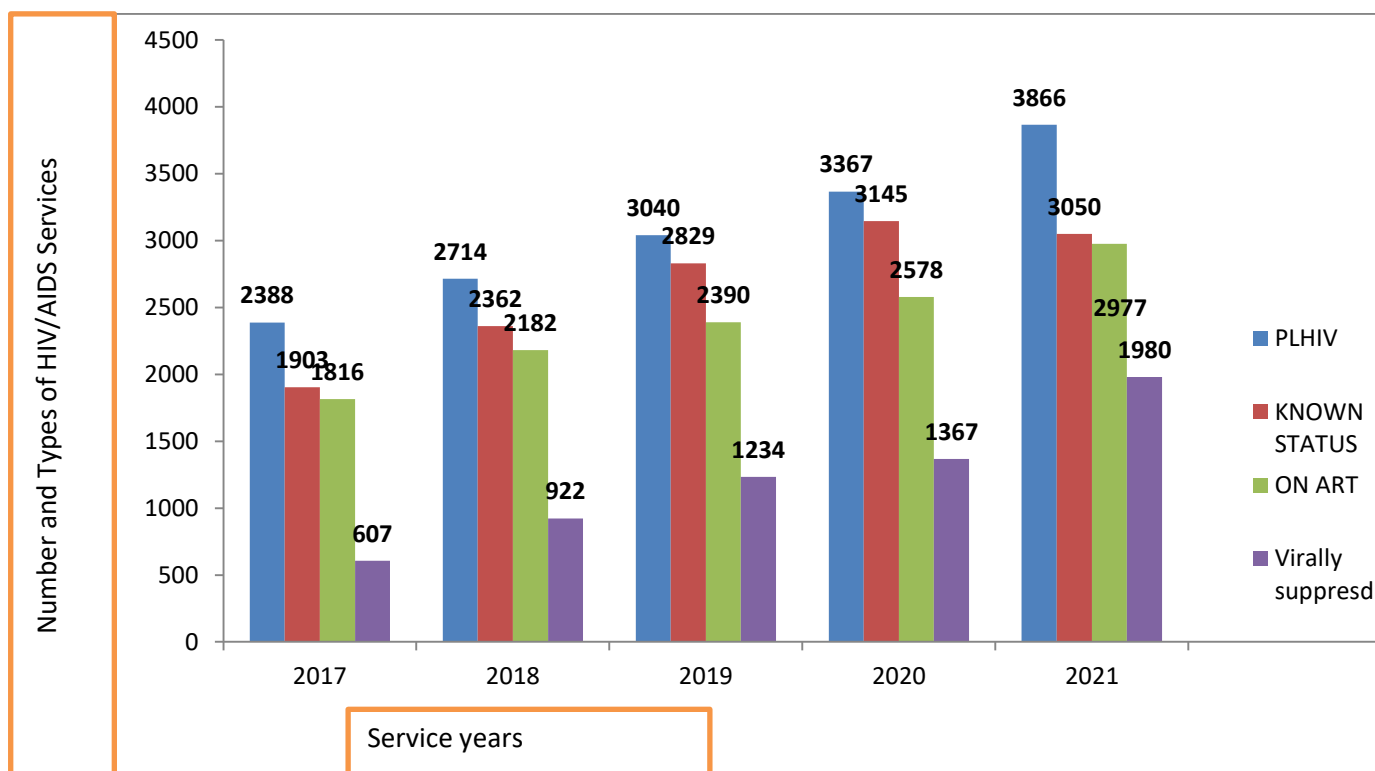


Figure 19 Treatment cascade, PLHIV, known status, on ART & Virally suppressed, South Omo Zone Health Department, 2017-2021, Jinka

There were twelve reporting sites for ART and all sites have met the expected timeliness & completeness perfectly in last twelve months

Table 16 Timeliness and completeness of ART sites, South Omo Zone, Health Department, from December 2020-Oct2021, Jinka Oct-2021.

HFS	Completeness	Timeliness
Jinka GH	12/12*100%=100%	T
Gazer Primary Hospital	12/12*100=100%	T
Koybe Primary hospital	12/12*100=100%	T
Jinka Mellinium HC	12/12*100=100%	T
Keyafer HC	12/12*100=100%	T
Turmi HC	12/12*100=100%	T
OmorateHC	12/12*100=100%	T
Kangatine HC	12/12*100=100%	T
Omo kuraz 1HC	12/12*100=100%	T
Hana HC	12/12*100=100%	T
Gelila HC	12/12*100=100%	T
Wubhammer HC	12/12*100=100%	T

Data analysis

The overall five years treatment cascade in Jinka Zone Health Department indicated that 3866 were PLHIV, 3050 (79%) aware of their status. Among those, 2977(97.6%) had been on ART, that was good achievement in progression of one of the three 95. But, only 66.5% were virally suppressed.

In all selected hospitals, health centres Woredas and Zone Health Department, there was a responsible person for data analysis (Assigned by CDC) to register, collect, organize analyse, and periodically report HIV/AIDS related data to the next level. The Woreda health office analysis all notifiable disease and HIV/AIDS data separately and reports to the next level.

The zone health department analyses and follows trend for HIV/AIDS based on reporting sites. All sampled health facilities have ART Dash Board for ART initiation (ART started, alive on ART, TO, Lost, Drop and Died), Viral Load suppression follow up, All enrolled cases by sex categories . Neither of the visited health facilities (Health centres Hospitals, and Zone Health Department) post charts on wall the collected and analysed data for surveillance data analysis at their capacity

Resources available for surveillance

Resources for data management, communication, and logistics were available at all visited health centres, hospitals and zone health department. The computers at health centres, hospitals, and zone health department were properly functioning. All HIV/AIDS surveillance units at all levels have telephone and internet services. Budget constraints were issues raised by all health units. That was thought to be the reasons for poor supervision and monitoring of the health facility reports.

Feedback and supervision

There was supportive supervision from the regional and zone health department to all health facilities twice in a year. The region and zone have given oral feed-back to woreda and there were written documents for periodical Monitoring &Evaluation of ART at all visited sites but had no written feedback.

Training

All health facilities (HCs, Hospitals and zone health department) responded that all staffs working on HIV/AIDS surveillance units got short term training or workshops of 3-5 days of Case Based Surveillance (CBS) in different rounds by the Regional Health Bureau, CDC and ICAP. At sampled ART sites, all the focal persons assigned for HIV/AIDS surveillance were trained and assigned by CDC,

Laboratory

Laboratory capacity in HIV testing, CD-4 and Viral Load were assessed at all ART sites. All the health centres and Hospitals laboratories were able to test HIV by RDT (Stat Pack, Abbon and SD) . HIV positivity was confirmed at all levels of health facilities (Hospitals and

health centres) according to the National HIV Testing Algorithm. Some HFs which was not providing routine HIV/AIDS care has been supplied with STAT PACK only (first line RDT test for HIV). They first test the person being suspected for HIV only by Stat Pack, if she /he is tested positive, they link/refer him/her to the ART site for confirmatory test (the second and third testing Algorithm); which was again structurally informal based on the National HIV testing Algorithm.

CD-4 machine was avail at all ART site but not functioning because of calibration, chargers, and shortages of capillary tubes. Even Jinka General Hospital (in Jinka City) was in doubt and transports the sample to Hawassa for CD-4& VL.

Performance and attributes of the surveillance system

HIV/AIDS surveillance is not integrated with all other priority diseases which include laboratory support and passive surveillance which becomes active during outbreaks. HIV/AIDS surveillance has been assessed with case based Surveillance(CBS) for its system attributes including usefulness, simplicity, flexibility, data quality, acceptability, sensitivity, timeliness, stability and representativeness. Currently CBS is on implementation for further testing the index cases to attain the positivity test, linkage to ART service and viral suppression (for success of 95/95/95/ in 2030). Early detection of index case of HIV/AIDS under surveillance and assessment of the effect of prevention and control programs were common understanding of all the respondents as the major use of the surveillance system. In general, the users of the surveillance system agreed that they understood its usefulness in this regard.

Simplicity

All respondents 46/46(100%) agreed that testing eligible group for HIV is easy to understand and applicable by all levels of health professionals. Cases were detected using eligibility criteria and confirmed with RDT (National HIV Testing Algorithm) at health centres and Hospital level. Most of report forms were pre-printed, easy to complete and link to the ART sites. Monthly reports were communicated by online reporting from HCs to next level. The route of the data flow is clear and simple as it was set in the HIV/AIDS surveillance system and the reporting bodies do not criticize any problem in this regard. And the data collection is

assumed to be time taking particularly the monthly, quarterly and semi-annually reporting. Data from health centres and hospitals providing ART service were sent to the zone health department HIV version on line by electronically set software (I-Care) a soft copy form and use of the data was also very limited at all levels.

Flexibility

The reporting form has been standardized at national level and attainable day to day as Dash Board to follow ART initiations, viral load follow up, missing days and to know trends of ART without much difficulty, and the formats are assumed to be easy and comprehensive. E.g. Current on ART, TO, TI, Dead, Lost-to-follow-up included in to the surveillance system. The standard reporting formats for linkage & confirmed HIV positive cases, CD-4, Viral Load, TO and TI are pre-printed and spaces were provided to add additional comments, which make the system flexible.

Data quality

The data quality was also assessed on the basis of completeness of the reporting format and timeliness of the report. There was no missed variable in reporting formats as most of formats were pre-printed and standardized at national level. There was a DASH BOARD (software) used to update day to day situations and been reported online to the next level.

Acceptability

The acceptability of the Case Based Surveillance (CBS) surveillance system for HIV/AIDS was assessed based on the engagement of the reporting agents and active participation in the case detection and reporting(46/46) individual respondents. In all ART sites in South Omo(12/12), the engagement of the reporting agents was good and the reporting rates were 100% as seen over 12 reporting months (Tables8)

Sensitivity

The sensitivity of the CBS surveillance system of HIV/AIDS in the detection of the cases and index case testing were seen separately. CBS has been on implementation at four sites and been planned to be expanded at the rest ART sites.

The surveillance system to detect cases of HIV

Since the surveillance system is based in the health facilities, the capacity of the Case Based surveillance system (CBS) to capture HIV positivity cases in the community is dependent on different reasons: one factor could be the health seeking behaviour of the community. Another factor could also be the technical and logistic capacity of the health facilities (Index case testing and CBS) in detection and laboratory confirmation of new HIV cases. These factors undermine the burden of HIV cases in the community and hence the sensitivity of the CBS to pick the HIV positivity case to be low. The expansion of CBS in index case testing is on-going to be implemented at all the rest health facilities, adjacently, resource supply for detection has been limited to some levels and could be another factors for low detection.

Timeliness & completeness

The reporting rates of the health facilities in the Zone were found to be very good at all health facility level. The number of facilities(from all ART sites) which reported timely and completed was exactly 100%, for the reason the reporting formats and time tables were set uniformly at National level as online, the Dash Board with software was smooth and easy to be applied by trained surveillance unit up to the next level(as indicated under table8).

Stability

The surveillance system was stable based on availability of standard reporting format at all ART sites(4/4 on those site implementing Case Based Surveillance), HCs, woreda health offices Hospitals and Zone Health Department) level including the uniformity of software for data processes. And HIV/AIDS surveillance system can easily be applicable alone. Case based surveillance was on implementation at some HFs and been on plan to be expanded at the rest ART sites.

Representativeness

The representativeness of this Case Based surveillance system (CBS) related to the health service coverage is only 20%(4/12), i.e. among twelve (12)Health facilities providing HIV service only four HFs are providing Case Based Surveillances. The reporting rate of the health facilities, especially the uniformity of all ART site for online data generation, analysis,

reporting, index case testing, linkage, ART initialisation, viral load suppression, treatment follow-up and the others technical capacity of the health care providers are applicable in the same ways at all sites. Though, the representativeness of the system is somewhat good, the health seeking behaviour of the community is ideally different, and may vary in HFs. (service settings and facility distribution in accessibility of CBS to all ART sites), on implementation and only limited to four sites.

Usefulness of surveillance

All of the participants in inquiry 46/46(100%) agreed up on that the surveillance system is helpful to detect HIV, to know the magnitude of morbidity and mortality related to this disease, including identification of factors associated with it. Even though there was no identified epidemic of HIV, all woreda, city Admiration and Zone health department believe that outbreaks should be investigated based on Index case testing. All sites, woredas and Zone Health Department have prepared written epidemics preparedness and response plan (EPRP). The challenge of all assessed area was none of epidemic management committee evaluated their preparedness and response activities. In general the system was useful and utilizes the existing health system to provide evidence based information for action.

Case recording and reporting

HIV/AIDS case was reported on monthly, quarterly and semi-annually basis by E-mail, telephone and hard copy, using standard reporting format from health facility to woreda and zone reported from Monday to Sunday by all 12 HFs(100%). Woreda compiled and reported to zone health department and finally the zone health department reported to Hawassa (regional health Bureau HIV data Management Core Process). The reporting forms and register books were available in all ART sites, woreda and Health facilities.

Data analysis and interpretation

There was no analysis of HIV/AIDS surveillance data completeness, timeliness and trends observed in woreda's ART Sites (Data clerk) of the all HIV/AIDS providing Health facilities. The Dash Board was functioning on line for daily analysis at all sites and there was cohort prepared and posted on wall by Data clerks at all level

Epidemic preparedness and response

All the visited sites 6/6(100%) did not experience HIV outbreak in the previous years. All facilities had epidemic preparedness and response plan for all outbreaks; however, none of them thought that HIV epidemic could occur other than notifiable diseases. All HFs, especially health centres have no any stock and budget line for emergency. In all sites, the epidemic management committee and the rapid response teams are activated only when there is an event/outbreak. Moreover, they did not evaluate their experience and preparedness. None of the ART sites and reporting HFs put in consideration about the HIV outbreak, however; all sites had a regular MDT(Multi-Disciplinary Team) meeting monthly and been documented evidently.

Discussion

The HIV/AIDS Case Based surveillance system (CBS) in Omo Zone was evaluated using CDC guidelines for the evaluation of public health surveillance systems for its attributes and system of operations. This Case Based surveillance system captures data related to HIV/AIDS detection, linkage follow up, treatment cascade, and viral load suppression, reporting and service quality. The understanding of the service providers to the HIV was found to be good but, at all levels there was no wisely analysed and interpreted data rather than the on line Dash Board cascade. As well, the clinical registers and reporting formats were distributed with good orientation to the HIV data clerk. In most of the health facilities HIV data was not analysed and was not posted to the public appropriately. The structure of data reporting flow from the lower to the upper level was well organized with unidirectional flow of data, with simple and defined role and responsibility of each reporting entities. This high reporting rate joined with early of the collected data can make the surveillance system more useful to meet its objectives. For example, as stated above, if all of the health facilities in the zone analyse and use the data, the utility of the surveillance system is very high. This makes the system too strong to pick highly public health sensitive diseases. This could be due to the clear orientation of all parties, nationally standardized ways of reporting mechanism for data collection and entering, periodic supervision and feedback system, continuous legal enforcement to the surveillance activities, incentives, refresher training, sense of ownership, and logistics supply. The epidemic preparedness and response activities the zone was well

organized and had planning, but there was no financial and/or logistic support. Besides the epidemic response committees and rapid response team had regular MDT meetings and they review their plans, actions. Regional health bureau, woreda health office and zone health department were allowed for emergency budget from the zone and region only after an event has occurred. Laboratory experience of quality assurance program and participation in the surveillance system was found to be not enough. Non functionality of CD-4 machine and viral load detection may retard the overall performance of the surveillance system in that regards.

Limitations

The up dated HIV/AIDS data wasn't properly analysed, not interpreted wisely and posted on public at all level rather than on review meeting. Case Based Surveillance was not accessed to all ART providing HFs

Conclusion

Periodic assessment of public health surveillance system related to HIV/AIDS data and Case Based Surveillance is a key activity to identify strengths and weakness of the existing system. This will be more effective if it is done in collaboration with key stakeholders. In South Omo Zone the Case Based surveillance system was satisfactory. However, the establishment of CBS will require integration with other HIV/AIDS cases to function at an even higher level and efforts should be exerted to improve the CBS system mainly on supervisory activities, proper and timely feedback, data management and analysis of HIV/AIDS like prioritized diseases. Finally, the surveillance system of HIV/AIDS (CBS) is useful to conduct and to monitor index case testing, linkage to ART, initiation, treatment cascade, viral load suppression, to estimate magnitude of the morbidity and mortality of cases in the zone. These surveillance systems are simple and flexible and well accepted by all assessed sites.

Recommendations

It is recommended that the SNNRPs Regional Health Bureau, South Omo Zone Health Department and woreda health offices and other sectors office:-

To Strengthen data processing capacity at all levels by providing necessary facilities where needed.

Early maintenance and calibration of CD-4 machine, implementation of CBS and index case testing at all levels are issues to be highly recommended at all levels for success of 95/95/95/ in 2030

Providing regular Supportive supervision to strengthened lower levels

Provision of Written feedback secure earmarked planning

Facilitate transportation for field activities like index case testing response.

Data analysis for HIV/AIDS should be done just like for prioritized diseases at ART sites, and health facility level should perform regularly.

Utilization of National HIV/AIDS guideline and different manuals for management of HIV/AIDS related cases should be optimized at all levels; mainly at health facilities.

References

1. German RR, Lee LM, Horan JM, Milstein RL, Pertowski CA, Waller MN, et al. Updated guidelines for evaluating public health surveillance systems: recommendations from the Guidelines Working Group. *MMWR Recomm reports Morb Mortal Wkly report Recomm reports* [Internet]. 2001;50(RR-13):1–35; quiz CE1-7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18634202>
2. Draft F. Federal Democratic Republic of Ethiopia Ministry of Health Health Sector Development Program IV October 2010 Contents. 2014;(October 2010).
3. Project S. HIV and AIDS surveillance. *Commun Dis Intell Q Rep*. 2012;36(4):E368.
4. Surveillance E. Case-based Surveillance of HIV.
5. 5FMOH. National Strategic Plan for Malaria Prevention Control and Elimination in Ethiopia 2011-2015. 2010;2015(August 2010):76. Available from: http://www.nationalplanningcycles.org/sites/default/files/country_docs/Ethiopia/ethiopia_malaria_national_strategic_plan_2011-2015_130810.pdf
6. E.A. A, J.H.K. B, J.A. F, W.K. A, Awini EA, Bonney JHK, et al. Integrated Disease Surveillance and Response in the African Region. *PLoS One* [Internet]. 2015;15(1):3. Available from: <https://apps.who.int/iris/handle/10665/112667>http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_EPR_LYO_2006_2.pdf<http://dx.doi.org/10.1371/journal.pone.0230322><https://www.usaid.gov/sites/default/files/documents/15396/FightingEbola>
7. Astuti SI, Arso SP, Wigati PA. Anal Standar Pelayanan Minimal Pada Instal Rawat Jalan di RSUD Kota Semarang. 2015;3:103–11.

Chapter Five: Drought derived nutritional response evaluation in East Bale Zone, Oromia Regional State, Southeast Ethiopia, April 2022

Introduction

Background

Drought is slow-onset phenomena, which generally develop over an extended period of time and lack highly visible and structural impacts. It can be geographically extensive, affecting large areas regardless of geopolitical/country boundaries, and can exhibit complex spatial patterns. The societal impacts of drought can be slow to develop as they accumulate over time as the event continues, and the impacts can last for years. Every year, prolonged drought disasters affect several million persons. Between 1960 and 2013, 612 drought events resulted in 2.19 million deaths and 2.14 billion affected persons. Since 1990, 373 events recorded resulted in 4272 deaths and 1.17 billion affected persons(1).

Based on how they measured drought categorized in to fours. The first was meteorological drought, which is defined based on the degree of dryness and the duration of the dry period due to less precipitation than normal. Second, hydrological drought, which is based on the impacts of precipitation shortages on surface or sub-surface (groundwater) water supplies. Third, agricultural drought, which links characteristics of meteorological or hydrological drought to agricultural impacts, where the amount of moisture in the soil no longer meets the needs of a particular crop and the fourth category was socioeconomic drought, which occurs when the demand for a particular economic good exceeds supply as a result of weather-related shortfall in water supply and when water shortages begin to affect people(2).

The health impact of drought is particularly dependent on the socio-economic environment that can influence the resilience of the population. Poor health, poverty, and conflict are additional contributing factors to the impact of drought. The multiple health impacts of drought include different health outcomes such as water-borne diseases, vector-borne disease, nutrition problems, mental health conditions and respiratory diseases. An impact on nutrition with implications for morbidity and mortality is the most obvious and best recognized health impact of drought(3).

Historically in Ethiopia droughts in the 1970s were longer and more intense, and occurred most of the time in both short and long rainfall seasons. The 1974 drought resulted in the death of approximately 250,000 people(4).

Recently widespread below-average and early interruption of rainfall before October 2021 extended moderate to extreme drought conditions, marking the third consecutive poor season in southern part of Ethiopia particularly in Borena, Dawa, Liben, Afder zones and East bale zones of Ethiopia. The resident of these mostly affected zones were pastoralist which worsen the situation related to high livestock loose, price decline, livestock production is also low, limiting income and food crucial for these areas.

Along with increasingly restrictive sources of nourishment and cash, as well as unfavourable trading terms, essential resources like water, grazing land, and livestock are continuing to degrade. This results in less food being available to households and a rise in regional malnutrition. Early in February 2022, a quick humanitarian needs assessment was done in the east Bale zone, and action was taken right away to prevent the loss of life and livelihoods.

In Ethiopia, where over 85% of the population relies on rain-fed subsistence agriculture and livestock husbandry, natural occurrences like droughts and floods typically cause food insecurity, leading to an increase in the number of children with acute malnutrition. The most important public health issue and possibly one of the main causes of death, whether directly or indirectly, is malnutrition.

Following the third consecutive failed rainy season, the drought in southern and eastern Ethiopia (Somali, East, and South Oromia regions) is already severely affecting the lives and way of life of pastoralist and agro-pastoralist populations there.

Low animal production is contributing to the worsening nutritional situation in areas affected by the drought. Most areas affected by drought are experiencing an increase in admissions for severe acute malnutrition (SAM).The Government of Ethiopia and humanitarian partners are providing multi-sectorial response to drought-affected communities in Oromia and Somali regions with the limited resource available, but the response is not commensurate with the dire need.

All major emergencies threaten human life and public health resulting in food shortages and impairing the nutritional status of community. Among these high rates of malnutrition and micronutrient deficiencies is associated with increased rates of morbidity and mortality.

Rational of emergence response

The disaster response phase is the action taken to save lives and prevent further damage in a disaster. This phase begins immediately after a disaster has struck. During the response phase, plans developed in the preparedness phase based on rapid need assessment are put into action. Drought is a long-lasting type of disaster that requires a response to mitigate it. The primary focus of the drought response phase is to avert the burden of acute malnutrition, prevent and control disease outbreaks, and provide minimum-standard nutrition and WASH supplies to the affected population to reduce further morbidity and mortality. Conducting public health surveillance and addressing people who are vulnerable to the effects of the drought are among the responses. Furthermore, in our context, delayed, interrupted, and non-integral responses have been observed due to the absence of appropriate coordination and preparedness, an early warning system, and a shortage of supplies like nutrition supplies, antibiotics, and emergency drugs. Therefore, this evaluation was designed to assess the progress of the response along with the required coordination in the East Bale Health System.

Objectives

General Objective

To evaluate emergency nutrition coordination, surveillance and response progress in East Bale zone Oromia region from April 10-May 5 /2022

Specific Objectives

- To Assess Emergency Nutrition Response Coordination
- .To assesses nutrition screening performance.
- To assess emergency nutrition response status in the health facilities
- To identify Potential health and nutrition Risks
- To assess WASH service

Methods and Materials

Study Area

The response evaluation was conducted in East Bale zone , which is ,one of drought affected zone of Oromia regional state. It is located at distance of 501Km from Addis Ababa. This zone has 7 administrative woredas, 1 zonal town (Ghinnir town) and 174 kebeles. Its political demarcation shows boarded on east by Somali region, on south by bale zone, on north and west by Arsi zone and on north east by Shebelle River. East bale zone climatic features show arid (79.2%) and semi-arid (28%) agro-ecology.

Study Design

Facility based Concurrent embedded mixed descriptive cross-sectional study design was conducted among districts health facilities of the zone.

Data collection tool and Procedure

Secondary Data:

District monthly Health Information System (DHIS2) and weekly nutrition indicators performance like SAM cases admitted, recovered, defaulted and monthly and campaign nutrition screening performance were collected.

Primary data collection:

Semi-structured questionnaire /Checklist that incorporate coordination, surveillance and response, Water and Sanitation Hygiene (WASH) and logistic and resources was used to assess the gap at each level of health care system and Public Health Emergency Management (PHEM) officer of the zone, nutrition focal persons, Maternal Child Health (MCH) coordinator, woreda Health office Head interviewed to collect both quantitative and qualitative data.

Data analysis, presentation, and dissemination of the report

The collected data was entered to and analyzed by micro soft excel 2016 and presented by narrations and tables. The final response evaluation will be disseminated to regional PHEM, MOH, EPHI and other stakeholders.

Result

Background information and health facility Mapping

The total population of East Bale Zone is 717,929; of these, 352,205 are females, 365,723 are males, 127,472 are children under five years, 171,685 are women in reproductive age, and there are 149,569 households. From the 8 woredas, 7 of them are drought-affected woredas, with five total affected and two partially affected. The total population affected by the drought in the east bale zone is 432,215; of these, 90,045 are households; 220,430 are males; 211,785 are females; 71,013 are under-five-year-old children; and 14,998 are pregnant and lactating mothers. These five woredas are drought-affected. Though there was no previous conflict, there were 23 IDP sites in seven districts that were hotspots for drought-related impacts. Recently, there were two functional hospitals, 34 health centres, and 171 health posts. All health posts were engaged in OTP service, while SC was implemented in all health centres. Only Sawena district had two mobile health and nutrition teams (MHNT); recently, other districts' teams were not in place. SAM Case Management Service Availability and Accessibility

In all most, all health posts and health centers of the districts SAM case management as per OTP and SC was being implemented by health extension workers and nutrition focal person of the health centers. In most districts partners were supporting SAM case management through availing SAM supplies. Save the children and UNICEF were partners mainly engaged in SAM case management and WASH in all five totally affected districts. IRC, NLME, LWF and Rift Valley were other partners supporting the response through availing non-food items. However, districts like Ginir rural, Ginir town and Gololcha had no partners to support the response currently.

Emergency nutrition Response and Recovery

Screening

Unlike the previous monthly nutrition screening strategy, nutrition screening is currently under way on a daily basis and is integral with other activities like EPI, Pregnant women's conferences, community health days, and others. Zonal less than five nutritional screening coverage trends revealed that 92% show slight improvement compared to the last two preceding months, January and February (Figure 20). On the other hand, pregnant and lactating screening coverage in March was 83%. The number of children under five admitted to the Outpatient Therapeutic Feeding Program (OTP) in March was 1028, showing a 46.8% (328 cases) increment when compared to February. This difference might be attributed to the Find and Treat campaign conducted in six districts during March. However, SC admissions in March show a slight decline when compared to February. Figure 21 depicts zonal OTP and SC admission numbers as of March 2022.

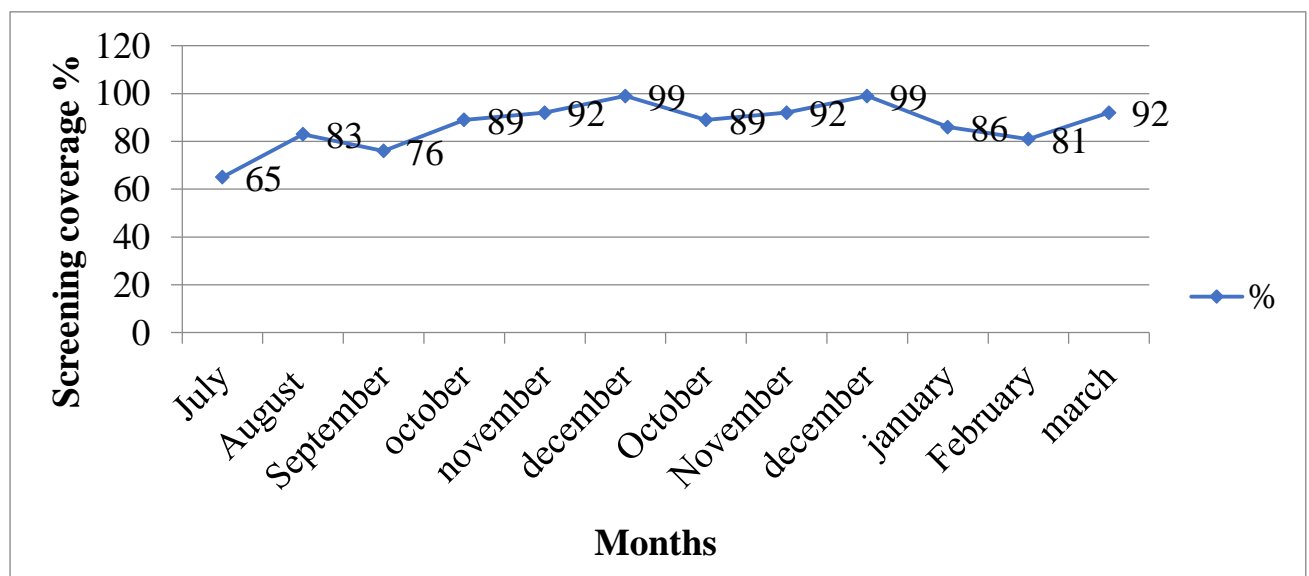


Figure 20 Trends of nutritional screening among under five, East Bale, Oromia, April 2022.

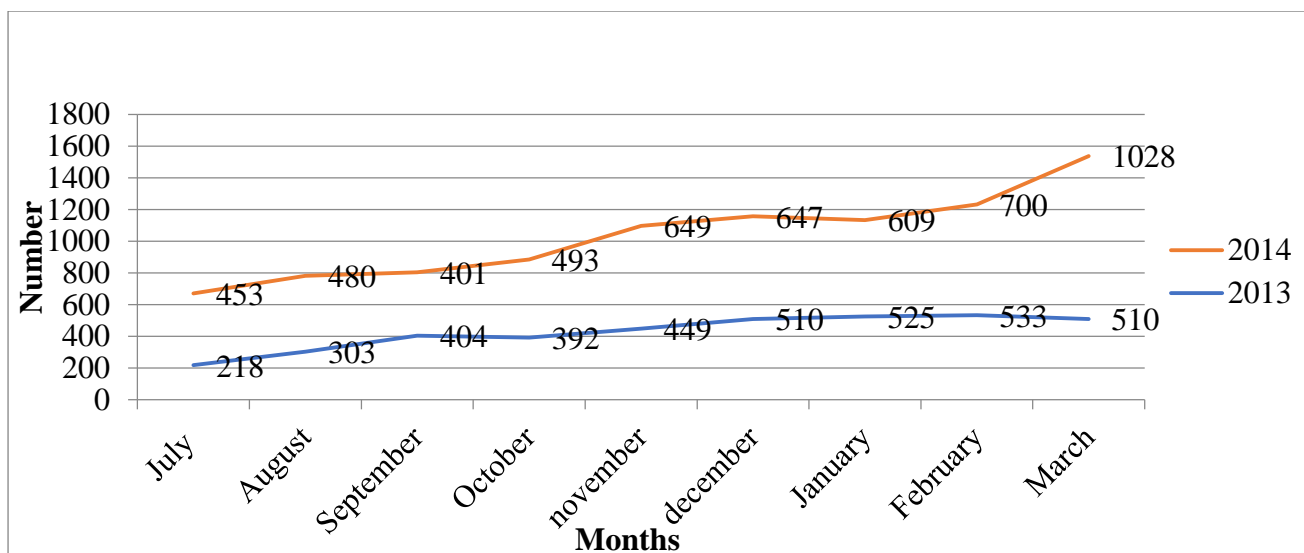


Figure 21 OTP Admission among under five years, East Bale Zone, Oromia, April 2022.

The Find and Treat

initiative was first launched in the four districts of Dawe Serer, Dawe Katchen, Rayitu, and Sawena. Laga Hida and Ginir Rural Districts later followed. The results of the Find and Treat campaign that was run in March are displayed in the table below.

During the campaign, Dawe Serer and Sawena districts had the highest SAM rates among children under the age of five, at 3.63 and 2.57 percent, respectively. Laga Hidha and Dawe Serer Districts had the highest MAM rates, at 30.1% and 26.9%, respectively

Table 17 Eligibility, Screening and coverage of SAM & MAM cases, East Bale, Oromia, April 2022.

District	Total population	Eligible	Screened	SAM cases	MAM cases	Coverage
Dawe Serer	62,596	10285	9307	338(3.63%)	1966(2.1%)	90.5
Rayitu	49,085	8065	8469	175(2%)	1879(22.18)	105.0
Sawena	96,342	15829	15,829	407(2.57%)	4271(26.9%)	100.0
Dawe Katchen	44,879	7374	6048	40(0.66%)	1053(17.4%)	82.0
Ginir Rural	182,600	30001	22,340	176(0.79%)	836(3.7%)	74.5
Laga Hida	93,318	15332	14,622	151(1.03%)	4408(30.1%)	95.4
Total	528,820	86,885	76,615	1287(1.7%)	14413(18.9%)	88.2

Table 18 Conducted Nutritional Screening among PLW during the Month Of March, East Bale, Oromia, April 2022.

District	Total population	PLW eligible	Screened	MAM cases	Rate of MAM	of Screening Coverage
Dawe Serer	62,596	3258	3141	1907	60.71	96.4
Rayitu	49,085	2555	2877	1419	49.32	112.6
Sawena	96,342	5015	6205	3518	56.70	123.7
Dawe Katchen	44,879	2336	1294	882	68.16	55.4
Ginir Rural	182,600	9504	4616	760	16.46	48.6
Laga Hida	93,318	4857	7111	4567	64.22	146.4
Total	528,820	27,525	25,244	13,053	51.71	91.7

Community management of acute malnutrition (CMAM) performance indicators

Malnutrition management performance indicators such as recovery rate, defaulter rate, mean length of stay and mean weight gain were the most vital indicators to evaluate the quality of CMAM. Along with poor data quality the recovery rate of SAM cases among under five years were at required standard. In all most all visited districts the maximum and minimum length of stay in program for SAM cases were not clearly understood by the programmer. Additionally, correction definition of defaulter was too. Therefore, this hinders the actual recovery rate. Figure 3 depicted the recovery rate of SAM for totally affected district.

Table 19 Recovery Rate by totally Affected Districts, as of the end of March 2022, East Bale , Oromia, April2022

District	Number of cases	Cured	Defaulted	Died	Non-respondent	Recovery rate
Dawe Serer	1134	921	32	0	18	95%
Rayitu	636	421	3	3	0	99%
Sawena	1592	1380	4	0	0	100%
Dawe Kachen	580	332	1	0	0	100%
Laga Hida	886	700	2	0	0	100%
Total	4,828	3754	42	3	18	98%

Mean weight gained and mean length of stay which was vital for quality evaluation not ever calculated at every district of the zone.

WASH and hygiene Profile of the districts

Before March, as a response, water trucks had been the main source of water for the community. Additionally, Gravity springs, motorized springs, deep well motorized springs, and protected springs in rare areas were other sources of water for the community. Recently, Ponds and rainwater harvesting were the main sources of water. The Coverage of Drinking Water Access in the East Bale zone is 45.5% Rural (46.9% town).Currently, there is an interruption in water distribution by water truck for the community related to the rainy

season. The hand washing, cloth washing, and bathing practices of the community are poor because of a shortage of water. Though the main source of water in recent times has been ponds, communal water treatment activity has been poor. This was a great rumor for a diarrheal disease outbreak in the east Bale zone. Water treatment at the household level is somewhat in action currently in 50% (4/8) of districts.

Table 20 WASH profile at Drought Affected Districts, East Bale, Oromia, April 2022.

<i>District</i>	<i>Number Of Water Track Available</i>	<i>Number Of Pipe Water</i>	<i>Number of Spring</i>	<i>Number of Hand Dug Well</i>	<i>Of All Type Latrine Coverage (%)</i>
Ginnir Rural	0	16	6	7	85
Rayitu	6	9	1	0	29
D/Sarar	3	0	1	0	63
D/Katchen	4	5	0	0	26
L/Hidha	1	9	3	60	55
Sawena	6	13	2	5	64
Gololcha	0	18	4	6	88
East Bale	20	70	17	78	

Logistics and supplies

However, there were regular supplies for emergency nutrition management, but some supplies like RUTF (Ginir district), F-100/75, and antibiotics were in shortage and stocked out at different times..

Public health surveillance

Currently there was no any potentially risk confirmed diseases outbreak which was aggravated by drought or emergency nutritional problems. However, as the prediction of district surveillance officers indicated, in addition to the possible aggravation of SAM cases, diarrheal diseases and malaria related to the current rainy season and WASH problems were the potential rumour for an outbreak. Furthermore, scabies-related WASH problems,

evidenced by the current upward trend, and measles were other rumors for surveillance in the zone.

Public health preparedness and response

Two of six (33.33%) who visited the district health surveillance office (Dawe Katchen and Laga Hida) had no written emergency preparedness and response plan for this fiscal year. None of them had updated plans within six months. In almost all districts, this plan is not supported by the required budget. During emergency situations, most districts use budgets that are allocated for disaster preparedness and response offices. As a health department, there was no emergency budget for a specific fiscal year.

Coordination

- In all districts, there was a structured emergency response committee like the RRT and other technical committees. Telegram and telephone were the most commonly used communication channels. However, there was no frequent and sustained communication in all districts.
- Major challenges and points of action
- Though the find and treat campaign yielded a MAM rate of 19% and 51% for under five years and PLW, respectively, there was a shortage of supplies and even an absence in some districts, which could aggravate the rate of SAM in future months if those diagnosed with MAM are not managed accordingly.
- Unlike other disasters, droughts require a long-term response, which could be enhanced by multi-sectoral coordination and collaboration. However, in most cases, there was no strong coordination.
- Nutrition indicators like recovery rate, defaulter rate, mean length of stay in program, and mean weight gain are vital indicators to evaluate the quality of CMAM. However, calculating and using these indicators to enhance the program was unfamiliar in all districts.
- Absence of MAM case follow-up either under five or PLW in all districts.
- Weak nutrition data quality management and surveillance
- Absence and/or shortage of food for caretakers at SC site.
- Shortages and stock outs of nutrition supplies and antibiotics.

F-100/75, RUTF, and SC opening kits, Ampicillin, gentamycin, and others

The actual number of community water sources is not clearly known by district WASH focal personnel.

There is an absence of communal water treatment in almost all districts, and supplies of household water treatment are not addressed to all households.

The concept of a minimum standard for nutrition and WASH is not clear to nutrition and WASH focal personnel.

Latrine coverage was extremely low in most districts except Ginir and Gololcha districts.

Updated emergency preparedness and response plan.

Recommendation

- Support sustainable MAM supplies (all stakeholders)
- MAM case outcome follow-up (District health office, health facility)
- Support and strengthen the nutrition surveillance and monitoring system (EPHI, MoH).
- Strengthen data quality management at all districts (zone PHEM).
- Strengthen nutrition surveillance in hard-to-reach areas (Zone, Region).
- Strengthen coordination and collaboration between sectors and partners at the national level (zone, region, MoH).
- Strengthen the CMAM program monitoring and follow-up (MoH).
- Using nutrition indicators for decision-making and CMAM quality improvement (district nutrition focal person)

Central management of resource mobilisation with a detailed response activity plan is necessary to minimize duplication of effort (ZHD, Region).

UN agencies and partner involvement in improving emergency nutrition supplies and services (TSFP, OTP, antibiotics, and SC services) should be scaled up.

Establish a comprehensive nutritional intervention system at all health facilities (zones and districts).

Integrated management of acute malnutrition, which could incorporate MAM cases, should be scaled up in all districts to manage MAM early before progressing to SAM.

Sustainable communal and household-level water treatment should be enhanced.

Low latrine coverage in most districts should be enhanced (WASH).

Having an updated emergency preparedness and response plan (district PHEM officer)

Reference

1. Managing the health effects of Brazil's drought, Sena A, Barcellos C, Freitas C, and Corvalan C. 2014;11(10):10737-51 in International Journal of Environmental Research and Public Health.
2. Drought's Health Effects: A Systematic Review of the Evidence Murray, Victor, who is Stanke, Kerac, Prudhomme, & Medlock. Disasters/index.html%3Fp=6221.html is accessible via <https://currents.plos.org>. [Internet] PLoS Curr. 2013;
3. Ebi KL & Bowen K. 3. Drought as a major event catalyst for health vulnerability. Weather Clim Severe [Internet]; 2016;11:95-102. You may obtain it at: 10.1016/j.wace.2015.10.001
4. Mera GA The implications of the drought in Ethiopia. 2018 Dec;22:24–35. Extreme Weather and Climat [Internet]. taken from: S2212094717301779 at linkinghub.elsevier.com

Chapter Six: Disaster Risk management and response at Guyah IDPS in Awusi Rasu zone, Afar regional State, 2021.

Executive summary

Introduction: Awsi Rasu, administratively called Zone 1, is one of five zones in the Afar region of Ethiopia. Currently, the zone has 10 woredas with a total of 98 health posts, 26 health centres, and two referral hospitals (Dubti and Semera), found in Zone 1. The Zone is highly occupied with conflict-induced displacement from the bordering six woredas of Zone 2 (Dalol, Kuneba, Berihalle, Magalle, Erebt, Abala rural, and Abala town) than ever existed in the Zone due to sudden attacks from Tigrian Terrorists since October 2021 and has continued to do so. The aim of the assessment is to identify health and health-related risks and respond accordingly among the internally displaced population (IDPs) settled in Zone 1, Afar region.

Methodology:-The community's health and health-related needs were evaluated using a community-based descriptive cross-sectional study approach. Key informants from each IDP's communal centre, concerned government officials, site inspections, and observations were used to gather the data.

Microsoft Excel 2016 was used to examine the data, and narratives, tables, graphs, and maps were created as summaries..

Result; A total of 49,064 households (HHs), or 294,490 individuals, were displaced by Tigrian Terrorists and settled in the Kori woreda of Zone One (Guyah IDPs) areas of the Afar region. One temporary clinic and, additionally, one Mobile Health and Nutrition Team (MHNT) were deployed to provide health services for IDPs. A total of 954 IDPs were treated. Among the treated cases from IDPs, AFI (226 (23.7%)) was the leading cause of morbidity, followed by non-bloody diarrhoea (158 (16.6%) cases), dysentery (66 (7%) cases), and malaria (3(0.31%).The rest (37 (3.9) and 98 (10.3%) cases were skilled delivery and ANC, respectively.

A total of 560 (58.7) adults and 394 (41.3) children aged from six months to five years were attendees of OPD. A total of 895 children were screened as MAM (398) and SAM (176), with a GAM rate of 64.3%. 1453 IDP pregnant and lactating mothers were screened as MAM

(308) and SAM (46) with a GAM rate of 24.4%. There were a total of 50 latrines to the ratio of one sit of latrine for 981 households, and the ratio of water supply per day per person was less than one litter.

Conclusion: The major causes of morbidity among the displaced population were Acute Febrile Illness (AFI) (226 (23.7%)), followed by Non- bloody diarrhoea (16.6%), which might be related to poor hygiene and a lack of sanitation among the IDPs. The coverage of latrines and safe water supply for displaced populations was also below what is expected in IDP settings or standards relative to the total population. Construction of latrines and Provision of a safe water supply are indispensable for the hygiene and sanitation of the displaced population.

Introduction

One of the five administrative zones in Afar region is Awsi Rasu, also known as zone 1. With a total projected inhabitants of 498,873—of whom 54.7% are men and 45.3% are women—it is managed by 10 woredas and one administrative city (Semera-Logia), spanning an area of 30,242.10 square kilometres. Its population density is 13.58, having 20.18% of inhabitants residing in towns and 43.47% in rural areas. (1).

The Afar (88.52%) and Amhara (9.97) were the two largest ethnic groups listed in Awsi Rasu; the rest of the ethnic groups comprised 1.15% of the population. The zone is 500 kilometres from Addis Ababa, the Ethiopian capital city, and is located in the northern part of the province. Semera is the administrative city of the region. The Amhara Region borders the Zone on the west, Hari Rasu on the southwest, and Gabi Rasu on the south. on the northwest by Fanti Rasu, on the north by Kelbeti Rasu, on the northwest by Eritrea, and on the east by Djibouti. The area is a lowland with predominately agro-pastoralist livelihood zones and inhabitants that sits within the Afar region of Ethiopia. The majority of the population, 96.55%, is Muslim, and 3.29% are Orthodox followers.(2) There are 98 health posts, 26 health centres, and two referral hospitals found in all woredas of Awsi Rasu Zone. The Zone is highly occupied by Internally Displaced populations from bordering zone 2, which are related to Tigray People Liberation Front Terrorists (TPLF).(3).

In the last eight months, a number of small-scale conflicts and displacement situations have occurred in the region. During the assessment period, Awsi Rasu Zone was highly occupied by conflict-induced displacement from Zone 2. According to information from the Afar regional Health Bureau and disaster and risk management report, the conflict was underway three months ago and was happening in an on-off pattern. Areas of Zone 2 bordering Tigray Region, especially Barhale, Megalle, Abala, Erabti, Kuneba, and partial parts of Dalol Wereda, were affected by the TPLF terrorist attack-induced displacements..(4)(5)

A total of 7,698 HH (44,648) individuals of internally displaced people were settled in the Awsi Rasu zone. Among these, 3,420 (7.7%) and 1943 (4.35%) were children under five and PLW, respectively. (6) The displaced people are left without food and other basic needs. Currently, many of the displaced population have been settled in Kori Woreda and Guyah as IDPs, but they have no means of livelihood because they lost all their assets and resources to the terrorists. This assessment is to identify health and health-related risks and respond

accordingly among the internally displaced population found in Awsi Rasu Zone, Afar region.

Objectives

General objective

To identify health and health related risks and respond accordingly among internally displaced population in Awsi Rasu Zone, Afar region, February – March 2022.

Specific objectives

- To identify the health and health related risks of displaced population
- To predict the possible disease outbreak and prepare for it based on the situational analysis.
- To ensure provision of appropriate health care and related response for displaced community

Methods, Study area, and period

The IDPs risk assessment and response activities were performed in the Awsi Rasu zone in the Afar region and conducted from February to March 2022.

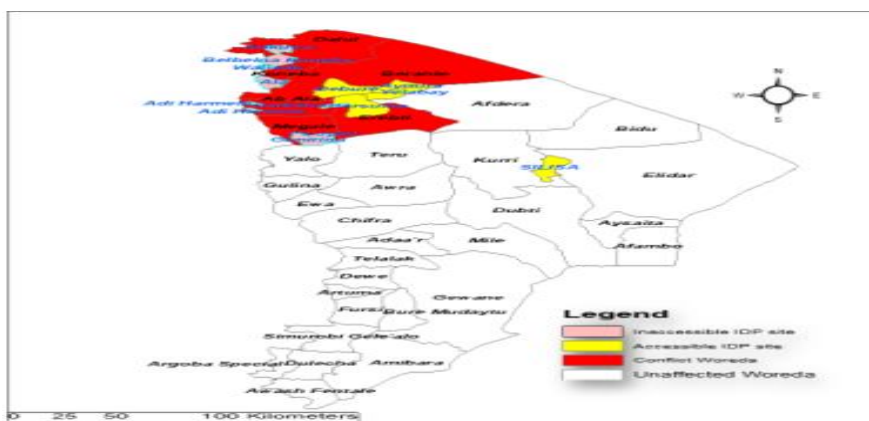


Figure 22 Map of Awsi Rasu zone, Afar region, Ethiopia, March, 2022

Study design

A community-based descriptive cross-sectional study design was used or followed to assess the health and health-related risks of the displaced community..

Data collection procedure

The data were collected from key informants from each IDP's collective centre and concerned government officials, including the Zone Health Department, through a structured questionnaire. Site visitation or observation was also one of the data collection methods used to determine the environmental condition of the IDP Site and to ensure the existence of health care delivery in the IDPs.

Data analysis, presentation and dissemination of report

The collected data from IDPs was entered into and analysed using Microsoft Excel 2010 and presented in narrations, tables, graphs, and maps. This final assessment and response report was disseminated or submitted to AAU, CHS, SPH, EFETP, EPHI/PHEM, FMoH, Afar RHB PHEM, and Zone One Health Department through email.

Result

A total of 7,698 households (HHs) and 44,648 individuals were displaced by TPLF terrorists and settled in Kori woreda of Awsi Rasu Zone of the Afar region. Of those internally displaced people (IDPs), 24,110 (54%) were female. The displaced populations were found in three sites as well as in the host communities of Semera and Logiya town.

Table 21 Distribution of IDPs by House Hold and settled population in Awsi Rasu Zone of Afar Region, March 2022

Districts	IDPs site	#HH	#population
Kori	1	2,500	11,200
Berhale	1	1,295	10,462
Abala	1	2,029	12,,457
Kuneba	1	1,805	10,529
Total	7	7,629	44,648

Health Facilities in the Awsi Rasu Zone

There are 2 Hospitals, 26 Health centres, and 295 health posts, of which 2 are located at Kori (the Guyah IDPs Site), and both Hospitals are providing referral services to the settled IDPs.

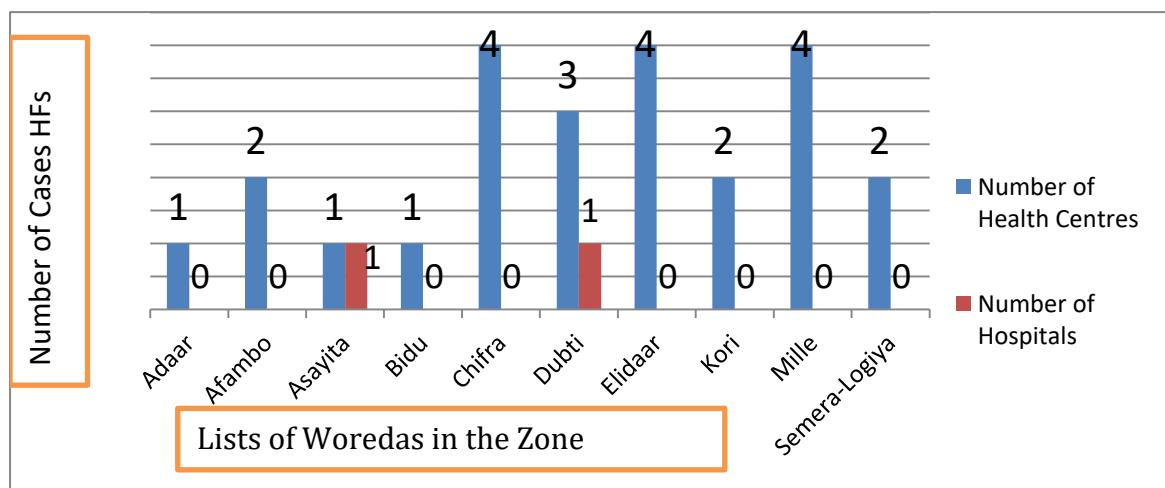


Figure 23 Existing Hospitals and Health Facilities in Zone 1, Afar Region, March 2022.

Case management

A total of 954 cases of IDPs were treated. Among the treated cases from IDPs, AFI (226 (23.7%)) was the leading cause of morbidity followed by non-bloody diarrhoea (158 (16.6f%) cases), dysentery (66 (7%) cases) and malaria (3(0.31%).The rest (37(3.9), (98(10.3%)) cases were skilled delivery and ANC respectively. A total of 560(58.7) adults and 394(41.3) children were attendees of OPD.

Table 22.cases of OPD visit in Guyah IDPs, Awsi Rasu zone, Afar Region, February- March, 2022

OPD case	number of cases and percentage
AFI	226(23.7)
Non bloody diarrhoea	158 (16.6%)
Dysentery	66 (7%)
Malaria	3 (0.31%)
Skilled Delivery	37 (3.9%)
ANC	98 (10.3%)
	954 (100%)

Surveillance

Routine surveillance systems like weekly reports of reportable diseases and events and immediate notification of immediately notifiable diseases and events were in place.

A total of 66 Dysentery and 3 malaria cases (clinical) were reported from Guyah IDP.

The overall coordination and communication of internally displaced population information and response activity follow-up was illustrated in the diagram below. Data were collected from each IDP site by the assigned IDP surveillance focal person, together with the Rapid Response Team (RRT), to collect the situation of IDPs on a daily basis. The PHEM focal Person collects the daily reports from each pillar (Water, Sanitation, Sanitation and Hygiene (WaSH), Mobile Health and Nutrition Team (MHNT), and Mental Health and Psycho-social Support (MHPSS)) and then reports them to the woreda. The woreda then collects and analyses the data and shares the report with the zonal Health department, regional PHEM, and National PHEM.

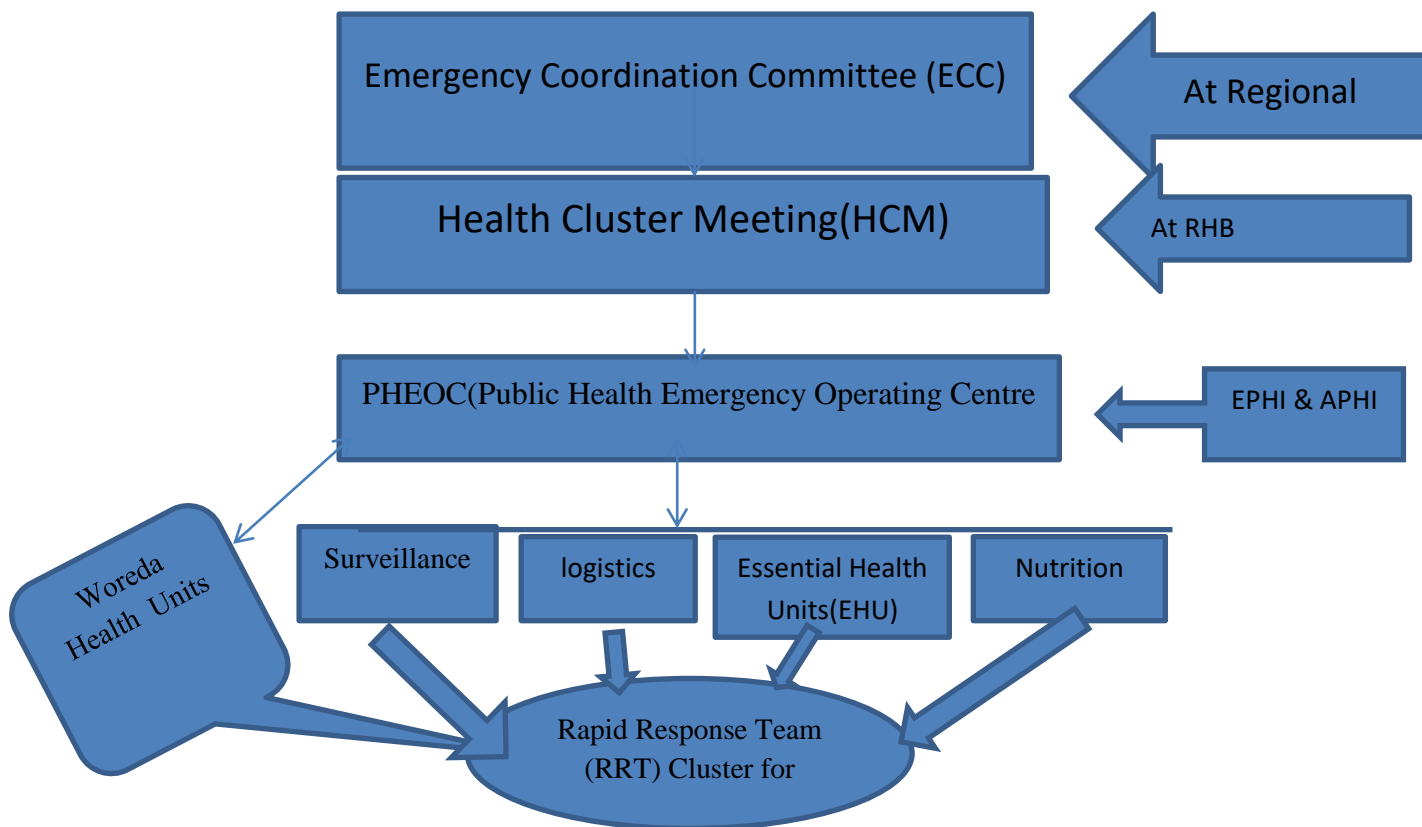


Figure 24 Information management system (IMS) structure of RRT cluster, APHI & EPHI , Guyah IDP, Awsi Rasu Zone, Afar region, March 2022

Table 23 WaSH distribution at Guyah IDPs, Awsi Rasu Zone, Afar Region, March 2022, Semera

Name of IDPs Site	Existing latrine	#of constructed latrine	Existing Rotos/water tanker	# of water trucks	# of soap distributed	# of water chemicals distributed/HH
Erebti	5	1	3	1	280	450
Barhale	6	0	2	0	320	450
Abala	4	1	3	0	380	480
Kuneba	4	1	3	1	420	420
Total	19	3	11	2	1400	1800

Social mobilization and health education

Social mobilisation and health education were the basic parts of the IDPs response. FMOH, UNICEF, USAID, ZHD, MHSS, and other partners were the main actors in these response activities across all IDPs.

Discussion

There were a total of 26 health centres, including one temporary clinic and two hospitals, which served both the host community and IDPs. But only two Health centres were in place at IDPs. When computing the ratio of health facilities to the total population, it was 26 health centres for 498,873 people (1 health centre for 19,187 individuals) and one Primary hospital for 249,365 people. Again, there were 2 health centres in the IDP site, with a ratio of 1 HC to 22,324 National Health Service strategies, and WHO recommends that 1 health centre can serve 25,000 to 40,000 individuals and 1 primary hospital can serve 60,000 individuals in order to maintain the quality of health care. The distribution of Health facilities was fit to maintain the quality of health services as per set standards. Among all patients treated at the IDPs, AFI (226 (23.7%) cases) is the leading cause of morbidity, followed by non-bloody diarrhoea (158 (16.6%) cases) and malaria (3 (0.31%) cases). The rest (37 (3.9%) and 98 (10.3%) cases were skilled delivery and ANC, respectively. A total of 560 (58.7) adults and 394 (41.3) children aged from six months to five years were attendees of OPD. A total of 895 children were screened as MAM (398) and SAM (176), with a GAM rate of 64.3%. 1453 IDP pregnant and lactating mothers were screened as MAM (308) and SAM (46) with a GAM rate of 24.4%. There were a total of 50 latrines to the ratio of one sit of latrine for 981 households, and the ratio of water supply per day per person was less than one litter of water per day per person, which was less than the WHO and FMOH standards of one sit of latrine for 20 individuals and 20 to 30 litters of safe water supply per person per day, which may indicate deterioration of hygiene and sanitation practise in IDPs as well as either a shortage of WaSH supplies, including water supply, or poor knowledge and practise of hygiene and sanitation.

Challenges

- Shortage of drugs, including MHPSS drugs
- Ambulance shortage for referral service.
- Inaccessibility (war area, network, and road)
- Insufficient health professionals in government health facilities to serve IDPs

Conclusion

IDP settled in Awsi Rasu Zone, which is prone to disease outbreaks due to overcrowding in the IDP site, a lack of safe water supply, and a lack of vaccination for children. Hence, internally displaced people live below the minimum standard for the displaced population as well as the host community. The major causes of morbidity among the displaced population were AFI diseases, which were related to hygiene and sanitation. The coverage of latrine facilities and safe water supply for displacement populations were also below the standard. The overall coordination and communication of the internally displaced population situation and response activities on humanitarian support provided for IDPs by different stakeholder groups together with the government Daily communication with the rapid response team deployed at IDP sites to identify the health and health-related risks in the displaced population and share information with attack holders timely. Displacement of populations debilitates the health of displaced people. Solving conflict through discussion between the Federal Government and the Afar and Tigray regions is indispensable.

Recommendations

- The federal government should reach a consensus on the border issues between the Afar and Tigray regions to resolve conflict and displacement.
- The health facilities found in Awsi Rasu(zone 1) are not sufficient to provide quality health services; establishing additional health facilities and deploying a health work force is necessary, and also availing of essential medical services like laboratory services in the temporary established clinics will improve the quality of service.
- The Awsi Rasu zone, woreda, and health facilities found at the IDP site should provide Vaccination for under-five children and ANC follow-up for pregnant mothers.

- The coverage of latrine and safe water supply for the displaced population was below standard, and the major causes of morbidity among IDPs were related to hygiene and sanitation; therefore, Awsi Rasu zone and stakeholder groups (especially commenced NGOs on WASH) should improve and monitor regularly latrine and safe water supply coverage for their consistent availability and accessibility.
- Active surveillance should be maintained in a consistent way in all IDP collective centres to identify any disease outbreak or any other public health emergencies as early as possible.
- The Awsi Rasu zone, together with the region's returnees, should develop a Rehabilitation plan as early as possible and share it with the stakeholders.
- The regional water office should provide a safe and clean water supply for displaced people by water trucking.
- National and regional DRMCs should provide basic needs like temporary shelter, mattresses, blankets, and food.
- The Awsi Rasu health office should provide basic and emergency drugs and supplies to established IDP sites.

Reference

1. Statistical C. 2007 POPULATION and HOUSING CENSUS OF ETHIOPIA ADMINISTRATIVE REPORT Central Statistical Authority Addis Ababa. 2012;(April).
2. Livelihoods and vulnerability in Afar. IDS Research Report 57. <https://www.ids.ac.uk/files/Rr57.pdf>.
3. (DRMTWG) DRMTWG, This. Ethiopia: Humanitarian Response Situation Report No. 13 (as at 31 July 2017). 2017;13(13).
4. Draft F. Federal Democratic Republic of Ethiopia Ministry of Health Health Sector Development Program IV October 2010 Contents. 2014;(October 2010).
5. Ethiopian Public Health Institute (EPHI), ICF. Ethiopia Mini Demographic and Health Survey 2019: Final Report [Internet]. 2021. 1–207 p. Available from: <https://dhsprogram.com/pubs/pdf/FR363/FR363.pdf>
6. Displacement tracking matrix (dtm) afar, ethiopia round 12: july/august 2018. 2018;(August).

Chapter Seven: Health and health related information of Shebedino Woreda in Sidama Regional State and to identify problems for priority setting in 2021

Introduction

Background

Health Profiles Assessments are used to prioritize and plan health services. They are designed to help show the differences in health (or factors that affect health) between different places so that the right services can be put in place for each area. The Health Profiles have been produced to help local people make decisions about improving their health where they live or work.

A thorough community health profile is used primarily and initially to: gather community information and the interpretation of that information in one location so that local health information can be reviewed and used by many sectors of the community; and clearly present a community's health needs and issues so that they can be prioritised for action. Although routinely describing health profiles, particularly at the Woreda level, was not a common practise in Ethiopia, given their significance and intended use, daily describing and using various health and health-related survey results is a common practise at the national, regional, and zone levels. Such data, especially at the Woreda level, are frequently insufficient and unintelligible in low-income nations like Ethiopia.

For effective health planning, equitable resource distribution, and appropriate interventions by identifying and prioritising health and health-related problems and gaps in the community, it is crucial to document these summarised and analysed baseline health and health-related data appropriately at each level.

Assessment of community health is both a process and a result. It is a process of gathering, assessing, and interpreting data from numerous and varied sources in order to gain a comprehensive picture of a community's health. Additionally, a procedure is used to create plans to enhance the general health of the community using these findings.

A community health assessment often results in an extensive list of requirements, challenges, and problems associated with public health. Priorities can then be determined using this list. Establishing consensus on a fewer number of goals that a community is able to achieve is the

goal of prioritisation. Setting priorities is an important and occasionally challenging task that can result in observable improvements in the general health of a population. A prioritised list of issues affecting community health can establish the structure for a plan to promote community health and guide the allocation of scarce resources. A health profile and a health plan are fundamentally connected in this way. It serves as the foundation for strategizing, prioritising, and tackling the community's health and health-related issues.

In 1994, Ethiopia established a federal system of government made up of nine regional states (Afar, Amhara, Oromia, Somali, Benishangul Gumuz, Southern Nations Nationalities and Peoples Region, Gambela, Tigray, Harrari, and two city administrations (Addis Ababa and Dire Dawa). Administratively stated, there are zones and woreda in the Regional States.

A SNN vote in 2020 resulted in the establishment of Sidama Regional State as the tenth regional state. The purpose of this report is to look into and describe Shebedino Woreda's health profile in Sidama Regional State.

Significance of the study

The health profile evaluation helps the Shebedino woreda obtain health information for the district or region and make it available to everyone working in the medical field. The primary goal of health profile assessments in Shebedino woreda is to offer meaningful data to planners, policymakers, health executives, researchers, and others attempting to enhance the community's health and socioeconomic standing so they may make sound choices. Finding and completing relevant health information might be difficult, especially at the Woreda level. Examining a Woreda's current health profile is crucial in order to provide complete and up-to-date health information. This study was conducted to create health and health-related information in support of Shebedino.

Rationale of the Study

The Woreda (Shebedino) and other stakeholders use the data gathered from this health profile to determine the most important community issues and health programmes, fair resource allocation and consumption, suitable interventions, and program assessment. Service quality will be enhanced by systematically evaluating health facility efficiency in accordance with recognised standards and norms. This document was developed primarily for Woreda public

health planning and for use by other stakeholders in health and health-related issues working in the area. Its main purpose was to communicate vital statistics, the local burden of diseases, and information on health and health-related issues in a straightforward and practically accessible format.

Objectives

General objective

- ❖ To describe the health and health-related information of Shebedino Woreda in Sidama Regional State and to identify problems for priority setting in 2021.

Specific Objectives

- ❖ To assess basic health services and the health status of Shebedino woreda
- ❖ To describe existing community health problems in the woreda
- ❖ To describe the demographic characteristics of the population
- ❖ To set a plan for further implementation based on the existing gaps in the woreda.

Method and material

Study area and period

The study area for this health profile assessment was Shebedino Woreda, which is found in Sidama Regional State, 28 km from Hawassa, and &302 km from Addis Ababa to the south, from 14-30 May 14–30, 2021.

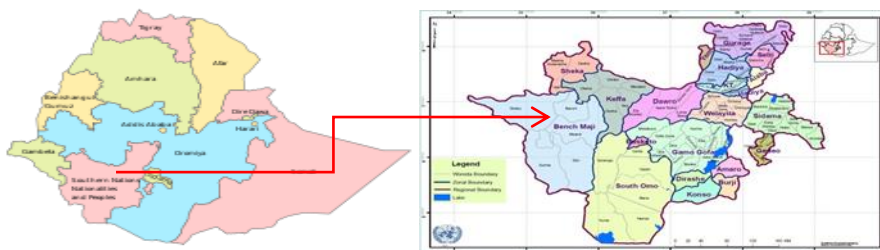


Figure 25: showing study area, Shebedino woreda, Sidama regional State Ethiopia 2021

Study population

The study population for this health profile assessment was the total number of populations obtained from the woreda data (211,383) in total.

Study Design

A descriptive cross-sectional study was conducted from May 14–30, 2021, in Shebedino Woreda. Health and health-related data were collected using a standard check list by interviewing facility heads under the woreda and reviewing recorded profiles and medical records.

Data Source

The sources for this health profile assessment were all offices providing service under Shebedino woreda

Data Collection Procedure

A standard check list set based on the health profile assessment was used for all sectors under the Woreda

Data analysis

Data were filled based on standard check lists and descriptive analysis was done using micro soft Excel 2010. Results were presented using graphs, pie charts, frequency tables and narration.

Ethical issues

An official letter was written for the Ethiopian Public Health Institute /EPHI / from Addis Ababa university school of Public Health. Permission was obtained from public health emergency management /PHEM/ department then to Sidama Regional state. Again official letter was issued to Shebedino Woreda to gather information based on health profile of the woreda. Confidentiality was assured and maintained.

Data dissemination

The findings of the health profile assessment and data analysis was shared with Shebedino woreda health office, Sidama Health bureau, AAU/SPH, mentors, supervisors, and program coordinators of AAU/SPH/EFETP

Result

Summary of the findings

Demographic description: Shebedino is one of the Woredas found in Sidama Regional State 28 km from Hawassa & 302 km from Addis Ababa to South. The woreda was established in 1881 E.C as “Laku”, which is currently the city of the Woreda. The woreda was named “Shebedino” from the name of a person “Shebe” who leaved in Laku village, he robes people while they go to market, “Dino” means “Yelem?” they asked someone either he was there or not by saying “Shebe Dino? “ meaning “Shebe Yelem?”

Boundaries: Shebedino is bordered with Abela, Dalle, Goche and Boricha Woredas in North, South, East and West respectively.

Geo coordination: Geographically coordinates at 6°49′-59.99″ latitude and 38° 29′-59.99″ longitude. Its annual rain fall is 800-1600 ml with 15.6 % and 84.4% high land and midland respectively. Its annual temperature ranges from 16-25 degree centigrade.

Economic situation / income/: is mainly coffee production and “Wayisse” in Sidama the so called “Inset” maize, bean, pea and sorghum are among agricultural products. Beside that seven kebeles namely, Taramessa, Sadeqa, Howolso, Fura, Remeda, Gonowo Godo and Harbe shisho are the popular kebeles with production of vegetables using irrigation on about 2010 hectors.

18290 hectors of the land was cultivated while 690 hectors was for grazing and its land density was 542. However an average income per HH/year was undefined, coffee production and ‘Inset’ is the main sources for trades and business.

Disaster & out breaks :In the year of 2020/2021, there were no reported cases of disasters and no any cases of out breaks reported in the same years.

Nutritional status: there is Targeted Supplementary Feeding (TSF) program which was built by UNICEF, and Community Based Nutrition (CBN) program, which was established by the regional government. However, the number of children involved in CBN was clearly not defined.

There are a total of 279 Outpatient Therapeutic feeding Program(OTP) & 03 Stabilization Center (SC), which served a total of 279 OTP and 12 SC /year.

Based the information from woreda health office, current food security in the woreda seek emphasis from the months of April to July as shortage of food supply is more common in these seasons

Table 24 lists of kebeles in Shebedino woreda, Sidama regional State, May 2021

	Kebeles	Male	Female	Total
1	Telamo	6274	6313	12582
2	Dobe Toga	6229	5974	12203
3	Aseraro Mero	6072	5967	12039
4	Diramo Afara	5575	5392	10967
5	Dila Afara	5412	5281	10693
6	Taramessa	4974	5085	10059
7	Gonowa Gedo	4957	4928	9885
8	Dilla Gumba	4855	4972	13327
9	Bonoya Maride	4924	4719	9639
10	Gobo Habesha	4710	4841	9551
11	Allabo Anno	4670	4621	9291
12	Qonsora Anno	4625	4445	10870
13	Morocho Shandallo	4622	4358	8980
14	Gonowa Godo	4573	4393	8966
15	Howolso	4354	4600	8954
16	Harbe Shisho	4412	4324	8736
17	Dilla Changie	4383	4298	8681

18	Harbe gonna Merro	4085	4056	8135
19	Fura	3841	3736	7577
20	Harbe Hagewo	3611	3725	7336
21	Sadeqa	3664	3667	7331
22	Morocho Nagash	3476	3525	7001
23	Midre-Guenet	2037	1820	3857
	Total			216665

The estimated total population in Shebedino Woreda was 211,383. Number of males and females are 106,340(50.3%) and 105,043(49.7%) respectively.

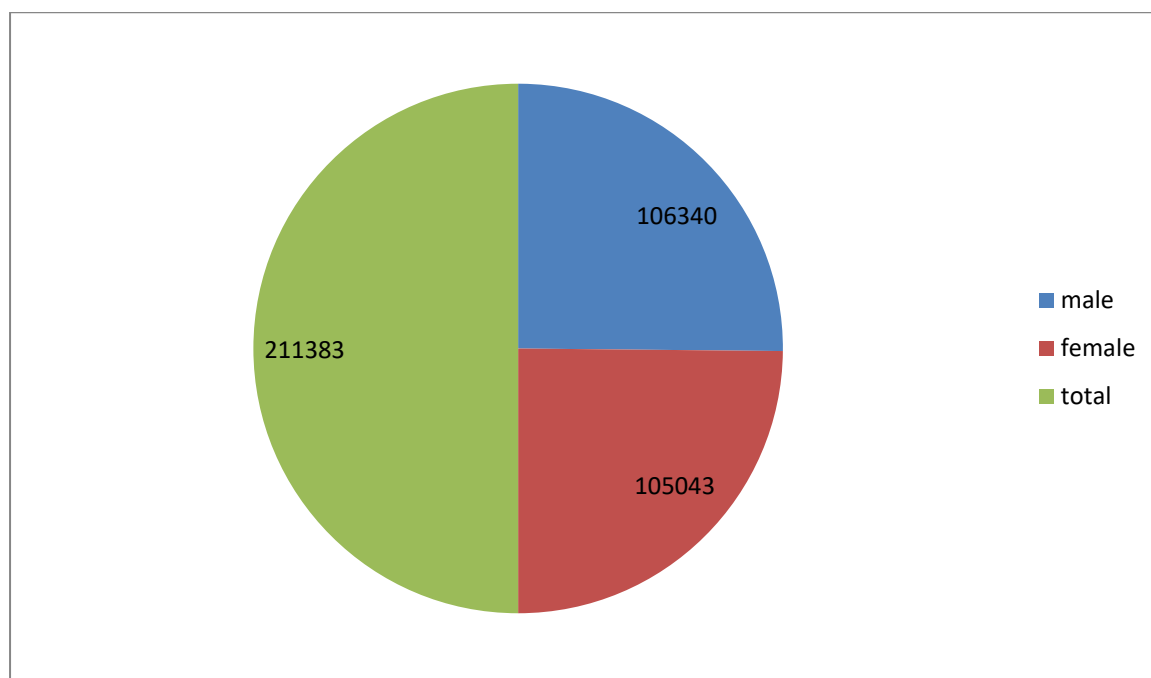


Figure 26 total population of Shebedino Woreda, Sidama region Ethiopia, May, 2021

Religions: The majority of the habitants, were protestants, with 81.94% of the population reporting that believe 8.61% were muslims,4.31% practiced Ethiopian Orthodox and 2.75% were Catholic and 2.39 were others

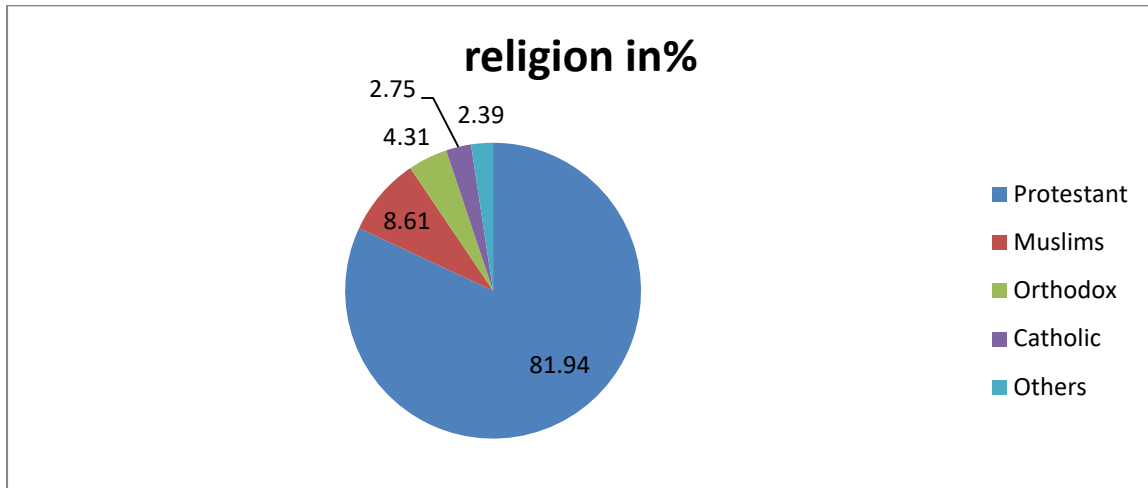


Figure 27 Types of religions in Shebedino woreda, Sidama regional State, May 2021

Ethnic compositions: the four largest ethnic groups reported in Shebedino are Sidama (94.43%), the Oromo (2.67%), the Amhara(2.3%), and all other ethnic groups made up 1.44% of the population.

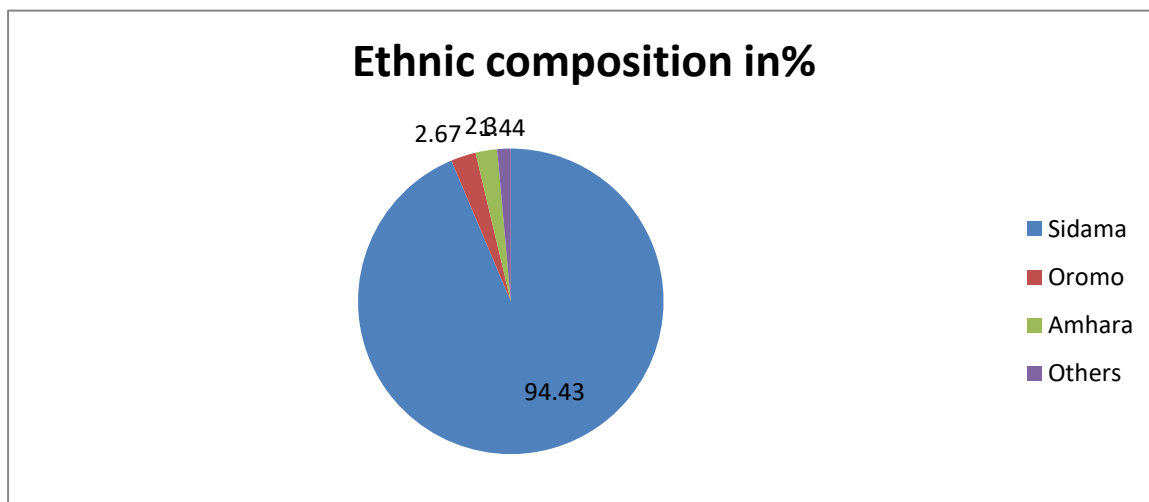


Figure 28 ethnic compositions in Shebedino woreda, Sidama region, Ethiopia,2021

Educational situations: there are 14 KGs, 33 primary schools and 02 secondary schools with the total enrolment of 5986 students (2971 and 3015 male and females respectively). From the targeted number of students (8636), only 5986 (69.3%) have enrolled. There was also a total of 1688(28.2%) students (824 and 864 male and female respectively) dropout schools.

The reason for this case were thought to be pure commitment in learning- teaching program, life quality problems, low level of living standards, lack of teaching aid materials, epidemic cases of COVID-19....etc.

There are a total of 2074 (1210 and 864 male and female teachers respectively.) 1 teacher to 3 students in population. The status of the teachers was not defined in their educational level.

Table 25 Educational institutes in Shebedino woreda , Sidama regional State, May 2021

Type of school	Quantity
KG	14
Primary school	33
Secondary school	02

Schools with water supply:

There are a total of 35 schools (02 secondary and 33 primary schools) in the woreda. Only 4(11.42%) schools have accessed with water supply. The rest 31(88.58%) has no accessibility to water supply.

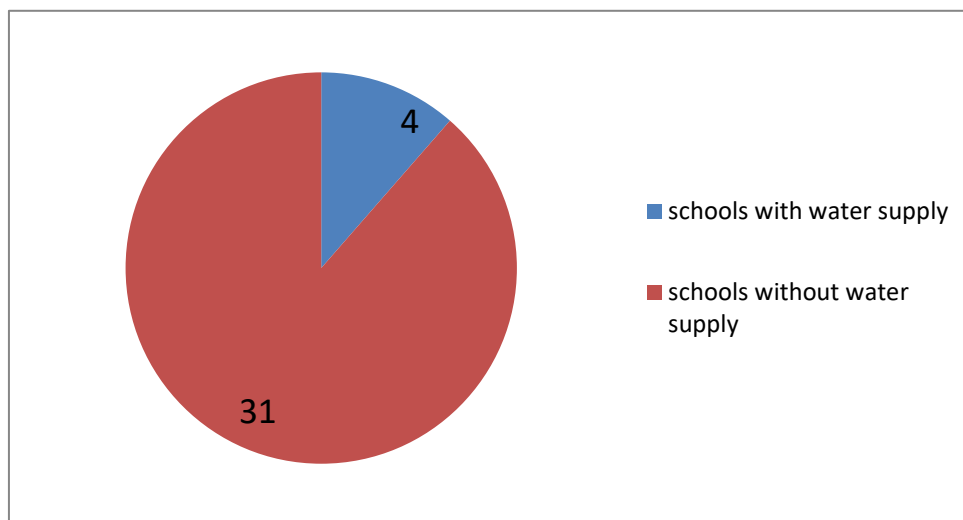


Figure 29 Figure schools with water supply Vs without water supply, in Shebedino woreda, Sidama regional state, May 2021.

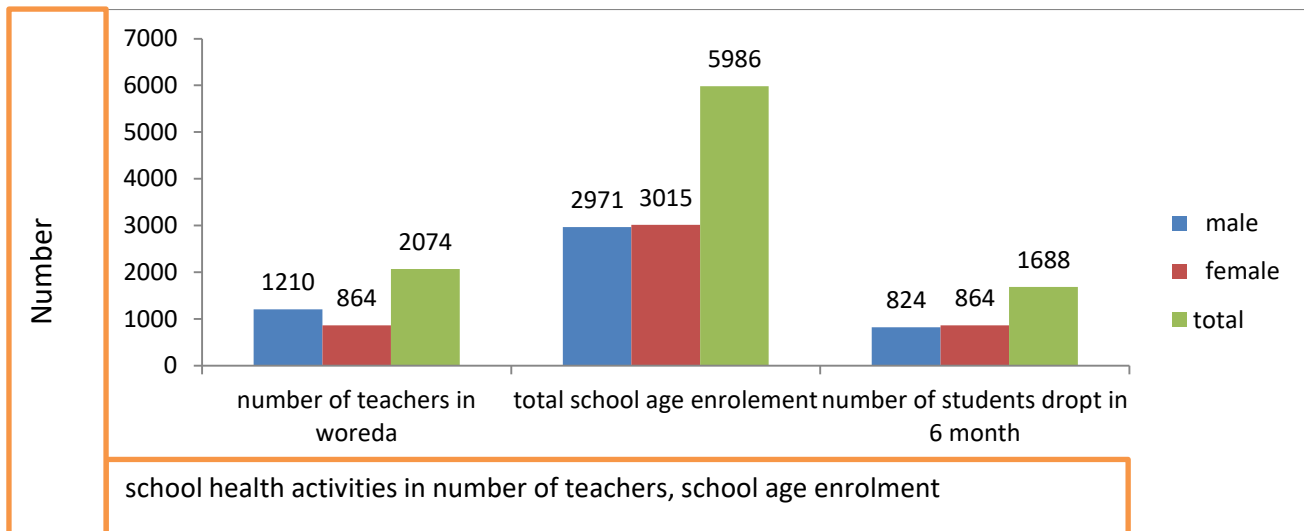


Figure 30 school health activities in number of teachers, school age enrolment and dropout Shebedino woreda, Sidama, May 2021.

Health institutions: there are 23 health posts, 6 health centres, 1 primary hospital, 6 pharmacies, 6 drug stores in the woreda. The highest health professionals in the woredas are MPH 04, HO 34, clinical nurses 216, midwife 32, lab technician 12, druggist 15, pharmacist 03, Environmental health 03, HEWs 59.

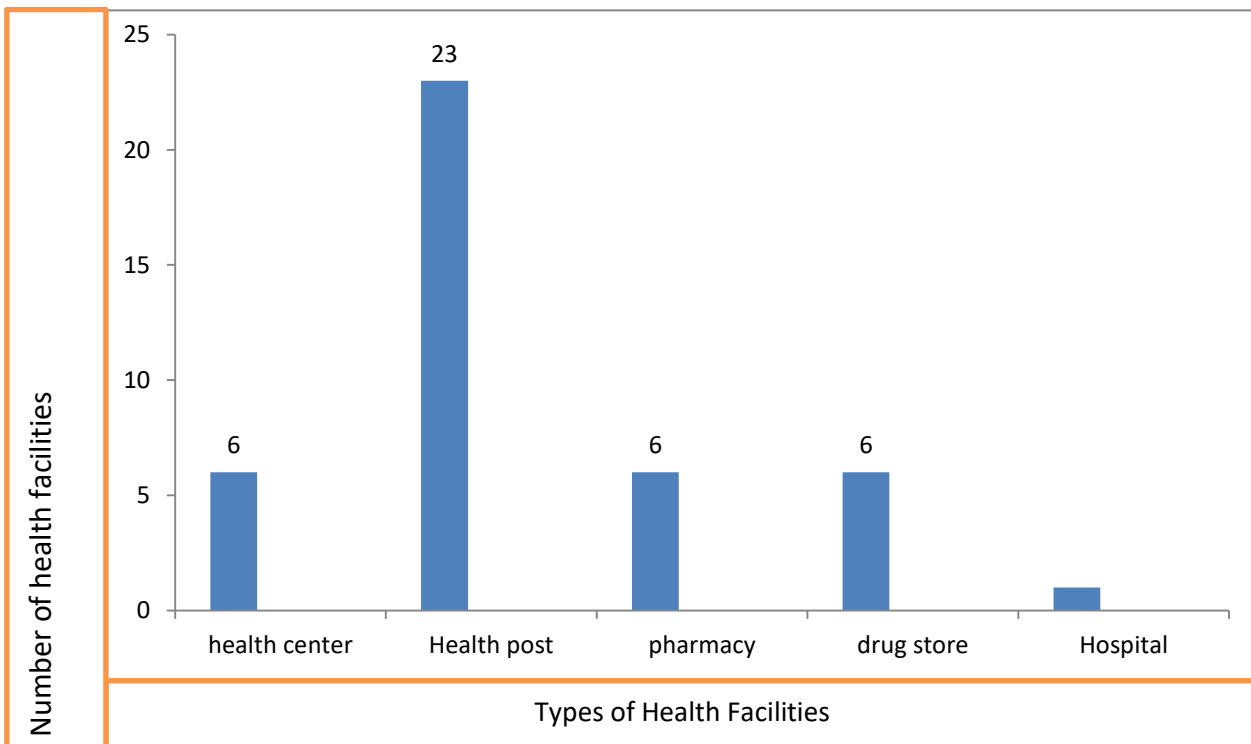


Figure 31 Type and number of health facilities in Shebedino, Sidama, May 2021.

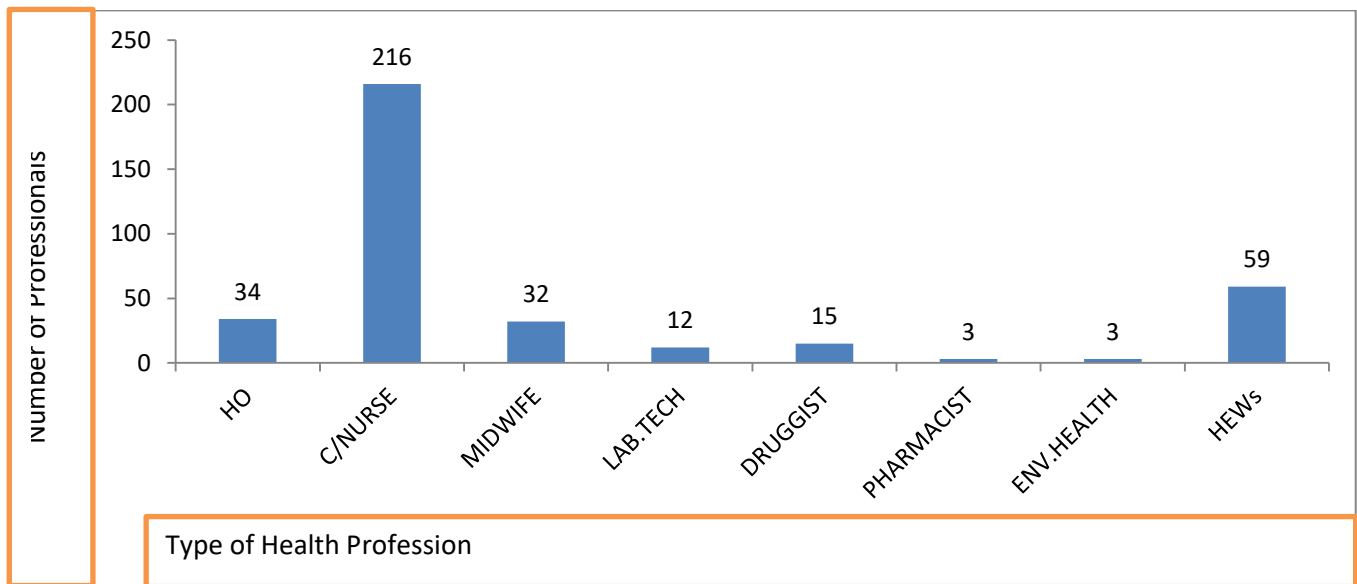


Figure 32 type of health profession in number, in Shebedino Woreda, Sidama regional state, May 2021

Top ten leading diseases: Typhoid fever, Typhus and UTI are the top three leading diseases with the total cases 3758, 1606 and 835 to OPD respectively. There was a total of 541 malaria case, 442 for >5 years, 99 for <5 years of age, with Case Fatality Rate (CFR) of 0 from 14 malarias kebeles .

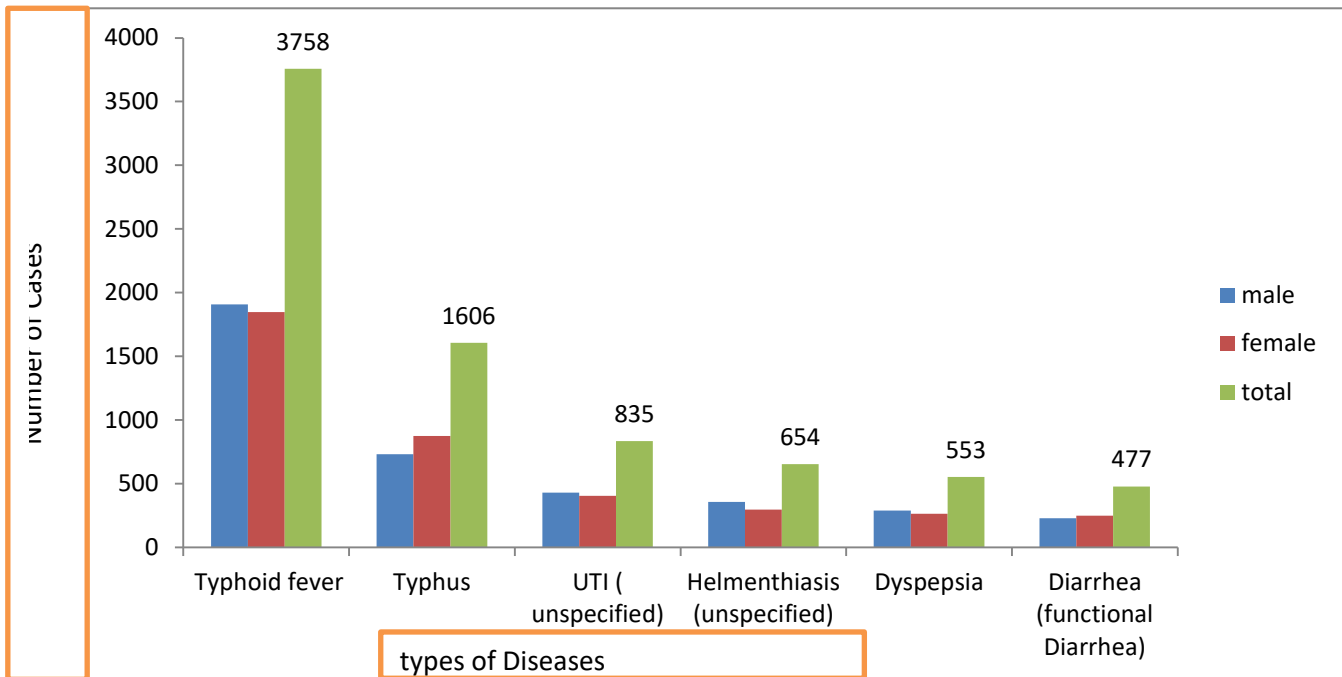


Figure 33 Top Ten leading causes of OPD visit (morbidity), in Shebedino woreda, May 2021

ANC follow-up : Number of 1st ANC follow up was 5106 and those who followed up to 4th ANC were 4147. The percentage of deliveries attended by skilled birth attendants was 82%, there was 01 still birth reported. The status of immunization provided in the same year was listed below.

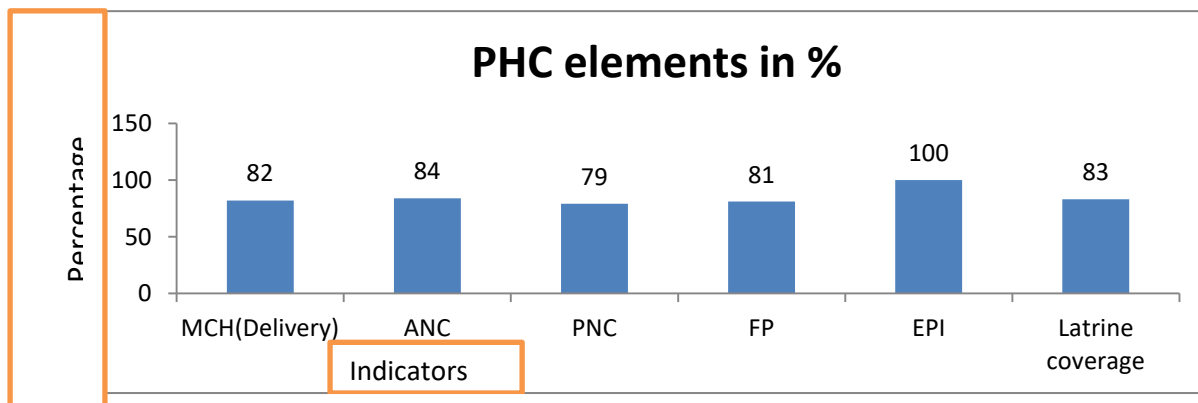


Figure 34 Status of primary health care components by coverage, in Shebedino woreda, May 2021.

HIV/AIDS: Total people screened for HIV (last year) was 6375 (2752 and 3623 PITC and PMTCT respectively) with the new incidence rate of 0.016%. There are 33 total cases of

ART follow up, 32 on HAART, and 01 on Pre-ART. No lost to follow-up, no dropout, and no deaths were observed in HIV/AIDS during the year of assessment

Table 26 Number & site of screened individuals for HIV, Shebedino, Sidama, May 2021.

Site of screening	Total number of screened	Result		Incident rate
		positive	Negative	
PMTCT	2752	0	2757	0
PITCT	3623	01	3622	0.016
Total	6375	01	6374	

TB cases: There were 339 TB cases of which 100% have completed their medication and 85% of them had complete cure rate. This is 1% greater than the national complete & cure rate (84%). TB deaths and defaulters were not observed. There were no dropout, no lost to follow up, no defaulters and no deaths in TB cases in the year of the study.

All TB cases were again screened for HIV and all were negative. All TB cases were EPT

Table 27 Cases, treatment and cure rate, Shebedino, Sidama, May 2021.

Total TB cases	TB treatment complete rate %	TB cure rate in %
339	100	85

Budget: based on the information from the woreda finance and economic development office of Shebedino woreda, the annual budget allocated from the region to the woreda in the year of 2020/2021 was 188,258,715 ETB. The amount of budget allocated to woreda health office was 35,432,839 (18.8%) ETB, which was the same to the previous year. NGOs in the

woreda covered 2.9% of the woreda budget , which was allocated for school guarantee, UNICEF support youth and health related sectors

Table 28 Total allocated budget for Shebedino, 2020/2021, Shebedino, Sidama,

Annually allocated budget for woreda	188,258,715 Birr
Annually allocated for Health from woreda	35,432,839 (18.82%)Birr
Allocated budget from NGOs	
School guarantee	2,446,535 Birr
UNICEF support Youth	844,953 Birr
Health/malaria, TB/HIV	2,216,977.16 Birr
Grand Total	193,787,131.16 Birr

Table 29 Immunization coverage, (for children and women), Shebedino, Sidama, May 2021.

Type of immunization	Immunization coverage in number	Coverage in %
BCG	24255	83
OPV-0	3956	77
OPV-1	4259	90
OPV-3	4234	90
Penta-1	4259	90
Penta-3	4234	90
PCV-1	4259	90
PCV-3	4234	90
Measles	4080	88
TT Coverage	---	73
Fully immunized	4080	88

Discussion:

Based on the collected data from Shebedino woreda health profile, Typhoid fever, Typhus and UTI are the three leading causes of outpatient visit causing morbidity. They accounts for 47.7%, 20.4% and 10.6% of 2020/2021 outpatient visit respectively. The Case Fatality Rate (CFR) in all top ten diseases was 0%. These (the morbidity) might be due to poor sanitation, lack of strong public health interventions and health educations. Again it might be due to lack of environmental and personal hygiene related to less solid and liquid waste management coverage (31%) only. There are 14 kebeles endemic to malarial. Following that, a total 541

malaria case was reported with a Case Fatality Rate (CFR) of 0. 18.3% (99) from under five and 81.7% (442) from adult OPDs.

Infrastructures in the facilities: only 4 (11.4%) of the school were access to water supply and accessibility to power supply was clearly not defined. Only 1 (4.4%) of the health post was access to power supply. But, both Health Center & Hospital were fully (100%) access to transportation, telecommunication, power and water supply. 90% of main source of water supply for the community is pump and the rest 10% is stream.

Health facilities: there is 1 hospital serving the community in the woreda.(1 to 211383) population, 6 health centers (1 to 35230), 23 health posts (1 to 9190), 6 pharmacies and 6 drug stores (1 to 35230) serving the community.

Health professionals: The highest health professionals in the woreda are HO 34(1 to 6217), BSc 16 (1 to 13211), clinical nurse level four, 30 (1 to 979), midwife 32 (1 to 328), lab technician 12(1 to 17615) , environmental 3 (1 to 70461) and HEWs 59 (1 to 3583). These may seek further training additional health care provide

Educational situations: The enrolment of school age children was less 5986 (69.3%) compared to targeted figure (8636). Also a total of 1688 (28.2%),of which 49% male and 51% female dropout school. This figure is much higher than to the total school dropped-out in Ethiopia (11.1%) as CSA/ 2011. That was might be due to lack of commitment in learning-teaching activities, poor socio-economic life. Thus, regional and woreda educational office shall put it in consideration for further improvement and social mobilization.

Limitations

Sectors lacking /missing appropriate data / health and health related indicators, for example, targeted figure for immunization coverage, specific infrastructure coverage in the woreda, income for HH/year, employment Vs unemployment rate, were again undefined.

Population structure in rural and urban area was not specified by age and sex category. The same was true that women in reproductive age group were not identified. Regarding education, total educated people (as whole) was not stated clearly. Number of students

dropped-out school was much impressive; compared to the total enrolment. This might be due to less social advocacy and mobilization beside to socio-economic factors.

However the Health care in the woreda was structurally maintained, implementation in the eight primary health care was not such satisfactory. Because, regardless of availability of medical supply (bed nets, RDT, malarial drugs), there were subsequent reports of cases from malarial area, again the first and the second top ten leading diseases were adjacent to environmental sanitation, personal hygiene, solid and liquid waste disposal management.(as the coverage of solid and liquid waste disposal was only 31%.

Conclusion and Recommendations

Typhoid fever and typhus were the first and the second leading morbidity causes of OPD visit followed by UTI. These are primarily related to primary health care activities. So that, the woreda health office and HEWs are highly recommended to set plan for implementation of health education, environmental sanitation, personal hygiene, and solid and liquid waste disposal management to meet the objective of primary health care practice. All sectors under the woreda office are again recommended to fill gaps related to missing of data registration; for example, rural and urban population category in sex, literacy, income for HH/year, infrastructure coverage, employment and unemployment rate. The Woreda education office significantly need recommendation up on the number of students dropout school, which further seek commitment for advocacy, community mobilization and partnership initiations

References

1. Sidama region health profile, 2020/2021
2. Shebedino woreda health profile of 2020
3. Shebedino woreda finance and socio-demographic Development bureau
4. CSA/2011
5. Mukemil Hussen, compiled body of work in field epidemiology, june, 2019

Chapter Eight: Abstract and Manuscript writing

Abstracts on Health Profile Description Report of Shebedino woreda, Sidama Regional

Addis Ababa University, College of Health Sciences, School of Public Health *Ethiopian Field Epidemiology and Laboratory Training Program (EFELTP)*

Abstracts on Health Profile Description Report of Shebedino woreda, Sidama Regional State, May 2021, by Emiru Tessema

emirutesema@gmail.com,

Abstract

Introduction – The objective of this study was to assess the health profile and to identify problems in health and health related issues of Shebedino Woreda, Sidama region (a tenth regional state of Ethiopia, newly introduced in 2020) which is, 28 and 302 km away to South from the regional city(Hawassa) and Addis Ababa respectively. The total population was 211,383. Number of males and females are 1063(50.3%) and 10543(49.7%) respectively

Method- a descriptive cross sectional study was conducted from 14-30 May 2021 to collect relevant information of health and health related issues using the structured questionnaire by interviewing facility, assessing medical records and documents of all offices under the woreda.

Result- Typhoid, Typhus & UTI accounts for 47.7%, 20.4% and 10.6% of 2020/2021 OPDs with CFR 0% respectively. Solid and liquid waste management coverage was only (31%). A total of 541 malaria case was reported from 14 endemic malarial kebeles with a Case (CFR) of 0%. 14 KGs, 33 primary and 02 secondary schools with the total enrolment of 5986 students (2971 and 3015 male and females respectively). Only 5986 (69.3%) have enrolled out of 8636 targeted students. A total of 1688 (28.2%) students (824 and 864) male and female respectively, dropout schools. 31 (88.58%) with lack of water supply.

Conclusion- Typhoid fever and typhus were the first and the second leading morbidity causes of OPD visit followed by UTI. These were related to primary health care activities. Woreda health office and HEWs are highly recommended to set plan for implementation of health education, environmental sanitation, personal hygiene, and solid and liquid waste disposal management only (31%), to meet the objective of primary health care practice. The Woreda educational office is recommended on the number of students' dropout school 1688(28.2%)

[Manuscript: Surveillance Data Analyses of Last Five Years \(2016-2020\) on Sever Acute Malnutrition in Somali Regional State, April 2021, Ethiopia](#)

Surveillance Data Analyses of Last Five Years (2016-2020) on Sever Acute Malnutrition (SAM) in Somali Regional State, April 2021, Ethiopia.

Emiru Tessema¹, Pof.Alemayehu W², Abdulnasir Abagaro³

Addis Ababa University, College of Health Science School of public Health, Department of Field Epidemiology.

Authors' email address:

Emiru Tessema= emirutesema@gmail.com

Alemayehu W= alemayehuwy@yahoo.com

Abdulnasir Abagaro= adlnsr@yahoo.com

[Abstract](#)

Background: Malnutrition is a broad term that refers to all deviations from adequate and optimal nutritional Status resulting from specific nutrient deficiencies or diets based on inappropriate combinations or proportions of foods. Worldwide, malnutrition is an underlying cause in the deaths of more than 3.5 million children under the age of 5 each year. Some 13 million infants are born each year with low birth weight (LBW). Fifty-five million children are wasted, and of these 19 million are severely wasted. About 178 million children around the world are stunted. Of the estimated 178 million, 90 percent live in 36 countries, one of which is Ethiopia. . This study aimed to describe the Surveillance Data Analyses of Last Five Years (2016-2020) on Sever Acute Malnutrition (SAM) in Somali Regional State, April 2021, Ethiopi.

Method: A retrospective study design was conducted to analyse the five years (2016-2020) PHEM surveillance malnutrition data of Somali region from April 15-30/2021. The PHEM surveillance malnutrition data was reviewed, checked and cleaned for assuring completeness, validity and consistency of the data prior to analysis.

Results A total of 922,312,824 (922,312,154 & 670) outpatient and inpatient respectively , Severe Acute Malnutrition (SAM) cases and 01 death was reported from Somali Regional State during the time period of 2016 to 2020. These give an average of 184,462,565 cases per year, and mortality rate of 0.0000001 per 1000 population for the time period of 2016 to 2020.

The number of cases was increasing in all years consecutively (2016-2020), with highest number of cases (256,386,865) or 27.8%, being reported in 2020. The leading zone was Fafaan, followed by Jarar and Shebelle (second and third respectively). There were no defined cases for increments.

Conclusion A total of 922,312,824 (922,312,154 & 670 outpatient and inpatient) respectively , Severe Acute Malnutrition (SAM) cases and 01 death was reported from Somali Regional State during the time period of 2016 to 2020. This gives an average of 184,462,565 case per year, mortality rate of 0.0000001

The number of cases were increasing from year to year consecutively (2016-2020), but highest number of cases (256,386,865) or 27.8%, being reported in 2020. Fafaan is the leading zone, and followed by Jarar and Shebelle (second and third respectively).

Although millions of malnutrition were treated under SAM cases, it is also underestimated due to exclusion of MAM cases in the weekly PHEM report. The number of SAM cases was increasing from year to year.

MAM and SAM case data need to be collected and reported by all level of reporting units to have the right figure of malnutrition.

MoH need to include the necessary variables such as age and sex in the weekly surveillance data reporting format to have full information of the cases. The Federal government and Somali Regional State need to modify the PHEM reporting formats for inclusion of MAM

case, age & sex . Further research needs to be done by research institutes or any other interested to determine the predisposing factors.

Key words: SAM: Cases: Trend: Death :Outpatient : Inpatient Somali region

Introduction

Background

Malnutrition is a general term that refers to all deviations from adequate and optimal nutritional status brought on by particular nutrient deficits or diets built on unsuitable food ratios or combinations. Malnutrition comes in two flavors: over- and under-nutrition, and there are three types of severe acute malnutrition (SAM): kwashiorkor, marasmus, and marasmic kwashiorkor. A person is classified as malnourished either acutely or chronically, depending on the sort of nutritional shortfall they are experiencing. Inadequate nutrition over an extended period of time results in chronic malnutrition, whereas acute malnutrition is brought on by a sudden drop in food consumption. (1).

Stakeholders from Ministries of Health, the UN system, development agencies, civil society organizations, academia, the private sector, intergovernmental organizations, and philanthropic bodies launched the Scale Up Nutrition (SUN) Movement at the spring 2010 World Bank and IMF meetings, at the height of a global financial crisis. Members of the SUN Movement created a Framework for Action to Scale Up Nutrition, which would put nutrition investments at the forefront of development work, building on the 2008 Lancet series with leadership from the UN(2).

By creating international stakeholder networks, the SUN Movement sought to promote nutrition-related collaboration and foster a more cogent nutrition agenda at both the global and national levels. The SUN Movement established the Country Network, the Civil Society Network, the Donor Network, and the Business Network as four Multi-Stakeholder Platforms (MSPs) under the direction of national leaders. Participants in the SUN Movement establish MSPs in their individual nations as well.(3)(4).

Over the past ten years, Ethiopia has made positive strides in eliminating malnutrition. However, because of the persistently high baseline rates of malnutrition, the nation must

continue to make large investments in nutrition. The Food, Medicine and Health Care Administration and Control Proclamation (No. 661/2009) was issued by the Ethiopian House of Representatives in 2009.

The Ethiopian Food, Medicine and Health Care Administration and Control Authority (FMHACA) and regional health regulatory bodies are authorized to implement this proclamation. Both entities are mandated to promote and protect the public health by ensuring the safety and quality of products and health services through registration, licensing and inspection of food establishments, pharmaceuticals, health professionals and health institutions. According to their mandates, both organizations will ensure the quality and safety of nutritional supplies, including Fortified foods, Food fortificants/Premix, Micronutrient supplements (iron, zinc, folic acid, Vitamin A, etc.), Breast milk substitutes, infant and follow-up formulas, Complementary foods, Therapeutic and supplementary foods, Iodized salt and WASH(5).

The government has already in placed programs and initiatives with set targets that directly and indirectly contribute to the reduction of under-nutrition. These programs include increasing agricultural productivity; promoting girls' education; immunization; integrated management of neonatal and childhood illnesses (IMNCI); WASH; family planning, prevention of mother-to-child transmission of HIV (PMTCT), skilled delivery and delaying of pregnancy(5).

Statement of the problem

To date, in most low- and middle-income countries (LMICs), the marketing of foods and non-alcoholic beverages is unregulated; where regulations are in place, they tend to be voluntary codes and are poorly monitored and enforced. WHO guidance on best practice for such marketing is rarely followed(6).

In 1974, the World Food Conference declared, "Every man, woman and child have the inalienable right to be free from hunger and malnutrition.". Most (98%) of these individuals lived in developing economic regions. Socially vulnerable groups such as children and childbearing women shoulder the largest burden of malnutrition(7)(8).

Food insecurity and malnutrition in adolescents and pregnant women, compounded by gender discrimination, leads to an intergenerational cycle of nutrition problems which manifest as stillbirths, miscarriages, low birth weight, growth failure, increased risk of maternal and neonatal mortality, impaired cognitive development, sub-optimal productivity in adults and reduced economic growth for the nation(9).

The state of one's physical nourishment and age are also related. It is well known that one of the biggest factors on fetal growth is the mother's size and body composition before conception. It is crucial to make sure adolescent girls are physically and nutritionally capable of bearing children. The Ethiopian Demographic and Health Survey (EDHS) from 2011 indicates that the average age of a first marriage is around 16.5 years old. 15% of adolescent girls (ages 15 to 19) are either mothers already or expecting their first child.(10)(11)(12).

According to the UN's Food and Agriculture Organization (FAO), malnutrition costs the world's economy USD 3.5 trillion annually in lost productivity and medical expenses. The Cost of Hunger in Africa (COHA) study's preliminary findings indicate that malnutrition costs Uganda, Ethiopia, Swaziland, and Egypt between 1.9 and 16.5% of each country's national Gross Domestic Product (GDP).(13)(14).

Worldwide, malnutrition is an underlying cause in the deaths of more than 3.5 million children under the age of 5 each year. Some 13 million infants are born each year with low birth weight (LBW). Fifty-five million children are wasted, and of these 19 million are severely wasted. About 178 million children around the world are stunted. Of the estimated 178 million, 90 percent live in 36 countries, one of which is Ethiopia. The prevalence of obesity in preschool children was 6.7% worldwide. Malnutrition is among the four leading causes of child mortality around the globe.

In 2013, the World Health Organization (WHO) reported malnutrition was linked to 45% of all childhood deaths. Malnutrition is a contributing factor in the deaths of 60.7% of children diagnosed with diarrheal diseases, 57.3% of deaths associated with malaria, 52.3% deaths associated with pneumonia, and 44.8% of deaths from measles(15)(16)(17).

The average prevalence of obesity in Africa was 8.5%. Africa shows rising numbers of stunted children due to population increase and an almost stagnant prevalence of stunting

over the past two decades - of the 34 countries that account for 90% of the global burden of malnutrition, 22 are in Africa(18)(19).

Ethiopia is the seventh wasting burden country from the ten most affected countries. The 2011 EDHS estimated the national prevalence of stunting among children at 44.4 percent, the prevalence of underweight at 28.7 percent and wasting at 9.7 percent. The survey also revealed that the level of chronic malnutrition among women in Ethiopia is relatively high, with 27 percent of women either thin or undernourished—that is, having a body mass index (BMI) of less than 18.5 kg/m². Between 2000 and 2011 the prevalence of both underweight and stunting declined by 32 and 23 percent, respectively(20).

Addis Ababa is an ideal setting to describe the coexisting rates of under and overnutrition. Addis Ababa is the capital and largest urban area of Ethiopia, a country that has been largely burdened by famine, food insecurity and underweight. The obesity and overweight rates in the city are comparable to those reported in other urban areas of the Sub Saharan Africa (SSA) region, where 25.7% of women were overweight and 10.2% were obese and 25% of adolescents in school were obese. The trends in the increase of obesity rates have not yet been documented for this capital, and there is scarce information about the determinants of overweight. However, this information can help to elucidate policy and program strategies to deal with the coexisting underweight and overweight problems(21)(22).

A study conducted on changes in the prevalence of underweight and overweight/obesity in non pregnant women of reproductive age (age 15-49), and their main socio-demographic correlates in Addis Ababa using data from 2000, 2005 and 2011 Ethiopian Demographic and Health Surveys, revealed the prevalence of overweight/obesity rose significantly from 16.1 to 20.6%; while underweight decreased from 17.9 to 14.1% between 2000 and 2011(23).

Although several studies have been conducted on child malnutrition in Ethiopia there is a research gap on the coexistence of the double burden of malnutrition among adolescents which presumably is central to the success of many public health agendas, including the Millennium Development Goals aiming to reduce child and maternal mortality and non-communicable diseases(24).

Rationale of the study

According to the National Public Health Emergency Management (PHEM) guide line, malnutrition is among the twenty-three prioritized events and diseases prioritized based on established criteria's and included in the national surveillance system. These prioritized events and diseases are categorized in to immediately and weekly reportable diseases. Of which SAM is a weekly reportable condition by using a standardized weekly reporting format at all levels of the government (community to national level).

MOH has also been developed and implementing a nationwide nutrition program and initiatives by setting strategic objectives and targets that directly or/and indirectly contributes to the reduction of malnutrition. Ethiopia is being challenged by repeated humanitarian crisis such as droughts, flooding, conflict affecting the agricultural production and provision of balanced diet for the population. Somali region is the one being affected by the situation directly or/and indirectly causing an increment of malnutrition cases and deaths. These humanitarian crisis and presence of low socio-economic class communities and street children in the region contribute a lot for the increment of SAM cases and deaths. Due to these reasons a very high number of SAM cases were being reported every week through the surveillance system from the regional health . Therefore, the aim of analysing last five years SAM data of Somali Region was to determine the incidence of SAM cases, describe the trend of SAM cases and deaths in the region, describe cases epidemiologically, provide information for effective planning and targeted interventions and to provide an input/base for further research on it.

Significance of the study

The significance of this study was primarily to show the burden of malnutrition in Somali regional state, following this intervention measures will be implemented. If the implementation measures are provided with regular monitoring and evaluation, the burden of malnutrition will be minimized to an acceptable level. This in turn will reduce the cost of treating malnutrition and the time waste for attending cases will also be reduced. This time will be used to do another productive activity. These measures enable to achieve the objectives set in the national nutrition program and nutrition surveillance.

Objective

General objective

To provide malnutrition information for appropriate public health planning, enforce nutrition related policies and guide effective use of malnutrition treatment supplies in Somali region, 2021.

Specific objectives

To determine the magnitudes of Severe Acute Malnutrition (SAM)

To determine the mortality and morbidity due to Severe Acute Malnutrition (SAM)

To describe Severe Acute Malnutrition (SAM) cases epidemiologically

To determine proportion of Severe Acute Malnutrition (SAM) cases treated as inpatient and out patients

Methodology

Study area population

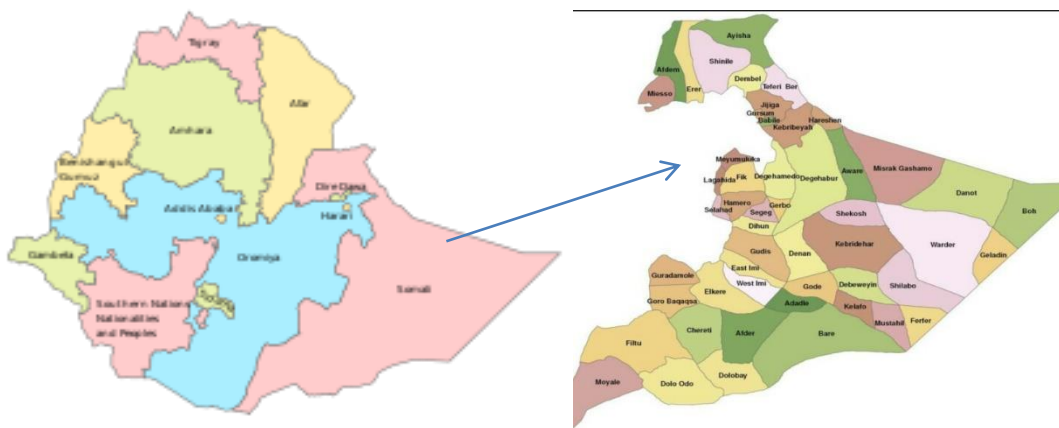


Figure 35 Map of Study area, Somali Regional State, East Ethiopia, 2021.

The study area for this last five years malnutrition data analysis was the Somali regional state. Somali regional state is divided into eleven Zones and six special zones 94 woredas administratively.

Study population

The average total population of the regional state for the study period was projected to 15,654 million (based on CSA 2017) and The total area of the regional state is 327,068km². The study population for this malnutrition data analysis was all children less than five year of age found in the region

Study period and design

A retrospective secondary data review was conducted to analyse last five years (2016-2020) PHEM surveillance malnutrition data of Somali region from April 15-30/2021.

Data collection tools and procedures

Malnutrition surveillance data was requested from the national Public Health Emergency Management (PHEM) and permission was gained to access the data from PHEM data management case team. PHEM weekly reporting /format for malnutrition was used to collect the data

Data quality assurance

The PHEM surveillance malnutrition data of Somali region was reviewed, checked and cleaned for assuring completeness, validity and consistency of the data prior to analysis.

Data analysis

Microsoft excel 2010 was used to analyse last five years (2016-2020) PHEM surveillance malnutrition data of Somali Region. Simple mathematical operations (addition, subtraction, division, multiplication) were applied to analyse and describe malnutrition cases in the region reported during 2016-2020.

Data dissemination

The final result of the analysis will be submitted to Addis Ababa University School of Public Health Department of Field Epidemiology, FMOH, EFELTP, Somali region, Regional Health Bureau/PHEM unit and EPHI.

Ethical clearance/ethical consideration

Verbal informed consent to accesses and analyse last five years (2016-2020) PHEM surveillance malnutrition data of Somali region was obtained from the national PHEM Head after detail explanation of the objective, methodology and data dissemination.

Operational definition

Edema (Oedema): the enlargement of organs, skin, and other body parts in response to a build-up of water and sodium in the tissues(5).

Kwashiorkor: caused by insufficient protein intake and characterized by skin and hair changes(5).

Marasmic- kwashiorkor: a combination of marasmus and kwashiorkor(5).

Marasmus: caused by rapid deterioration in nutritional status and characterized by extreme wasting of fat and muscle(5).

Over nutrition: is the hyper-consumption of calories and nutrients beyond levels necessary for growth, development, and metabolic functioning(5).

Overweight: weight for height is above two standard deviations from the median of the WHO Child Growth Standards(5).

Severe Acute Malnutrition case (SAM): Children age from 6 months to 5 years with MUAC less than 11cm and/or children with bilateral edema regardless of their MUAC.(25) Stunting: height for age is more than 2 standard deviations below the WHO Growth Standards median; a result of long-term nutritional deprivation(5).

SUN Business Network: unites companies that have pledged to reach over 120 million undernourished women and children together each year with direct and indirect nutrition interventions by 2020(5).

Results

There was also a discrepancy in the sum total of malnutrition in all woredas .This indicates that there were missing values /mathematical errors in registration or during addition. Because all numbers figured out on sum total were correspondently unmatched.

Table 30 Distribution of SAM cases from In and out patients by reporting sites, Somali Region, April 2021.

Reporting sites(Zones)	Sum of Malnutrition OutPts Cases	Sum of Malnutrition InPts Cases	Sum of Malnutrition total Cases
Afder	86354711 (9.4%)	30 (4.%)	34307917
Dhewa	31543376 (3.4%)	0	12383912
Doollo	58842597 (6.4%)	156 (23.2%)	23002782
Erar	70886225 (7.7%)	0	27863802
FAAFAN	133264446 (14.4%)	25 (3.7%)	52707102
Fik	58416605 (6.3%)	0	22572520
Jarar	119190054 (12.9%)	273 (40.7%)	46692012
Korahe	100941706 (10.9%)	7 (1.0%)	39383882
Liben	68665861 (7.4%)	15 (2.2%)	26784960
NOGOB	4581413 (0.5%)	45 (6.7%)	2104848
SHABEELE	103769605 (11.3%)	105 (15.7%)	40584900
SITTI	85855555 (9.3%)	14 (2.1%)	33537135
Grand Total	922312154	670	361925772

From the last 5 years reports of 12 Zones of reporting site, in Somali Regions, 3 Zones were not included in 2016 (Dhawa, Elar & Fek) and one Zone (Nogobo) was silent starting from 2017 –up to reporting date

Table 31 Reports of SAM cases by years, Somali Region, April 2021.

Years	Sum of Malnutrition OutPatient Cases	Sum of Malnutrition InPatient Cases	Sum of Malnutrition total Cases
2016	18492	670	19162
2017	185504746	0	185504746
2018	233012136	0	233012136
2019	247389915	0	247389915
2020	256386865	0	256386865
Grand Total	922312154	670	922,312,824

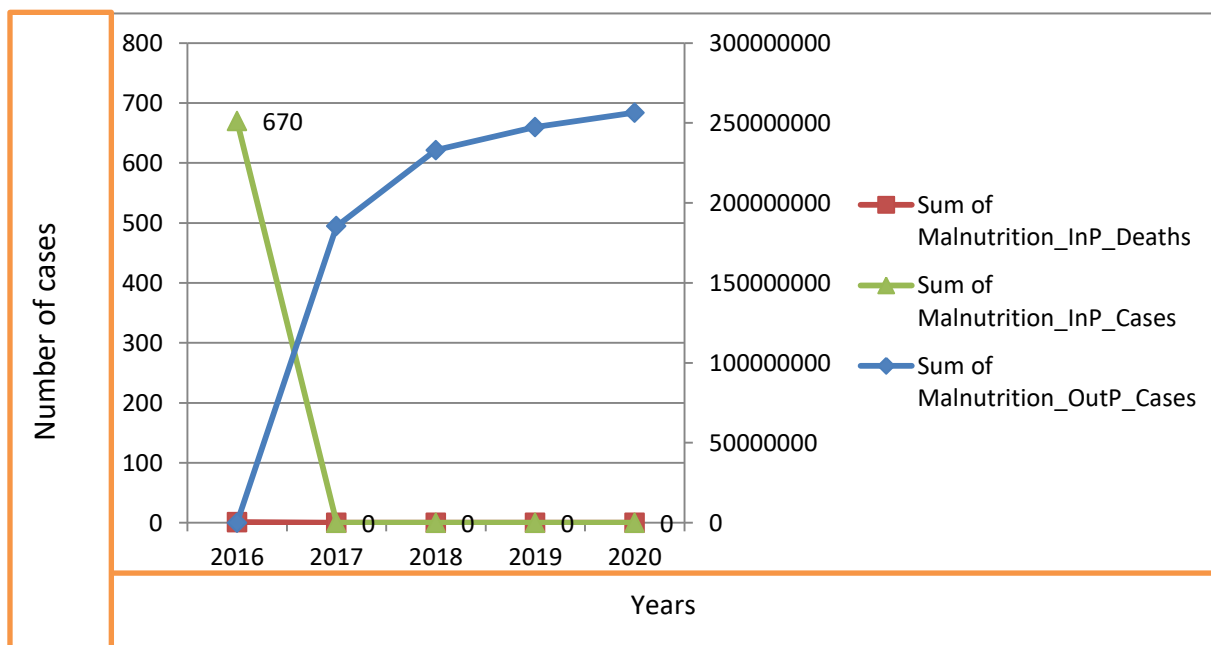


Figure 36 Trends of SAM cases by year in Somali, Ethiopia, April 2021.

The number of cases increased from year to year consecutively (2016–2020), with the highest number of cases (256,386,865), or 27.8%, being reported in 2020. Fafaan is the leading zone, followed by Jarar and Shebelle (second and third, respectively). In 2020, regardless of season, the number of SAMs in all months was very high.

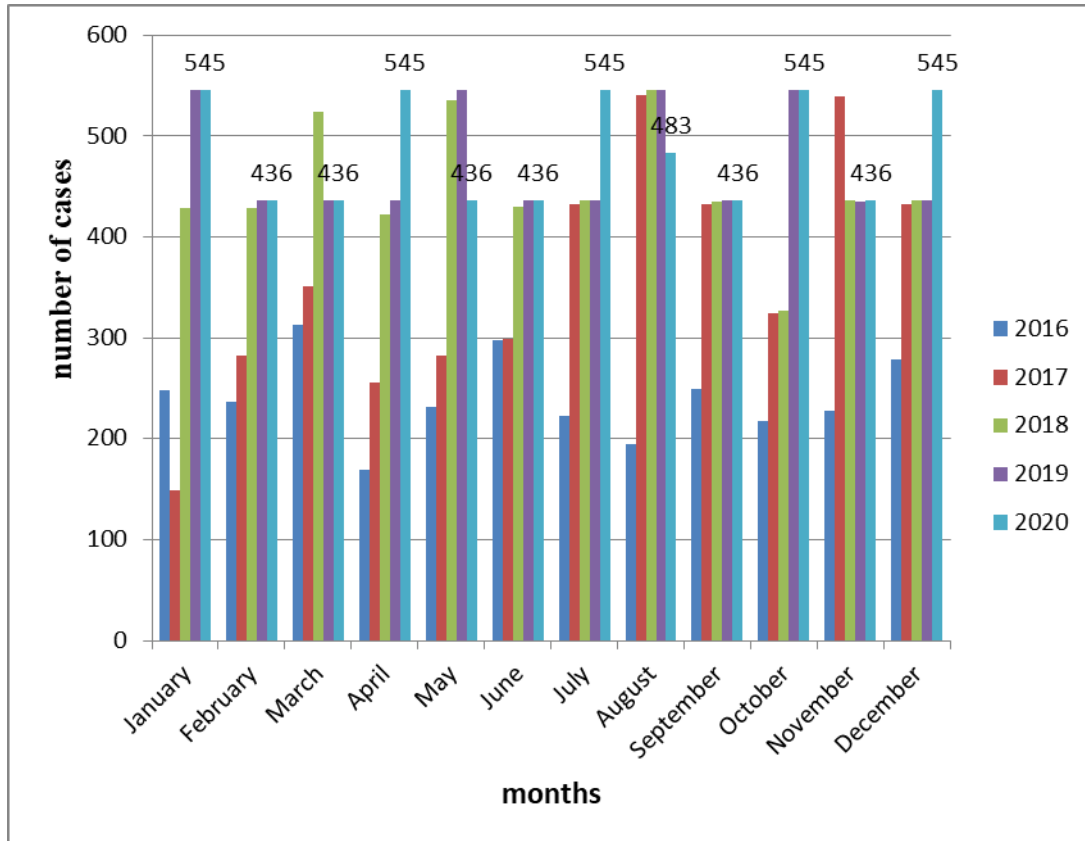


Figure 37 Distribution of SAM cases by months of each year,(2016-2020),April 2021, Somali, Ethiopia

There were a total of 922,312,154 and 670 (outpatient and inpatient SAM cases, respectively). Faafan, Jarar, and Shebelle were the top three zones with the distribution of SAM cases at outpatient clinics, with 14.4%, 12.9%, and 11.3%, respectively.

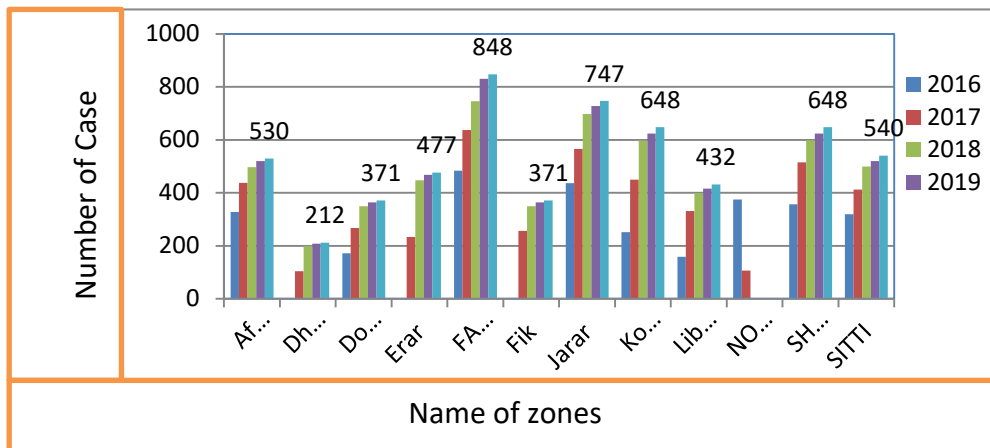


Figure 38 Distribution of SAM cases by zones in years(2016-2020), April,2021, Somali, regional state, Ethiopia.

From the total of 670 inpatient cases in 2016, 01 death (CFR 0.14%) was reported from Afder Zone, Gura Damole Woreda and there was no death report in all the rest reporting years either as outpatient or as inpatient.

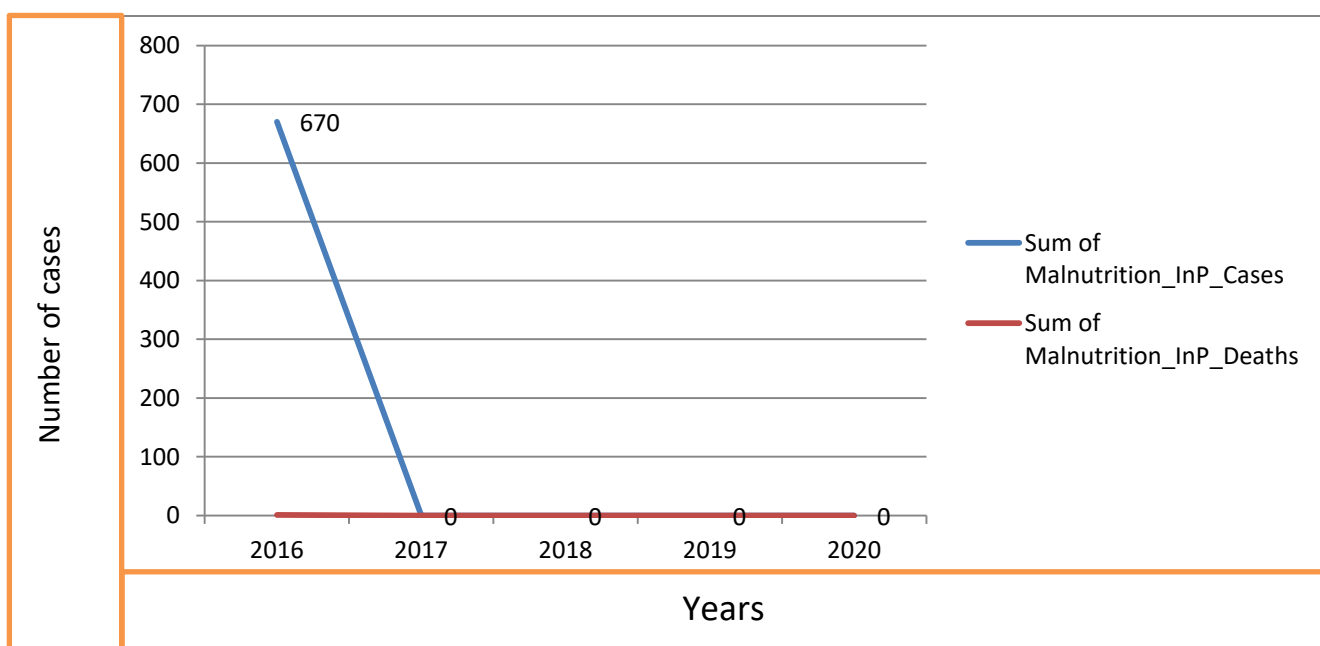


Figure 39 Trends SAM cases in death at in patients, in year(2016-2020), Somali region, 2021

The highest SAM case was reported in the 34th Epi. Week of 2020, other than the rest of the reporting years. The case for the increments was not clearly defined. However, drought, displacement, starvation, and the poor economic level of an individual Costs of food items, a lack of strong nutrition-related policies, irregular inspection of packed foods, and growth in population are thought to be the underlining causes.

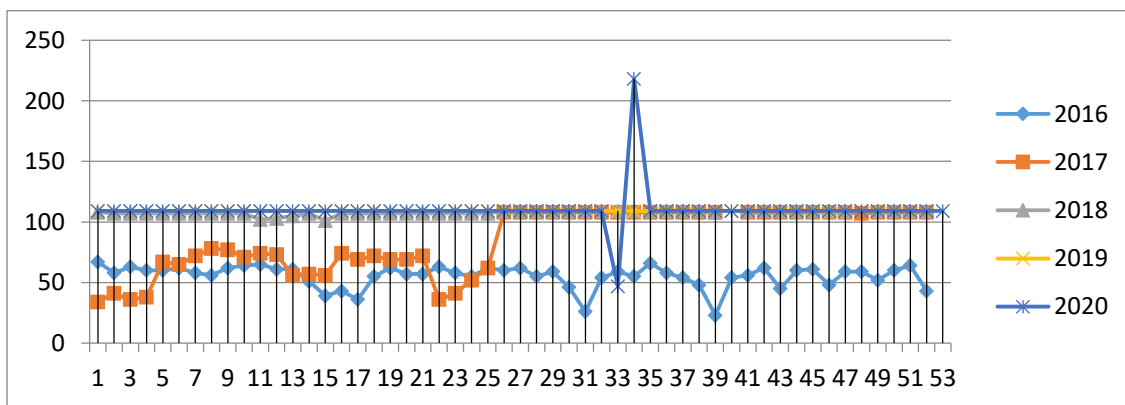


Figure 40 Trends of SAM cases in Epi. Weeks of each year, (2016-2020), April 2021, Somali region.

Discussion

A total of 922,312,824 (9922,312,154 and 670 outpatient and inpatient, respectively) severe acute malnutrition (SAM) cases and 1 death were reported from Somali Regional State during the time period of 2016 to 2020. This gives an average of 184,462,565 cases per year and a mortality rate of 0.0000001 per 1000 people for the time period of 2016 to 2020.

The number of cases increased from year to year consecutively (2016–2020), with the highest number of cases (256,386,865), or 27.8%, being reported in 2020. Fafaan is the leading zone, followed by Jarar and Shebelle (second and third, respectively). There were no defined cases for increments. Costs of food items, a lack of strong nutrition-related policies, and irregular inspection of packed foods might also have contributed to this increment in SAM cases. The increment might also be linked to the increased completeness of the data, as there was a

discrepancy in the sum total of cases. Lack of strong coordination and weak participation of nutrition acting agencies might also be contributing factors to the increment.

Relaying on the surveillance report from which the data was analyzed, there was also expansion on bringing the services for managing SAM, and the prevalence of SAM is increasing.

Research needs to be done by research institutes or anyone else interested to determine the predisposing factors.

Although there were significant outpatient reports, deaths were not reported in all five years except 2016, with only one death reported from inpatients. It is unclear how to compare the number of cases reported throughout the reporting year with the number of reported deaths. Because it is obvious that the missing values in the sum total can magnify the possibility that there might be a discrepancy in registration, So that there should be recommendations on data clearance, completeness, and validation as per reporting time. The highest SAM case was reported in 2020, significantly in EPI week 34.

As malnutrition decreases the immunity of an individual, exposing many communicable diseases that are thought to be the major underlining causes, families and health facilities are initiated to focus on the supplementation of food and seeking health care provisions. Due to this, each family and, as a whole, the country are obligated to pay for medical supplies.

The data collected through the weekly PHEM surveillance system is not very informative due to the limited collection of features and variables, which lack variables like age and sex. Although the collection of data by the woreda was timely, there were again discrepancies in summation.

Lack of these pertinent variables restricts analysis and interpretation of cases by woreda, age group, and sex, which is important for targeted planning and intervention and for effective use of limited resources. Besides this, the report didn't include MAM cases, which makes it difficult to determine the incidence of MAM cases and total malnutrition cases (MAM and SAM). The proportion of MAM cases that progressed to SAM cases was also not known. Having information on these variables might have great value in minimizing SAM cases and deaths in the Somali regional state

Limitations

The denominator used in this analysis includes under-6-month-old children due to a lack of appropriate figures for these age groups in all SAM cases. The analysis didn't reveal case distribution by age, sex, or woreda /kebele due to the lack of these variables in the weekly PHEM surveillance reporting format. The PHEM report also didn't include MAM cases. These limitations also limited not only the scope of discussion but also the analysis for further planning. There were also discrepancies in missing values and the total sum of the cases.

Conclusion and Recommendations

Although millions of cases of malnutrition were treated under SAM, they were also underestimated due to the exclusion of MAM cases from the weekly PHEM report. The number of SAM cases increased from year to year.

MAM and SAM case data need to be collected and reported by all levels of reporting units to have the right figure of malnutrition.

MoH needs to include the necessary variables, such as age and sex, in the weekly surveillance data reporting format to have full information on the cases.

MoH should, in place of food security programs such as CBN (community-based nutrition), OTP (Outpatient Therapeutic Feeding Program), and TSFP (Targeted Supplementary Feeding Program), enforce nutrition-related policies and maintain regular inspections of packed foods. Also needs incorporation and strengthening of a multi-sectoral approach to malnutrition.

MoH and Somali Regional State are highly recommended to forward capacity-building training for all health workers, including HEWs and health care providers.

8. References

1. Rosenberg et Al. Concept Note : Malnutrition. Harvard Med Sch. 2015;1–20.
2. SUN. An introduction to the Scaling Up Nutrition Movement. Scaling up Nutr Outl. 2014;(February):1–12.
3. Nutrition W. global movement to end malnutrition . 2013;(May).
4. Nutrition SUP. Effectively Engaging Multiple Stakeholders. 2014;(February):1–44.
5. FDR. NNP 1 ETH 2013 National Nutrition Programme (1)(1). Fed Democr Repub Ethiop [Internet]. 2015;(June 2013):1–48. Available from: <https://extranet.who.int/>
6. World Health Organization (WHO). A FRAMEWORK FOR IMPLEMENTING on the marketing of foods and non-alcoholic beverages to children. WHO Libr Cat Data. 2012;
7. TAKASAKI H, KANAMARU M. Cancer of the ascending colon. Vol. 10, Naika. Internal medicine. 1962. 324–328 p.
8. FAO, IFAD, UNICEF, WFP, WHO. The food and agriculture organization of the united nations: The state of food security in the world [Internet]. Food and Agriculture Organization of the United Nations. 2019. 212 p. Available from: <http://www.fao.org/publications>
9. Government of the Federal Democratic, Republic of Ethiopia. Government of the Federal Democratic Republic of Ethiopia: National Nutrition Programme. 2013;(August). Available from: [https://extranet.who.int/nutrition/gina/sites/default/files/ETH 2013 National Nutrition Programme.pdf](https://extranet.who.int/nutrition/gina/sites/default/files/ETH%2013%20National%20Nutrition%20Programme.pdf)
10. Kramer MS. Determinants of low birth weight: Methodological assessment and meta-analysis. Bull World Health Organ. 1987;65(5):663–737.
11. Leung BMY, Wiens KP, Kaplan BJ. Does prenatal micronutrient supplementation

- improve children's mental development? A systematic review. *BMC Pregnancy Childbirth*. 2011;11.
12. Central Statistical Agency [Ethiopia], ICF International. Ethiopia Demographic and Health Survey 2011. 2012;1–452.
 13. Ruff O, Neumann F. Nachtrag zu den Arbeiten Otto Ruff und Franz Neumann. Die Reduktion des Titantrichlorids und OTTO RUFF und RICHARD WALLSTEIN Die Reduktion des Zirkontetrachlorids. Vol. 130, *Zeitschrift für anorganische und allgemeine Chemie*. 1923. 324–324 p.
 14. wfp.org. The Cost of hunger in Ethiopia, The Social and Economic Impact of Child Undernutrition in Ethiopia Summary Report. 2009;
 15. Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet*. 2008;371(9608):243–60.
 16. Tesfa D, Tiruneh SA, Azanaw MM, Gebremariam AD, Engdaw MT, Kefale B, et al. Time to death and its determinants among under-five children in Sub-Saharan Africa using the recent (2010–2018) demographic and health survey data: country-based shared frailty analyses. *BMC Pediatr* [Internet]. 2021;21(1):1–11. Available from: <https://doi.org/10.1186/s12887-021-02950-3>
 17. Caulfield LE, de Onis M, Blössner M, Black RE. Undernutrition as an underlying cause of child deaths associated with diarrhea, pneumonia, malaria, and measles. *Am J Clin Nutr*. 2004;80(1):193–8.
 18. Liu W, He MZ, Dambach P, Schwertz R, Chen S, Yu F, et al. Trends of overweight and obesity among preschool children from 2013 to 2018: a cross-sectional study in Rhine-Neckar County and the City of Heidelberg, Germany. *BMC Public Health* [Internet]. 2022;22(1):1–8. Available from: <https://doi.org/10.1186/s12889-022-13302-w>
 19. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al. Global, regional, and national prevalence of overweight and obesity in children and adults

- during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014;384(9945):766–81.
20. Oti JA. Food Literacy and Dietary Behaviour among Day Students of Senior High Schools in Winneba, Central Region of Ghana. *J Food Nutr Res* [Internet]. 2020;8(1):39–49. Available from: <http://pubs.sciepub.com/jfnr/8/1/6>
 21. Kebede D, Ketsela T. Precursors of atherosclerotic and hypertensive diseases among adolescents in Addis Ababa, Ethiopia. *Bull World Health Organ*. 1993;71(6):787–94.
 22. Tebekaw Y. Rising Overweight-Obesity and Its Socio-Demographic Correlates in Addis The Rising Overweight-obesity and Its Socio-Demographic Correlates in Addis Ababa , Ethiopia , 2000-2011. 2013;(November 2014):2000–11.
 23. Tebekaw Y, Teller C, Colón-Ramos U. The burden of underweight and overweight among women in Addis Ababa, Ethiopia. *BMC Public Health*. 2014;14(1).
 24. CSA. Federal Demographic Republic of Population Projection of Ethiopia from 2014 – 2017: Population Projection of Ethiopia for All Regions At Woreda Level from 2014-2017. Cent Stat Agency. 2013;(August 2013):1–118.
 25. Institute EPH. Public Health Emergency Management. 2012. 2012;1–140.

Chapter Eight: Research Proposal for Malaria outbreak Investigation and risk factors assessment, at Mender 8/9, Catholic Church, Abobo district, Anuak Zone, Gambella, July/2023

Summary

Background: Plasmodium parasites, which are protozoan parasites, invade red blood cells and produce malaria, a lethal disease that affects humans. An outbreak of malaria occurs when there are more cases than would be anticipated at a particular location and period. Implementing an efficient early warning system for malaria outbreaks that can predict malaria incidence long before it occurs is one of the strongest approaches to lowering the number of deaths owing to the disease. Africa accounts for 94% of malaria cases that result in morbidity and mortality. One of the ten African nations contributing to these incidences is Ethiopia. 60% of Ethiopians live in places where they are at varying levels of danger from malaria. Seasonal outbreaks of malaria persist despite the tremendous advances made by the nation. Abobo woreda is a geographic area with a high risk of epidemics and a consistent rate of transmission. However, a malaria outbreak in the Abobo district that began around the 21st Epi week of 2022 triggered the inquiry during this season.

Methods: To set the epidemic threshold, the five years from 2017/2018 to 2021/2022 will be considered. By person, time, and location, a line list will be utilized to define the severity of the condition. The ratio of 1:2 case control studies was used to determine the largest calculated sample size for case and control, resulting in 78 and 155, respectively. The total sample size obtained was 86 for cases and 171 for controls, respectively, by adding a 10% non-response rate.

A review of the available literature will be done first, then a 1:2 unmatched case control study employing randomly selected case (86) and community control (172) will be done. The controls will be people who reside in the Catholic Church and Mender 8/9 Kebele and have not had malaria symptoms in the two weeks before the outbreak. Patients with RDT/microscopy-confirmed malaria who show symptoms during an epidemic but who don't show any symptoms or signs will be regarded as controls. The data will be evaluated using the statistical program for social science (SPSS) version 20 after being entered into Epi-data version 4.6 and collected using an interviewer-administered questionnaire. Multivariate and bivariate logistic regression is used to identify the factors that contribute to malaria transmission

Introduction

Background

Protozoan parasites of the genus *Plasmodium* are transmitted to humans by feeding on *Anopheles* mosquitoes and cause malaria, a serious and often fatal disease. The four *Plasmodium* species that transmit from person to person are *Plasmodium vivax*, *Plasmodium ovale*, and *Plasmodium falciparum*. A new species of *Plasmodium Knowlesi* was recently found in the forests of Southeast Asia. *Plasmodium vivax* is more common in Africa than elsewhere and is now responsible for the majority of malaria deaths worldwide, more than *Plasmodium falciparum* (1). Seasonal variation in malaria transmission is largely influenced by altitude and climate change (2).

A concerted effort involving governments, health care professionals, and communities must be made in order to raise awareness, improve prevention, and provide treatment for malaria on a global scale. This endeavor will cost billions of dollars. A number of intervention methods are recommended by The World Health Organization for the diagnosis, treatment, and prevention of malaria because it is preventable and treatable. Manufacturers sold 190 million ACTz, of which 183 million were given to medical professionals who treat malaria in public health facilities, and distributed 253 million ITNs for the prevention of malaria

globally. In 2019, 21.7 million children received at least one dose of SMC (3). Implementing an efficient malaria outbreak early warning system that can predict malaria incidence long before it arises is one of the essential solutions to minimizing the number of deaths attributed to the disease (4).

An outbreak of malaria occurs when there are more cases than would be anticipated at a certain location and time (2). The outbreak of malaria reported in the majority of areas was caused by a breakdown in surveillance, consistently low API, villages not covered by indoor residual spray, favorable weather conditions for vectors to grow quickly, an unusual and abrupt climatic change that caused a sudden increase in temperature, unusual rain that favored the breeding of the vector, and population movement from non-endemic to endemic areas. (5). One of the countries that contributed to 95% of malaria-related morbidity and mortality globally in 2019 (3) is Ethiopia. Out of the 845 districts in Ethiopia, 565 have various degrees of malaria risk and are home to 60% of the country's population (6, 7). Ethiopia's government has put in place policies combining monitoring, evaluation, and human resource development to fight malaria and decrease the suffering it causes (8). Ethiopia's National Malaria Strategic Plan (NMSP), which covers the years 2021-2022 and 2025-2026, also aims to consolidate and sustain notable decreases in morbidity and mortality directly associated with malaria in the country. The primary purpose of the NMSP is to develop a robust, rapid, and effective monitoring and response system.

Statement of the problems

In 87 countries and territories where malaria is endemic, 3.3 billion people live in regions where malaria transmission is possible. Malaria continues to be a significant cause of illness and mortality among children and adults in these areas. The diseases primarily affect underdeveloped tropical and subtropical regions of the world. Children under the age of five, pregnant women whose immunity has been weakened, In 2019, approximately 229 million cases and 409,000 deaths were recorded globally in the 87 countries where malaria is prevalent. WHO's 2019 malaria cases and fatalities were predicted to total 215 million worldwide, with 94% of those cases and deaths occurring in Africa. 67% of fatalities were in children under the age of five. (10). Unexpected global increases in the age-standardized incidence rate (ASR) of malaria were observed from 2015 to 2019(11). Recent malaria

epidemics in Sub-Saharan Africa are among the most critical of the difficult public health issues brought on by both natural and man-made factors. There have been numerous instances of ongoing, localized malaria epidemics(12).

But taking preventative measures is the best method to reduce mortality as well as disease rates. Families and communities continue to have misconceptions about malaria, which might compromise the effectiveness of the prevention measures used in national and international malaria control efforts. (13). When malaria reappears after being eradicated, a nation's economy and population face significant damages. (14). More than 90% of people in sub-Saharan Africa still live in areas where malaria is endemic, notwithstanding the declines in malaria morbidity and mortality in these nations. The high prevalence of *P. falciparum* in these Sub-Saharan nations necessitates the use of current information for planning, implementing, and monitoring global policy and malaria control programs. The fragility of the battle against malaria's hard-won victories is highlighted by the progress being made in places where incidence trends have plateaued or risen during the past five years (15). Numerous health care facilities routinely produce large amounts of data for the purpose of malaria surveillance, but these data have up until now been unsuitable for the epidemiological analyses needed to identify trends and variation in malaria incidence that would provide trustworthy indicators for the early detection of malaria epidemics. The creation of techniques to differentiate between "normal" and "abnormal" incidences of malaria in regions with a history of epidemics is necessary for determining malaria epidemic thresholds. The creation of methodologies to define thresholds is rarely met. (16). The use of this malaria epidemic definition in areas where they most likely had not happened limited earlier attempts to identify outbreaks (17).

The use of expensive interventions like indoor residual pesticide spraying in the highlands requires decision-making that is supported by indicators with sufficiently forecasting accuracy (18).

In Ethiopia, *Plasmodium falciparum* species predominate, accounting for more than 70% of all malaria cases, with *P. vivax* cases making up the remainder, which is similar to other African countries. Malaria's high transmission in Ethiopia occurs during two seasons that coincide with the growth season, which has a devastating socio-economic influence on the

nation's output and development. (19). The high prevalence of malaria episodes in Ethiopia places a considerable direct and indirect economic burden on rural households, particularly the poor, with the median cost of malaria per episode at the household level coming in at USD 5.06 (20). Attempts to prevent and control the disease are complicated by the coexistence of the common malarial species *P. falciparum* and *P. vivax* in Ethiopia. *P. falciparum*, which accounts for 70% of the species overall in Ethiopia, maintains a constant proportion over time (21). Ethiopia has been implementing a malaria prevention and control program for a number of years in order to prevent and control malaria, which is one of the main causes of mortality and morbidity in the nation. A national malaria elimination program was also launched in 2017 with the goal of eradicating local malaria transmission by 2030. Malaria incidence decreased from 32/1000 to 15/1000 between 2008 and 2011 EFY; however, it surprisingly increased to 28/1000 in 2012 EFY. The recent increase in the incidence rate in Ethiopia highlighted the lack of effective disease surveillance efforts (22). Regarding efforts to prevent and manage malaria, just 23% of households in the nation used IRS, while only 62% of households had at least one bed net. (21).

However, the Ethiopian Federal Ministry of Health (FMOH) recently stated its plans to eradicate malaria in low transmission areas of Ethiopia by 2020; unforeseen outbreaks are now irregularly happening in locations that were previously believed to be "malaria-free." Due to the lack of protection in these areas, malaria outbreaks have a serious impact on them. (23). A number of disease outbreaks have been reported in various low transmission and malaria-free regions of Ethiopia, which is in line with the program's objectives. A number of risk factors were connected to the most recent outbreak, which had a 1% attack rate in the Laelay Adyabo district of northern Ethiopia. These risk factors included spending the night outside, not wearing protective gear, and being ignorant of malaria. (24). Abay-Beshilo Basin of Simada District reported a high attack rate of 20% during a recent malaria outbreak in Northwest Ethiopia, which was attributed to a lack of knowledge about prevention, transmission, and control mechanisms, the failure to use insecticide-treated bed nets, the presence of breeding grounds adjacent to homes, and a lack of environmental control. (25). The Abobo District of the Gambella region is one of the endemic places recognized for the occurrence of malaria outbreaks for many decades. Malaria outbreaks, however, regularly happen in several districts of Ethiopia. As a result, unusual malaria cases were reported from

this endemic area of Mender 8/9 and Catholic Church clinics to the Abobo Health Office, Zonal Health Department, and Regional Health Office, respectively, in the beginning of the 21st Epi week of 2022. This study's objectives are to confirm the presence of a malaria epidemic, explain its impact, identify local malaria species, and identify associated causes of the outbreak in Mender 8/9, Abobo district of Anuak zone.

The significance of the study

Although malaria has always been common in this district, the current number of outbreaks shows an increase from the five-year average reports. The results of this study will provide important information regarding the predominant malaria parasite species associated with illness, attack rate by sex and age group, and factor associated with in Findings of entomological and environmental assessments will be useful for Abobo district, zone and other stakeholders.

Literature Review:

Malaria Outbreak

Since malaria epidemics are frequently abrupt and unplanned, effective preventative and control interventions must be targeted precisely in terms of both time and location. (26). Early detection systems' (EDS) capacity for malaria is essential for effective and fast epidemic containment. Systems for monitoring diseases effectively are a vital part of such capabilities. (18). Important information on the cause of the current infection must be gathered as part of the investigation into this pandemic, which includes asking the person who had the infection diagnosed to complete a standardized questionnaire. (2). WHO developed the key concepts and guidelines for building national capacity for the early detection and management of malaria epidemics between 1998 and 2003. An epidemic has started when the number of malaria cases surpasses or will exceed the capacity of the available healthcare systems to treat them. The cornerstone for EDS implementation should be an evaluation of the epidemic risk, the significance of an immediate response, and the availability of resources for an investigation. In the highlands of Ethiopia and Madagascar, where transmission is normally nonexistent, real malaria epidemics

have been observed. Since the impacted people lacked immunity and inadequate health services, they have been especially destructive

Socio-demographic factors

Numerous studies on the concomitant factors of the worldwide malaria outbreak revealed that a number of socioeconomic characteristics were among the factors contributing to malaria infection. Having children (AOR=4.32), working in security (AOR=4.46), and being unemployed compared to agricultural workers (AOR=2.25) were among the socio-demographic factors linked to the risk of malaria infection after the 2016 Southern African malaria outbreak, according to a study carried out in northern Namibia. (27). The age 15 years was shown to be the most significant risk factor for malaria infection during the outbreak, with an OR of 13.5 (P 0.01), according to another investigation and control of a *Plasmodium falciparum* malaria outbreak in Shan Special Region II of Myanmar (28). A study on the Mashonaland malaria epidemic investigation found that 60% (38/63) of cases were male. However, this study identified no statistically significant differences between cases and controls in the socio-demographic factors connected to infection. (30) In contrast, the study conducted in the Nwoya District of Northern Uganda revealed that women (AR = 8.1%) had a greater impact than men (AR = 4.7%) (P 0.0001). Ages 5 to 18 were the most affected overall (AR = 8.4%).(31).

According to epidemiological analysis of the malaria outbreak conducted in Ankesha District of the Awi Zone, Northern Ethiopia, the highest attack rate of this outbreak was among children, between the age groups of 5 and 14, with an 18/1000 attack rate. Additionally, the highest attack rate was among men, with a 53.3% higher rate than women. (32). The age group of 5 to 14 years and females were found to be more affected by the malaria outbreak in Workaye kebele of Sidama district, Northwest Ethiopia. (25). This finding was similar to the study in Awi zone by age group and divergence by gender.

Environmental and housing condition related factors

In the analysis of the malaria epidemic caused by the heavy rains, it was found that for a few days following the storm, 55% (59/107) of case-persons and 18% (19/107) of controls encountered standing water near their homes (ORM-H = 5.6, 95% CI = 3.0–11). (13).

In the analysis of the malaria epidemic caused by the heavy rains, it was discovered that for a few days following the storm, 55% (59/107) of case-persons and 18% (19/107) of controls had standing water close to their houses (ORM-H = 5.6, 95% CI = 3.0–11). (31).

According to a systematic review of the investigation of the malaria outbreak in China, the malaria epidemic across the nation was attributed to climatic change (14%), three manmade breeding sites (43%), and the remaining three (3/7, 43%) were attributed to catastrophic events. (33). According to the results of an investigation of the malaria epidemic in the Riaba region of Bioko Island, the burden of malaria infection was attributed to a number of factors, most notably increasing rainfall and a significant number of anthropogenic anopheline breeding sites caused by building projects. (34).

In Mashonaland, East Zimbabwe's Mudzi District, open eaves on a home and proximity to a pool of stagnant water were shown to be two separate environmental and housing condition risk factors linked to malaria infection. (30). The findings of an investigation into a malaria outbreak in Zimbabwe showed that sleeping in a house with exposed eaves (OR: 2.97; 95% CI 1.44-6.16; p 0.01) and a house with poor construction (OR: 4.33; 95% CI 1.97-9.51; p 0.01) was a significant risk factor for developing malaria infection. (35).

The majority of outbreak investigations in Ethiopia found a connection between housing and environmental factors, such as the presence of waste collection materials at home (AOR = 0.25, 95% CI 0.11-0.61), the availability of mosquito breeding sites nearby (AOR = 9.08, 95% CI 3.6-22.93) (24), poor environmental control, and living in an unscreened house or window.

Individually relevant factors

A review of the literature revealed that a variety of factors were individually related to getting malaria. According to research on knowledge, attitudes, and practices among communities in Muleba district, north-western Tanzania, the use of insecticide-treated nets was found to be ineffective, and knowledge gaps regarding malaria transmission, symptoms, prevention, and control predisposed communities to malaria epidemics. (38).

According to the findings of the Malaria Outbreak investigation carried out in the Nwoya District of Northern Uganda, wearing full extremity-covering clothing in the evening (ORM-H = 0.30, 95% CI = 0.20-0.60) and sleeping under a long-lasting insecticide-treated net

(LLIN) 14 days prior to the onset of symptoms (OR = 0.43, 95% CI = 0.22-0.85) were among the protective factors for malaria infection. (31). A study conducted in a rural area of southern Zimbabwe found that spending the evenings outside (OR: 2.24; 95% CI: 1.04–4.85; $p = 0.037$) and closing eaves (OR: 0.45; 95% CI: 0.20–1.02; $p = 0.055$) were among the factors that were revealed to be independently connected with malaria infection. (35).

Studies on malaria outbreaks in Sub-Saharan African countries and Ethiopia discovered independent associations between malaria infection and factors like poor use of insecticide-treated bed nets, a lack of indoor residual spray, sleeping outside of their homes at night, inadequate knowledge of malaria transmission, a lack of waste collection materials nearby, and staying outdoors overnight. (24).

Conceptual Frame work

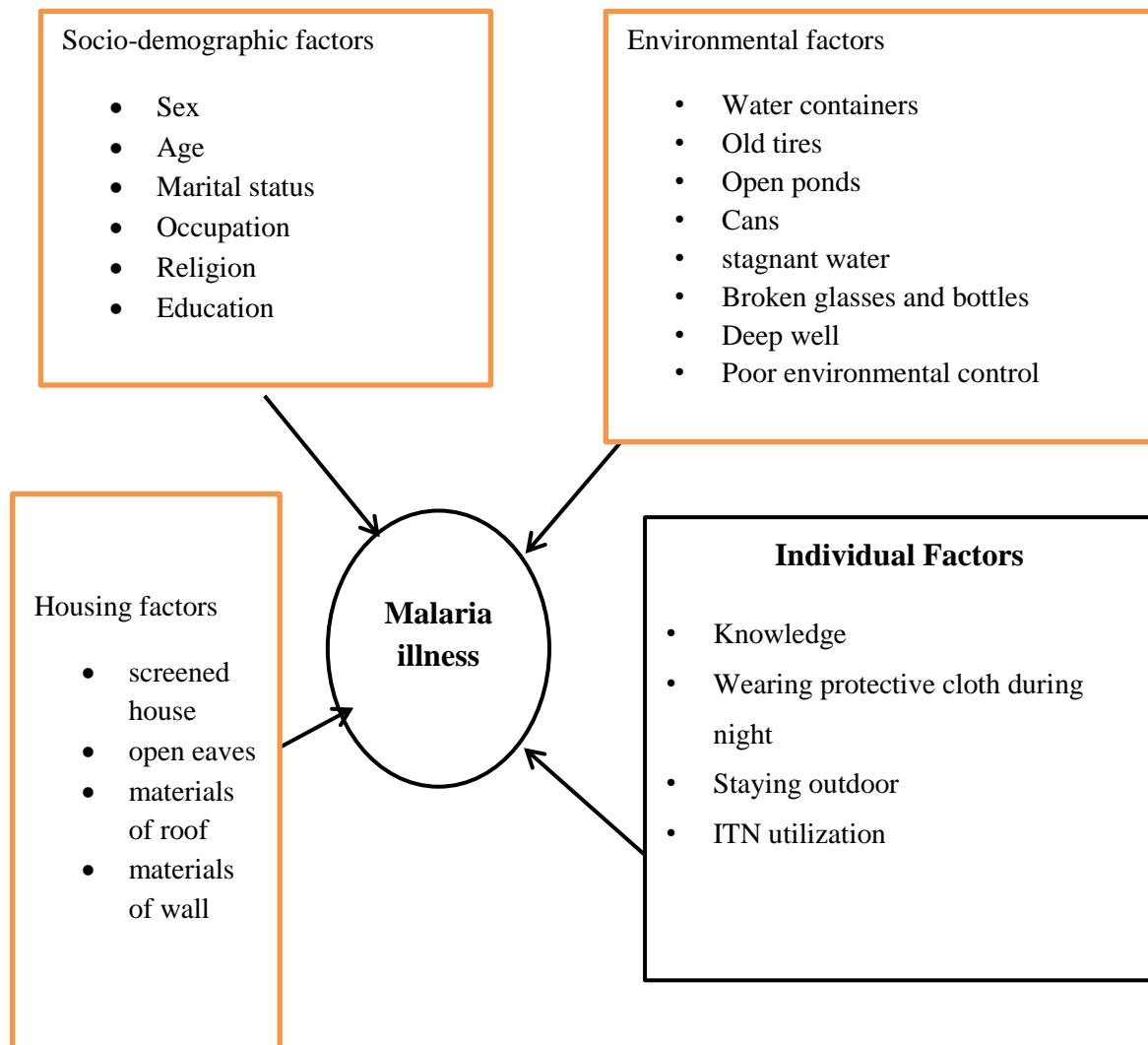


Figure 41 Conceptual frame work developed from several literatures of malaria outbreak and contributing factors, July 2023.

Objectives

General objective

To determine the severity of the malaria epidemic's morbidity and mortality and investigate potential factors in the Abobo Districts of the Gambella Region in September 2022.

Specific objectives

- ❖ To verify the existence of a malaria epidemic in the Mender 8/9 kebele of the Abobo district,
- ❖ To describe the extent and distribution of morbidity and mortality attributable to the current outbreak by person, place, and time, and
- ❖ To identify the malaria species that is causing the epidemic in Mender 8/9 and the Catholic Church,
- ❖ To identify risk factors associated with malaria epidemic in mender 8/9 and Catholic Church kebele

METHODS AND MATERIALS

Study Area and period.

This study will be carried out In mender 8/9 and the Catholic Church of Abobo District, one of the woredas in the Anuak zone of the Gambella Region of Ethiopia, .It is one of the three zones that made up the Gambela region was Administrative Zone 2. South Sudan and the Southern Nations, Nationalities, and Peoples Region bordered this area on the south; Administrative Zone 3 on the west; Administrative Zone 1 on the north; and Godere special woreda on the east. To Anuak Zone, it was added. Abobo and Fugnido were two of the towns in this area.

Rivers in this Zone include the Alwero and the Gilo; major bodies of water include Lakes Alwero and Tata. A notable landmark is the Gambela National Park, which occupies the land west of the Fugnido-Gambella road and north of the Gilo. Based on figures from the Central Statistical Agency in 2005, this zone has an estimated total population of 48,084, of whom 23,235 are men and 24,849 are women; 4,935 or 10.3% of its population are urban dwellers.

With an estimated area of 13,142.51 square kilometres, this zone has an estimated population density of 3.66 people per square kilometre..

The total population of this Zone is 36,199 in 4,075 households, of whom 17,463 were men and 18,736 women; 2,869 or 7.93% of the population were urban inhabitants. (This total also includes an estimate for two kebeles in Gog woreda and four in Jor, which were not counted; these areas were estimated to have 5,562 inhabitants, of whom 2,566 were men and 2,996 women.) The five largest ethnic groups of Zone 2 were the Anuak (72.65%), the Kambaata (9.17%), the Amhara (6.22%), the Oromo (3.35%), and the Mezhenger (3.14%); all other ethnic groups made up 5.47% of the population. 72.71% of people speak Anuak as their first language, followed by 9.34% who speak Kambaata, 6.61% who speak Amharic, 3.12% who speak Majang, and 3.06% who speak Afan Oromo. The remaining 5.16% spoke all the other primary languages that were listed. 38.52% of the population reported that they were Protestant, followed by 20.68% who said they were Ethiopian Orthodox Christians, 13.95% who practiced traditional religions, 6.49% who considered themselves Muslims, and 5% who recognized themselves as Catholic. Abobo, which has a zero-meter height (zero feet) above sea level, experiences tropical wet and dry, or savannah, weather.. The district's average annual temperature is 10.15% higher than Ethiopia's averages at 32.38 °C (90.28 °F). Due to the district's favourable climate for mosquito development, prophylactic measures are crucial to reducing the risk of catching the disease. This study will be carried out from May 1 to July 30, 2023.

Study Design- An unmatched case-control study will be conducted.

Source population -The study's source will be all residents of Mender 8/9 and the Catholic Church in the Anuak zone, Abobo district.

Sampling unit

The sampling units for the study will be all populations in Mender 8/9 and Catholic Church kebeles, including those with and those without malaria, regardless of age, gender, sex, religion, ethnicity, and educational level and religion will serve as a sampling unit in our research.

Study unit: Respondents chosen at random from the community who meet the criteria for the "case" and "control" cases make up the study unit.#

Criteria for inclusion and exclusion

Inclusion Criteria: For "control," any person living in a neighboring home of a case who has not shown any symptoms of malaria in the past two weeks and has not been registered as a case or treated as one during the epidemic period will be considered a "case." This includes residents of the villages of Mender 8/9 and Catholic Church Kebeles.

Exclusion: People who did not reside in the villages of Mender 8/9 and Catholic Church in the previous two weeks, those who are seriously ill and are unable to respond effectively, and those who are mentally retarded on an individual basis will be excluded.

Estimating the sample size

Using the EPI-Info statistical tool, the sample size was estimated by taking into consideration the assumptions of a 95% confidence interval, an 80% power, a 5% threshold of significance, and a 1:2 case-control ratio. The number of cases exposed and the number of controls exposed will be determined using a variety of characteristics or variables from various pertinent research studies. The ultimate sample size of the study was then determined by the characteristics or factors that produce a high number of samples.

Table 32 Sample size estimation by different factors from previous relevant factors, Abobo district, Agnuak zone, Gambella, West Ethiopia, Ethiopia, 2023

SN	Relevant Factors	% of cases exposed	% of controls exposed	OR	Sample of cases	Sample of control	Ref.
1	Overnight Staying outdoor	46.7	14.2	5.3	26	52	(24)
2	Sleeping outside during night	57.6	76.9	2.48	78	155	(40)
3	Absence of Environmental control	79.6	46.3	4.54	29	58	(25)

The largest calculated sample size for case and control 78 and 155 respectively by ratio of 1:2 was taken. By adding 10% non-response rate the final generated sample size was 86 and 171 respectively for cases and controls.

Sampling procedure

Case will be any person from registered line list which will be used as sampling frame to select our study unit. All cases registered will be categorized by their village (Small administrative group of the kebele) to give equal chance for all household in the village from which cases were registered.

Controls will be any person from next neighbor house of selected case who has no sign and symptoms of malaria during epidemic will be selected. In case when selected person is below eighteen years parent or care givers will be interviewed.

Study variables

Dependent variable

- Malaria illness

Independent variables

Socio-demographic factors: Age, Sex, Occupation, Educational status, Family size.

Environmental factors: Presence of unprotected dam for irrigation, screened house, sprayed house, ownership/presence of ITNs, Presence of stagnant water near home, presence of intermittent rivers near dweller, Sleeping outdoors, Staying outside overnight, Types of house.

Individual factors: Knowledge about malaria transmission, prevention and control, Travel history, Presence of malaria case in households, wearing protective clothing.

Operational definition and definition of terms

Malaria outbreak: When the number of reported malaria cases in a given week exceeds a predetermined threshold and is the second-highest number in the same weeks over the most recent five years.

Wearing Protective Clothes: Respondents who wore clothing that covered their extremities at night

Stagnant water near home: standing or immobile water within one kilometer of a respondent's residence qualifies as stagnant water.

Mosquito Breeding sites: for mosquitoes include stagnant water, open manmade water containers, unprotected irrigation, and the presence of ponds and tick grass.

Staying outdoors overnight: A person who spends more than six hours outside at night is said to be outdoors overnight.

Defining a case

Community case Definition: Any person with a fever OR a fever together with headache, back pain, chills, rigor, sweating, muscle pain, nausea, or vomiting; OR a suspected case that has been verified by RDT.

Standard case definition: Any person who has been clinically diagnosed with malaria and has a fever or fevers along with headache, rigidity, back pain, chills, sweats, myalgia, nausea, or vomiting.

Suspected case: A patient who has a fever or a recent history of fever, lives in a location where malaria is common, or has traveled in the past 30 days to an area where malaria is common.

Probable: Somebody with a fever and one or more of the clinically recognized symptoms of malaria, such as headache, rigidity, back pain, chills, sweats, myalgia, nausea, and vomiting, is considered probable.

Confirmed: Any suspected case that has plasmodium parasites found by microscopy or RDT.

Data collection tool and procedure

In order to gather data on socio-demographic traits, clinical presentation (for cases only), potential risk factors, and knowledge of malaria transmission, prevention, and control from both cases and controls, an interviewer will administer a structured questionnaire that has been adopted from prior relevant studies. Regardless of their age, sex, educational background, or ethnicity, the data was directly gathered from cases and controls. If the recruited respondent is a child under the age of 18, their parents and caregivers will be questioned.

Environmental assessment

Selected respondents will be questioned about the existence of stagnant water within a 1-kilometer radius of their homes. During the data collection period, the presence of any artificial breeding site, such as exposed water containers, immobile water containers, shattered glass, ponds, and old trays, will be evaluated simultaneously.

Quality control

Participants in the inquiry will receive a half-day of training on the ethics of interviews, how to recruit cases and controls, and the components of the data collection instrument. To characterize the scope of the epidemic in terms of people, places, and times, a pre-registered line list will be used. The accuracy of the data will be reviewed before analysis.

Data processing and analysis

Before the analytical investigation, the data on the line list will be examined for completeness. They will then be coded, entered into Epi-info version 7, cleaned, and transferred to SPSS version 20 for analysis. With the help of projected malaria statistics for 2020–21GC, the rate of infection will be computed. Using descriptive statistics like frequency, percentage, ratio, and proportion, descriptive epidemiology will describe the severity of this pandemic by age, sex, kebele, and species of infection. Both bivariate and multivariate logistic regression will be used for the analytical analysis. One independent variable and one dependent variable will be the subjects of a bivariate logistic regression study to find potential candidates for inclusion in a multivariate logistic regression analysis with a P-value of less than 0.25. The adjusted odd ratio (AOR) and 95% confidence interval will be utilized to identify variables (factors) related to the malaria outbreak in the multivariable logistic regression model. Hosmer and Lemeshow goodness of fit will be used to assess the final model's goodness of fit. If the P-value is less than 0.05, the final statistical significance of the variables entered in the multivariable logistic regression will be declared. The final study report will be presented as text, graphs, tables, and frequencies.

Ethics-related issues

Abobo Woreda Health Office will get an official letter from EPHI that will first be sent to the Gambella regional health bureau. The Woreda health office will issue a letter of authorization

for the investigation of an epidemic in Mender 8/9 and the Catholic Church of the Abobo District. The study participant will receive a thorough explanation of the investigation's goals in their own language.

Distribution of the research

The investigation's findings will be delivered in hard copy and electronic form to Addis Ababa University's School of Public Health and Department of Epidemiology and Biostatistics. Once more, it will be sent to the regional health bureau in Gambella as well as the Abobo woreda health office.

Table 33 Schedule to investigate malaria outbreak and contracting factors in Abobo District, Anuak zone, Gambella, 2023

SN	Activities	May	June	July
1	Establishing a team and getting ready for fieldwork			
1	Verification of the Outbreak			
2	Writing proposals			
3	submission of a proposal			
4	Submission of a first and second draft			
5	Data gathering and processing (case definition and identification)			
6	carrying out descriptive epidemiology			
7	Develop, evaluate, and refine hypotheses			
8	Measures to prevent or recommendations in response			
9	Announcing and disseminating the outcome			

Table 34 Budget break down to investigate malaria outbreak and contracting factors in in Abobo District, Agnuak zone, Gambella, 1-May to 30-July/2023

Cost of Stationaries and printing materials						
No	Description/Items	Unit	Quantity	Unit Price	Total price	Budget source
1	Note book	Pad	10	20	200	EPHI
2	Pen	Each	10	10	100	EPHI
3	Computer paper/A-4	Pack	2	250	500	EPHI
4	Photocopy (proposal, questionnaires, final result)	Each	Questionnaires =7*250 Final result=100*2 Total= 1,950 pages	1	1,950	EPHI
Sub-total					2,750	
Personnel cost						
No	Reasons/Items		#Estimated days	Estimated price per day	Total price	Source
1	Training for data collectors and supervisors		1	350*4	1,400	EPHI
3	Payment for data collectors = 20 ETB per questionnaire		-	250*20	4,940	EPHI
4	Per-dium for supervisors		5	350*2= 700	3,500	EPHI
5	Mobile card for data collectors and supervisors = 50*8= 400		-	-	400	EPHI
6	Fee for Transportation (six participants)		5	(5*200)*6	6000	EPHI
Sub-total					16,240	EPHI
Total costs= A+B =2,750 + 16,240 =					18,990	EPHI
Contingency = 10%* 18,990					1,899	EPHI
Grand total= Total cost + Contingency					20,889	EPHI

References

1. WHO. Guidelines for the treatment of malaria. Vol. 3, Letters in Applied Microbiology. Geneva; 2015. 1–115 p.
2. WHO. Disease surveillance for malaria control: an operational manual. Geneva, World Health Organization; 2012.
3. Organization WH. World malaria report 2020: 20 years of global progress and challenges. Geneva; 2020.
4. Nkiruka O, Prasad R, Clement O. Prediction of malaria incidence using climate variability and machine learning. *Informatics Med Unlocked* [Internet]. 2021;22(January):100508. Available from: <https://doi.org/10.1016/j.imu.2020.100508>
5. Biomedicine T. Malaria outbreak in a non endemic tribal block of Balasore district , Orissa , India during summer season. 2012;29(2):277–85.
6. Initiative P (Precedent M. Ethiopia Malaria Operational Plan FY 2019- President’s Malaria. 2019.
7. Bugssa G, Tedla K. Feasibility of Malaria Elimination in Ethiopia. *Ethiop J Health Sci.* 2020;30(4):607–14.
8. Ayele DG, Zewotir TT, Mwambi HG. Spatial distribution of malaria problem in three regions of Ethiopia. *Malar J* [Internet]. 2013 Dec 17;12(1):207. Available from: <https://malariajournal.biomedcentral.com/articles/10.1186/1475-2875-12-207>
9. Ethiopian Federal Ministry of Health. Ethiopia Malaria Elimination Strategic Plan 2021-2025 2. 2021. p. 1–5.
10. Mbanefo A, Kumar N. Evaluation of Malaria Diagnostic Methods as a Key for Successful Control and Elimination Programs. *Trop Med Infect Dis.* 2020;
11. Liu Q, Jing W, Kang L, Liu J, Liu M. Trends of the global , regional and national incidence of malaria in 204 countries from 1990 to 2019 and. *J of Travel Med.* 2021;1–12.
12. Bhan S, Sharma AK, Thomas TG, Singh R. Entomological assessment of malaria outbreak in Bareilly and Budaun districts of Uttar Pradesh , India. *Int J Mosq Res.* 2020;7(5):53–9.
13. Kumar D, Singh S, Kumar A, Kishore A, Kashyap V. A comparative study of

- epidemiological investigations of malaria outbreaks and related deaths in two districts of Jharkhand during the same prewinter season using shoe-leather epidemiology. *J Fam Med Prim Care* [Internet]. 2017;6(4):744. Available from: <http://www.jfmprc.com/article.asp?issn=2249-4863;year=2017;volume=6;issue=1;spage=169;epage=170;aulast=Faizi>
14. Nasir SMI, Amarasekara S, Wickremasinghe R, Fernando D. Prevention of re-establishment of malaria : historical perspective and future prospects. *Malar J* [Internet]. 2020;1–16. Available from: <https://doi.org/10.1186/s12936-020-03527-8>
 15. Weiss DJ, Lucas TCD, Nguyen M, Nandi AK, Bisanzio D, Battle KE, et al. Mapping the global prevalence , incidence , and mortality of *Plasmodium falciparum* , 2000 – 17 : a spatial and temporal modelling study. *Lancet* [Internet]. 2019;394(10195):1–10. Available from: [http://dx.doi.org/10.1016/S0140-6736\(19\)31097-9](http://dx.doi.org/10.1016/S0140-6736(19)31097-9)
 16. Jean-Olivier Guintran, Delacollette C, Trigg P. Systems for the early detection of malaria epidemics in Africa. 2006;1–100. Available from: <http://www.li.mahidol.ac.th/thainatis/pdf-ebook/ebook77.pdf>
 17. McKelvie WR, Haghdoost A, Raeisi A. Defining and detecting malaria epidemics in south-east Iran. *Malar J* [Internet]. 2012;11(1):81. Available from: <http://malariajournal.biomedcentral.com/articles/10.1186/1475-2875-11-81>
 18. Abeku TA. Response to Malaria Epidemics in Africa. *Emerg Infect Dis* [Internet]. 2007 May;13(5):681–6. Available from: http://wwwnc.cdc.gov/eid/article/13/5/06-1333_article.htm
 19. Dillu D, Tesfaye G, Control M. Federal Democratic Republic of Ethiopia Ministry of Health National Malaria Elimination Roadmap. 2020;(July).
 20. Hailu A, Lindtjørn B, Deressa W, Gari T, Loha E, Robberstad B. Economic burden of malaria and predictors of cost variability to rural households in south-central Ethiopia. Carvalho LH, editor. *PLoS One* [Internet]. 2017 Oct 11;12(10):e0185315. Available from: <https://dx.plos.org/10.1371/journal.pone.0185315>
 21. Taffese HS, Hemming-schroeder E, Koepfli C, Tesfaye G, Lee M, Kazura J, et al. Malaria epidemiology and interventions in Ethiopia from 2001 to 2016. *BMC Infect Dis Poverty*. 2018;7(103):1–9.
 22. Ethiopian Federal Ministry of Health. 2013EFY Annual Performance report of the Ethiopian Health Sector. 2020.

23. Vajda É, Webb C. Assessing the Risk Factors Associated with Malaria in the Highlands of Ethiopia: What Do We Need to Know? *Trop Med Infect Dis* [Internet]. 2017 Mar 1;2(1):4. Available from: <http://www.mdpi.com/2414-6366/2/1/4>
24. Tesfahunegn A, Berhe G, Gebregziabher E. Risk factors associated with malaria outbreak in Laelay Adyabo district northern Ethiopia, 2017: Case-control study design. *BMC Public Health*. 2019;19(1):1–7.
25. Workineh B, Mekonnen FA, Sisay M, Gonete KA. Malaria outbreak investigation and contracting factors in Simada District, Northwest Ethiopia: A case-control study. *BMC Res Notes* [Internet]. 2019;12(1):1–6. Available from: <https://doi.org/10.1186/s13104-019-4315-z>
26. Cox J, Abeku TA. Early warning systems for malaria in Africa: from blueprint to practice. *Trends Parasitol* [Internet]. 2007 Jun;23(6):243–6. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S1471492207000803>
27. Smith JL, Mumbengegwi D, Haindongo E, Cueto C, Roberts KW, Gosling R, et al.
36. Defi GB, Belachew A, Addissie A, Hailemariam Z. A Malaria Outbreak in Ameya Woreda , South-West Shoa , Oromia , Ethiopia , 2012 : Weaknesses in Disease Control , Important Risk Factors. *Am J Heal Res*. 2015;3(3):125–9.
37. Tesfay K, Assefa B, Addisu A. Malaria outbreak investigation in Tanquae Abergelle district , Tigray region of Ethiopia : a case – control study. *BMC Res Notes* [Internet]. 2019;12(645):1–5. Available from: <https://doi.org/10.1186/s13104-019-4680-7>
38. Kinung’Hi SM, Mashauri F, Mwanga JR, Nnko SE, Kaatano GM, Malima R, et al. Knowledge, attitudes and practices about malaria among communities: Comparing epidemic and non-epidemic prone communities of Muleba district, North-western Tanzania. *BMC Public Health*. 2010;10:1–11.
39. Gerachew YW, Getayenew AT, Ayenew ML TY. Malaria Outbreak Investigation in Argoba District , South Wello Zone , Northeast Ethiopia , 2016 : A case control study. *BMC Infect Dis Poverty*. 2016;1–17.
40. Debela MB, Kahsay AB, Mokonnnon TM. Malaria outbreak and contracting factors in Afar. *J Public Heal Epidemiol*. 2018;10(July):233–40.

Chapter Nine: Additional out puts

9.1 Bulletin presentation of Malaria Outbreak Investigation and Response Activities as a Final Report, Gambella Region, August 2022

Introduction

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. It is preventable and curable. Malaria is caused by Plasmodium parasites. The parasites are spread to people through the bites of infected female Anopheles mosquitoes.

Gambella region is a malaria hot spot area that is affected repeatedly by malaria episodes. Depending on the residual life of the insecticide used and the timing of spray operations, one spray round per year could give the required protection against malaria.

As a component of universal health coverage, ensure access to malaria prevention, diagnosis, and treatment (Pillar 1)

Accelerate efforts to eradicate malaria and achieve this status (Pillar 2).

Turn malaria surveillance into a crucial intervention, in accordance with Pillar 3.

Objective

General Objectives •

To determine the source that caused outbreak and provide a solution for the case.

The specific objectives

To determine what caused the outbreak of malaria,

To evaluate risk factors, take action, and

To identify mosquito species that cause outbreak.

Methods and Material

Assessment Area: This Assessment was conducted at Gambella regional state at purposively selected woredas. The Gambella region is located in the south-western part of Ethiopia and borders two other regions: Oromia to the North and east, the Southern Nations, Nationalities, and Peoples' Regional State (SNNPR) to the south, and the country of South Sudan to the west. The region accommodates three zones: one administration town, one special woreda, 12 woredas, and 265 kebeles. The 2021/22 population of the region is estimated at 609,854. The region is currently hosting an estimated 344,972 Sudanese refugees (UNHCR), which is nearly equivalent to its host population. In the region, there are 1 general hospital, 4 primary hospitals, 29 health centers (including 1 NGOHF), and 140 HPs.

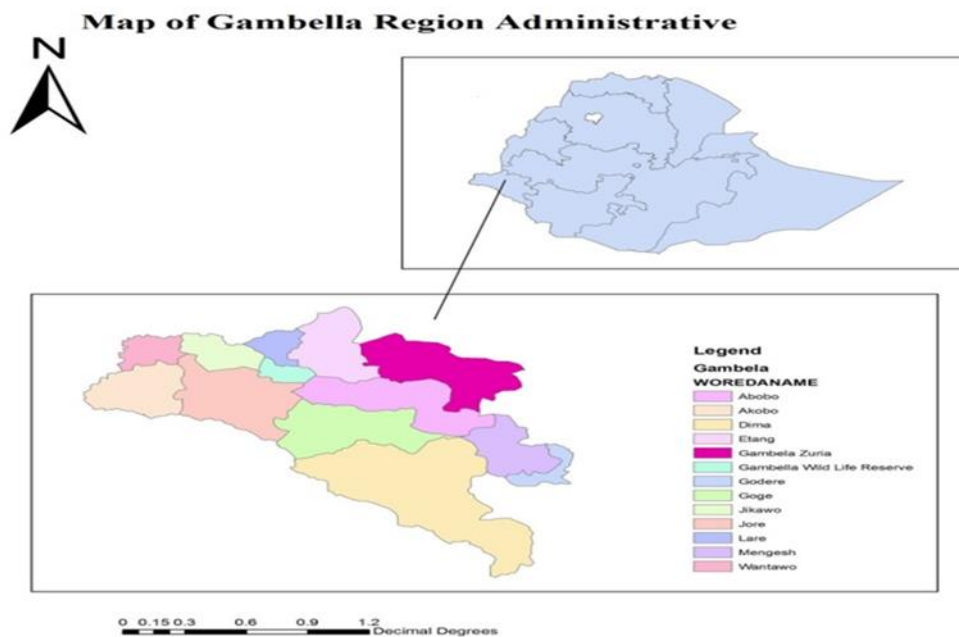


Figure 42 Map of the study area, Abobo District, Gambella, August 2022

Method of assessment

A Rapid Response Team consisted of two Field Epidemiology Residents and an Entomologist was deployed from EPHI and jointly coordinated with the RRT from Gambella Region PHEOC. Outbreak investigation and response was conducted in August 2022, in

Gambella Region. On our arrival, the objective of the outbreak investigation and response briefed to all with the presence of regional PHEM Directorate director. Discussion was held with the GPHEOC team, surveillance focal/Officer and malaria focal. Four Woredas (Abobob, Mengeshi, Lare and Gambella city Administration) were purposively selected based on the prevalence of malaria cases for an in-depth assessment. Health centers and posts including mosquito breeding sites were assessed using checklist and observation. For IRS coverage and ITN utilization assessment, 90 households were randomly selected from three woredas. We also reviewed the preparedness and surveillance system in these selected Woredas and Health centers.

Results/Findings

Malaria situation analysis

From weeks 27–30, 2022, there were a total of 18,467 cases of malaria and four deaths with a CFR of 0.02%. This was higher by more than threefold compared to 5,478 cases and zero deaths during the same epi-week in 2021. Out of 18,467 cases, the majority of the cases—16,839 (91%)—were PF (Figure 2). Out of 18,467 cases, 11,741 (64%) were reported from six Woredas (Abobo, Gambella Town, Mengeshi, Dima, Godere, and Lare). All deaths were reported in Lare Woreda

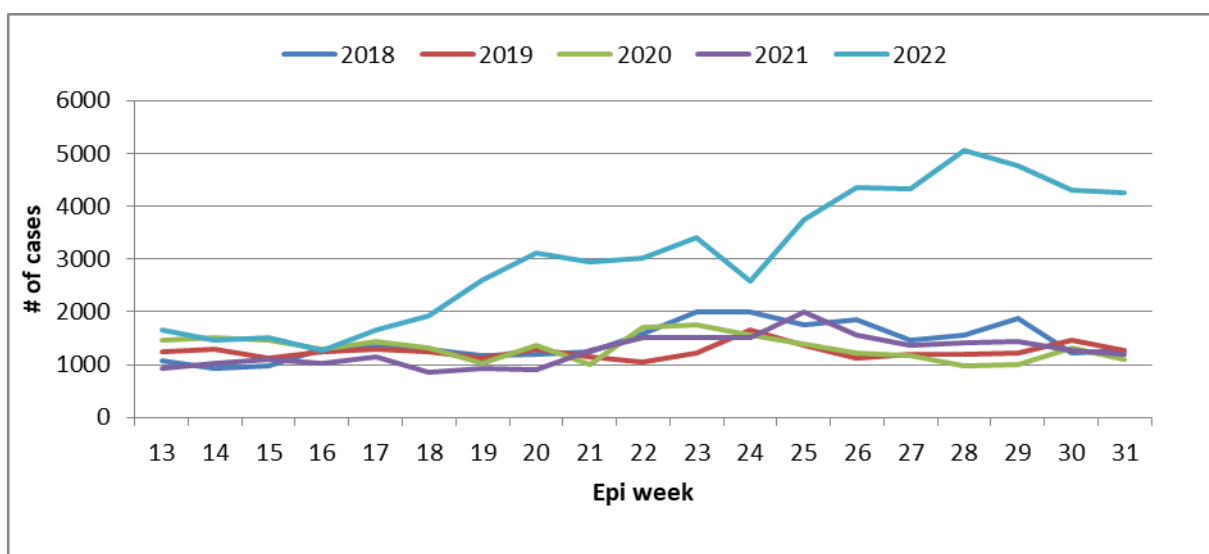


Figure 43 Trends of Malaria from week 13-31, 2018-2022 (five years), Gambella, August 2022.

Data Validity:-Malaria data that were reported from WoHO were almost the same both at Regional and Woreda Health office levels, except in Lare Woreda, where no compiled data were available at woreda level. Malaria data reported from Lare Woreda to the regional data center were few in number compared to other Woredas (Table 1). On the contrary, there were deaths due to malaria in the woreda. From this, it is obvious that the surveillance system of the Woreda was unable to detect the outbreak.

Table 35 Malaria data validity at regional and district level, Gambella, August 2022.

Week	Abobo Woreda data at HO	Abobo WoHO Data at Woreda	Mengeshi Woreda Data at	Mengeshi WoHO at WoHO	Gambella town data at regional	Gambella town data at	Lare WoHO data at	Lare WoHO data at HO
15	50	50	234	234	214	212	56	No data
16	51	51	173	173	214	213	47	>>
17	148	548	206	206	213	213	61	>>
18	137	137	299	299	262	260	51	>>
19	208	207	271	271	623	620	50	>>
Total	615	615	1183	1183	1521	1518	265	>>

Possible cause of the Outbreak

Irregular rainfall and flooding:-The unseasonal and interrupted rain that happened in recent times has created many breeding sites and made prevention and control activities difficult. Due to the rain, flooding happened in many woredas, but it was most prevalent in Lare, Gambella Town, and Abobo Woredas. Due to the landscape of the region, it is difficult to drain the stagnant water in most parts of the region.

Indoor Residual Spray (IRS) Coverage

A rapid assessment was conducted to evaluate the IRS coverage in purposively selected villages from 4 Woredas in relation to the achievement of the target set by Woredas. As per the plan of the districts, the IRS coverage was more than 100%. But in the assessment, it was found that out of 90 houses, 59 (65%) were covered by the IRS. For instance, in Gambella

Town, only 18 (48.7%) zones were covered by the IRS out of 37 zones. Hence, IRS coverage should be revised.

Impregnated and Treated Nets (ITN) utilization

Out of 90 HHs with a total of 357 family members, 43 (48%) had ITN. There were a total of 111 ITN in these 43 households, ranging from 1-4 ITN per household. From the total of 357 assessed family members, 132 individuals had a history of malaria. Out of 132 individuals who had malaria, 51 (38.6%) were from those who had ITN, while 81 (61.4%) were from those who had no ITN.

Environmental Management

Environmental management plays a key role in the prevention and control of malaria. Out of 16 inspected mosquito breeding sites, six (37.5%) were managed with chemicals and by mobilizing the community. It has been found that most of the identified breeding sites were difficult to manage and drain because of the landscape.

Awareness

From 90 households that were asked about malaria, 80 (88%) of them answered that malaria can be transmitted through a mosquito bite. 60/90 (66.7%) individuals said that malaria will transmit through contact with an ill person, and 6/90 (6.7%) believe that malaria can transmit through the air. All respondents answered that malaria is preventable.

Table 36 Findings of the Assessment for IRS coverage and bed net utilization in different villages of Some woredas in Gambella region, August 2022.

S/N	Zone	Woreda	villages	HH	#Family	IRS Coverage	ITN Utilization			
							Yes		No	
							ill	Not ill	ill	Not ill
1	Anuak	Abobo	Mender 7	20	72	45	6	50	13	3
2	Nuer	Lare	Kuarengugn	30	105	100	32	42	30	1
3	Gambella	Gambella town	Genet sefer	22	84	41	08	36	28	12
4	Gambella town	Gambella town	Village 9	18	96	89	5	71	10	10
	Total			90	357	68.8	51 (20.4)	199 (79.6)	81 (76%)	26 (24%)

Surveillance

Malaria is an endemic disease in the Gambella Region. The outbreak was detected based on thresholds. Data management activities were found to be good in most assessed health facilities (7 out of 8 health facilities), except in Lare Woreda, where data management was poor at the HC level. The Regional Reporting timeliness and completeness of malaria data were above the expected level (80%). As of August 2, 2022, 3,070 malaria cases were line-listed through an active case search.

Laboratory Surveillance

Regarding laboratory investigations and RDT, all assessed health facilities conduct microscopic examinations and sometimes RDT for malaria diagnosis. RDT was conducted at the health center level due to a shortage of power and a high case load during the outbreak. There was adequate laboratory supply except for Giemsa stain supply interruptions during the outbreak. Out of eight health centers, one had poor data handling practices.

Assessed Health Facilities

From the assessment, it has been evident that there were non-functional health posts; for instance, in Lare Woreda, out of 11 HP, there were 4 non-functional health posts. The reason behind this was the lack of the infrastructure. Those functional health posts also didn't serve the community as expected. Even though there were more than 70 HEW in the Woreda, the surveillance system was poor enough to detect the outbreak. In this assessment, 5 Woreda Health Offices, 1 Hospital, 7 Health Centers, and 9 Health Posts were assessed.

Table 37 Lists of Assessed Health Facilities, Gambella, August 2022.

S/N	Woreda health office	Hospitals	Health centres	Health post
1	Gambella Town	Gambella primary Hospital	- Dozer Olami	-
2	Abobo	-	- Catholic HC	04
3	Mengeshi	-	- Village 8&9 HC	-
4	Lare	-	- Mission HC	04
5	Itang	-	- Kuergagn HC	01

Entomological Survey

An entomological assessment was conducted to identify mosquito species and prevalence. Based on larval density and the HLC aspirated method, there has been a High Prevalence of Anopheles mosquito larvae in Gambella City and Abobo Woreda, known breeding sites. There were high numbers of larvae in rainy swampy pools (11 larvae per dip), pools at river edges (7 larvae per dip), and drinking water holes (3 larvae per dip) at Abobo. A total of 1921 late-instar Anopheles were collected. In the assessment of Woredas, mosquito breeding sites were identified, and appropriate measures have been taken to manage the environment. Contrary to popular belief, no breeding sites were identified in Gambella Town. Major problems were solved by the supporting team.

Sensitization of surveillance at the health center level

Active surveillance and outbreak investigation in two woredas, Abobo and Lare active case search in Abobo and Lare Woreda

Identification of breeding sites and larvae collection

Onsite data management sensitization

Functionalizing Non-functional HPs,

Challenges

- Some of the HP were inoperable.

Flooding makes some areas difficult to assess

Recommendation

Gambella Region Health Bureau

Gambella Regional Health Bureau should revise its budget plan and submit it to MoH/EPHI for allocation of resources.

GRHB should focus on strengthening the malaria surveillance system, with particular emphasis on Lare Woreda.

GRHB should invite Partners to engage in malaria prevention and control activities.

IRS activities should be conducted in response to seasonal malaria outbreaks.

Woreda Health Office should address PHEM officers to strengthen the surveillance system, especially on data validity.

Environmental management should be conducted in areas where it is possible.

Community awareness should be enhanced in the way of prevention and control of malaria.

Emergency ITN distribution should be conducted in epidemic areas.

Periodic supervision and taking corrective measures are necessary to manage work absenteeism.

For MoH/EPHI

MoH/EPHI should support the region with finance and technique to strengthen the surveillance system and improve IRS coverage.

Supportive supervision after the response may help to evaluate the improvements.

Illustrative pictures, August 2022, Abobo District, Gambella.





References

1. Neeta Rai et al. Asian Journal of Biomedical and Pharmaceutical Sciences 2(12) 2012, 28-31
2. WHO World malaria *report*, 30 November 2020
3. The Potential Impact of Health Service Disruptions on the Burden of Malaria: A Modelling Analysis for Countries in Sub-Saharan Africa 1–44 (WHO, 2020); <https://www.who.int/publications-detail/the-potential-impact-of-health-service-disruptions-on-the-burden-of-malaria>
4. Ministry of Health. An epidemiological profile of malaria in Ethiopia. Addis Ababa, 2014.
5. U.S. President’s Malaria Initiative Ethiopia Malaria Operational Plan FY 2020.
6. WHO. Global technical strategy for malaria 2016–2030. 2016;

9.2. COVID-19 Data Regeneration Bulletin Report, at Tikur Anbessa Specialized Hospital (TASH), November 20, 2021

Contents-

- Introduction
- Objective
- Activity Report
- Gaps
- Next step

Introductions

The world is in the midst of a COVID-19 pandemic. As WHO and partners work together on the response, tracking the pandemic and advising on critical supplies for those in need They are racing to develop and deploy a safe and effective vaccine.

Objectives

To regenerate the data and fill the national set for COVID-19 and mortality and morbidity records, to improve reporting performance and to strengthen daily data recording and reporting to responsible or related stakeholders

Key messages

As of 15 November 2021, WHO has evaluated that the following vaccines against COVID-19 have met the necessary criteria for safety and efficacy-AstraZenca/Oxford vaccine, Johnson and Johnson, Moderna, Pfizer/Bion Tech, Sinopharm, Sinovac and

COVID-19 has had devastating impacts ever since its occurrence on Humanitarian, Economic, social, and political

To reverse its impact from the client & community, TASH is providing the screening, testing & treatment activities.

However, the daily data entry/registration was discontinued, Global, Continental and National COVID-19 Active reports the coronavirus COVID-19 is affecting 222 countries and territories.

Global (November 21, 2021, 20:36 GMT)

Coronavirus Cases: 257,775,321 Deaths: 5,167,165

Recovered: 232,681,371

Continental/Africa (November 21, 2021, 20:36 GMT) Recovered: 8,040,514

Ethiopia (November 21, 2021, 19:37 GMT; November 21, 2021, 20:36 GMT)

Coronavirus Cases: 8,658,638 Deaths: 222,079

Coronavirus Cases: 370,200 Deaths: 6,682, Recovered: 346,877

COVID-19 data Concurrency and Consistency: Since 13- July to September, daily RDT Antigen data entry, aggregation and tracker capture has been locked-back and late to be entered to data base on line.so that data has been regenerated and processed to DHS2. Accordingly, a total of 1635(825 &811 male and female respectively), have been entered to data base with the total yields of positivity $64/825*100%=7.86%$ for males and 7.0% for females. Positivity rate of male $=64/121*100%=53%$ and $57/121*100= 47\%$ for females

The overall attack rate (AR) was $121/1636*100%= 0.74$. Positivity rate was more common in males than in females (53% and 47% respectively. Testing practice and positivity results were increased parallel and high in August and September.

Table 38 Conducted tests Vs Confirmed cases(positives) for COVID-19 in four months duration(July-October 2021, TASH, AA, 2021.

S/N	Months	Total tested		Confirmed cases	
		Male	Female	Male	Female
1	14-30 JULY	110	89	9	6
2	1-31 August	247	259	7	2
3	1-30-September	236	259	25	23
4	1-30-OCT	232	204	23	26
5	Subtotal	825	811	64	57
	Ground total	825+811=1636		121/1636*100=0.74	

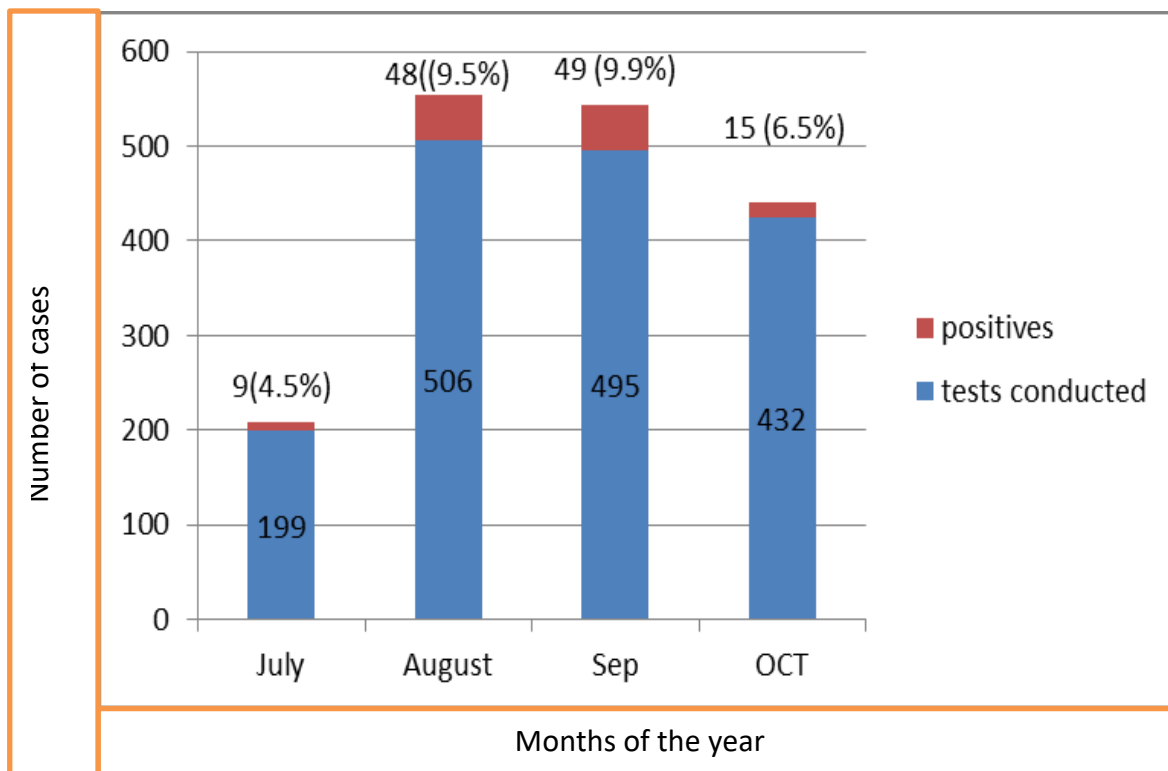


Figure 44 Monthly conducted tests Vs positivity, TASH, AA, July 2021

Accessed Data for November was only of 15 days. 15 days trends of tests and positive results of COVID-19 at TASH have been figured below with the total tests of 334(179,155), positive results of 14(7/179, 7/155) male and female respectively.

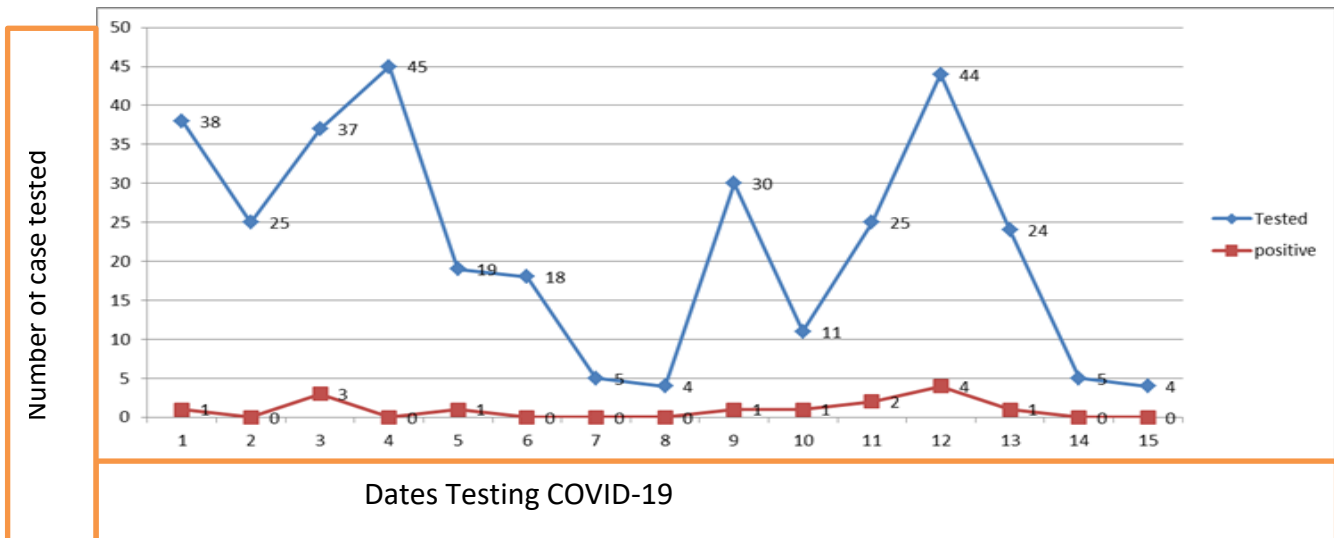


Figure 45 Trends of COVID-19 testing capacity from 1-15 December 2021, TASH, AA, 2021.

OBSERVED GAPS

Late submission of daily raw data for aggregation

Inactive participation of an individual to generate COVID-19 data (from POC)

Missing values (required entities: cell phone, full Address, test results) for data entry and tracker capture for positive individual

Ways of forwarding

All sites screening, testing, admitting, and discharging cases of COVID-19 are highly initiated to send reports timely and completely.

An individual performing COVID-19 case management should actively participate to generate and complete the necessary data.

The required entities under each column should be filled in, respectively, before reporting.

9.3. Bulletin presentation of conflict-induced IDPs in Awash Sebat, Federal Police Training Center, Zone 3, Afar, From August 26, 2014, December 4, 2015, E.C.

Introduction

Ethiopia has one of the world's largest internally displaced populations, with displacement risks remaining high in 2022. According to IOM's latest Displacement Tracking Matrix (DTM) National Displacement Report released in December 2021, a total of 4.2 million people were internally displaced across Ethiopia, compared to 2.1 million at the end of 2020.

The Displacement level doubled in a year, with over 2 million additional displaced people. The primary drivers of displacement are conflict (85%) and climatic shocks such as drought, floods, and desert locust infestations, which have displaced 2.1 million people and resulted in a tense and volatile humanitarian situation. With active fighting in several areas continuing, further displacements are likely to occur in 2022.

Armed conflict is expanding from Tigray Regional State (TPLF terrorists) to neighboring Amhara and Afar regions. Formerly, many people were displaced from different districts of Tigray and settled in Haik (South Wollo). A total of 2100 people (1673, 427), male and female, respectively, were transferred and resettled in Awash Sebat, Afar Regional State, Zone 3, Awash Fantale woreda, in the Federal Police Training Center.

Among the total population, 131 are under five years old, and 8 are pregnant above the first Trimester. 91% of them were Tigrians (mostly from Aksum, Shire, Wukro Maray, and Raya-Alamata), and the rest were Eritreans, Amhara, and from different parts of Ethiopia. 86% of them were Muslims. Awash Fantale is a woreda in Afar Region, Ethiopia, and Part of Administrative Zone 3. Awash Fantale is bordered on the south by the Oromia Region, on the

west by the Amhara Region, on the north by Dulecha, and on the east by Amibara. The towns in Awash Fentale include Awash Sebat Kilo and Sabure.

Rivers in this woreda include the Awash and its tributary, the Germama. A large portion of this woreda is occupied by the Awash National Park. The Awash-7 Federal Police Training Center is found in Awash7 Kilo Town. This woreda has a total population of 29,780, of whom 15,475 are men and 14,305 women, and an area of 1,046.41 square kilometres.

Awash Fentale has a population density of 28.46. While 16,849 people, or 56.58%, are urban inhabitants, a further 1,695 people, or 5.69%, are pastoralist

Schematic structure for IDP management

Structurally, The National Disaster Risk Management Commission (NDRMC) handled the mandate of this IDPS and managed it accordingly.

Different pillars for humanitarian aid and Service delivery in DRM are already in place.

EPHI deployed an RRT (Rapid Response Team) consisting of field epidemiologists, Medical doctors, HOs, nurses, MHPSS, and NHT for overall service delivery Quality control. The nearby Federal Police Level-One Hospital is jointly working with the RRT of EPHI.

NDRMC(National Disaster Risk Management Commission)

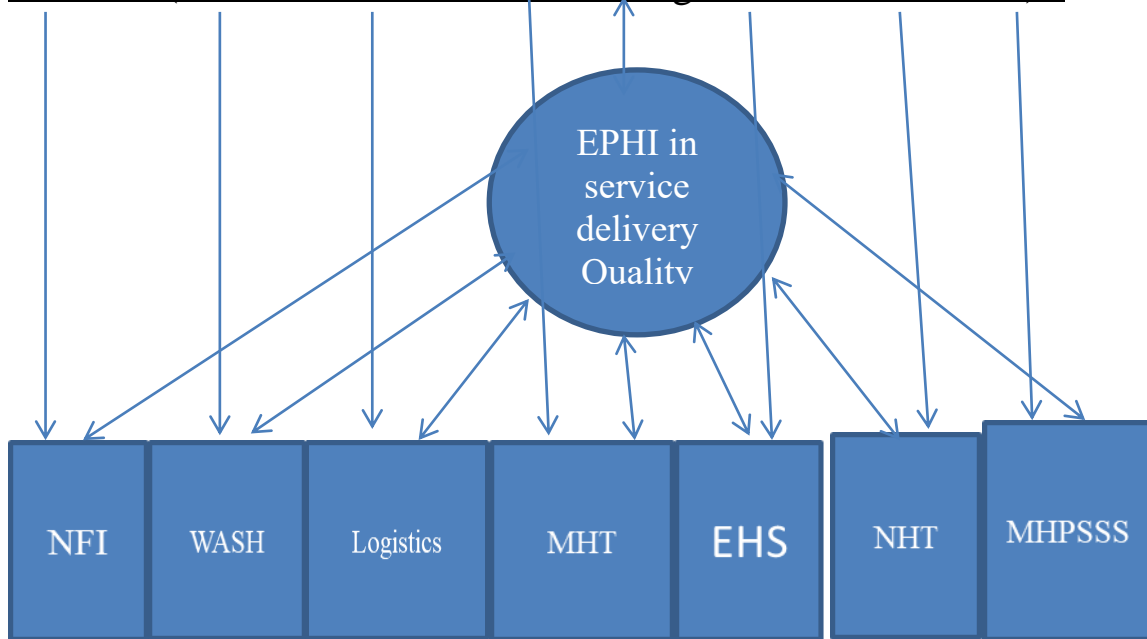


Figure 46 Organogram set for quality control in all service deliverers, Awash-7, IDPS, Afar, December 2022

Objectives

To identify health and health-related risks and respond accordingly among the internally displaced population found in Awash -7 Federal Police Training Centre, Awsi Rasu Zone, Afar region from August 26 to December 3, 2014

Methods

A community-based descriptive cross-sectional study design was implemented to assess the health and health-related needs of the displaced community.

The data were collected from key informants from the IDP collective center, concerned government officials, site visits and observations.

The data was analysed using Microsoft Excel 2010 and summarized in the form of narrations, tables, and graphs.

Assessment of health-related issues

The total population of the community was suffering from different types of diseases for about 6 months as there was no health facility there in Haik IDPS.

So the first step of the health team was to assess and screen individuals in the IDPs for chronic illness

Accordingly, a total of 54 chronically ill patients (HIV, DM, HTN, CHF, CKD, and others) have been identified and linked to services immediately, as follows:

Table 39Rapidly screened population for chronic diseases Awash-7IDPs, Afar, September 2022.

S/N	Type of Disease/CDs	male	female	total	remark
1	RVI	12	4	16	
2	DM	4	1	5	
3	ASTHMA	3	0	3	
4	MDR-TB	1	0	1	
5	TB	2	0	2	
6	MENTAL ILLNESS	1	0	1	
7	CKD	4	0	4	
8	CHF	1	1	2	01 male referred as an emergency
9	HTN	0	1	1	
10	GOUT ARTHRITIS	2	1	3	
11	Neuritis	2	2	4	
12	Chronic dermatitis	5	7	12	
	Total	37	17	54	

Disease surveillance and Essential Health services

A total of 2119 clients (patients) were treated at IPD and OPD. (IPD = 76, OPD = 2043) 1485/2119 (70%) males, 634/2119 (30%) females, and 87 children U-5 were immunized. Ninety-six U-5 children were screened for nutritional status (SAM = 6, MAM = 90), 73 individuals for family planning and ANC, 97 cases

were referred to Level 3 (General Hospital), and five deaths had occurred. All points have their own description separately in charts, figures, and tables.

Top Ten OPD Visit Morbidities

Diarrhoea is the leading first OPD morbidity, accounting for 510/2119 (24.06%) of the total cases, and 1 Death was scored.

Upper Respiratory Tract Infections (URTIs), Dermatitis, and Scabies follow in 2nd, 3rd, and 4th place, accounting for 344/2119 (16.23%), 216/2119 (10.2%), and 144/2119 (8.0%), respectively.

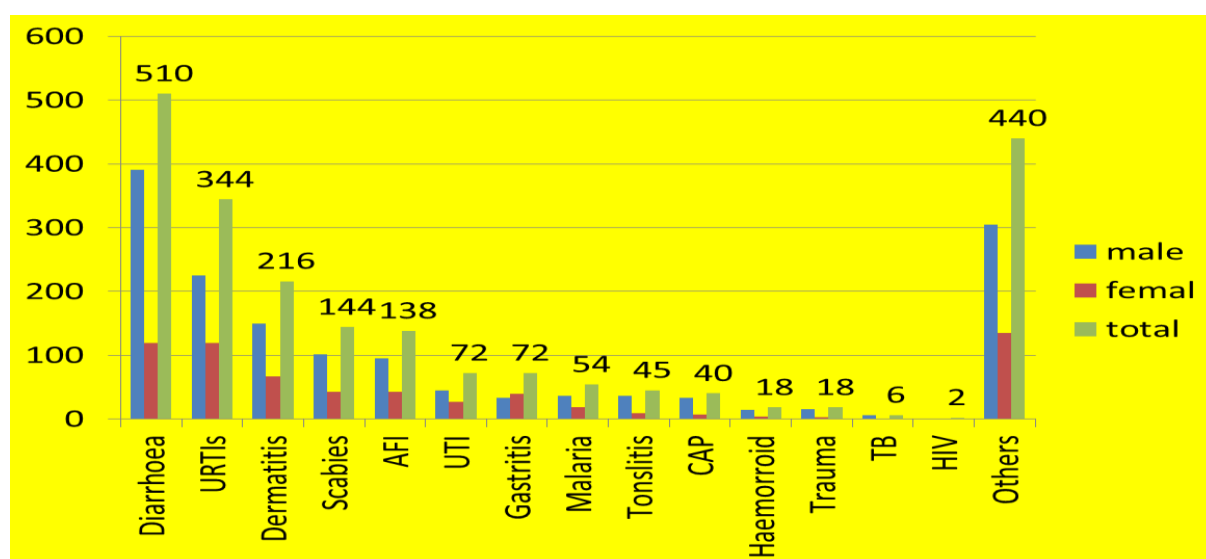


Figure 46 Top Ten leading OPD morbidity, Awash-7, Afar 3-SEP-12-DEC/2022

Table 40 Immunized children U-5, Awash IDPs, Afar 30-August-12-Dec, 2022.

Type of immunization	# vaccinated U-5 children in the last (commutative)	# vaccinated U-5 children in this week	total
MCV1 only	26	0	26
MCV2 only	38	4	42
BCG,PENTA,PCV1, ROTA	14	3	17
Total	80	7	87

Family Planning (FP) and Antenatal Care (ANC) follow-up

A total of 73 individuals have been provided with the following services:

ANC-15, FP-48, DELIVERY-2, SAFE ABORTION-2, and REMOVAL OF IMPLANON-4

Table 41 Family planning and ANC, Awash-7, Afar, 2022.

Type of service	#of beneficiaries in (cumulative)	this report	total	Remark
Linkage to ANC follow up	15	0	15	1 st up to 3 rd trimmers
Family planning	44	4	48	41 Depo-Provera injection , and 07 COC at nearby Awash HC
Delivery	2	0	2	Both at Awash Health centre
Safe Abortion	5	0	5	
Removal of In-planon	3	0	2	
Total	69	4	73	

Referral Linkage

A total of 97 individuals were referred to Mohammed Ake Memorial General Hospital (65 km away from Awash-7). Mental illness and psychiatric disorders account for 60% (58/97). All were referred for the sake of further management and better treatment. A total of FIVE deaths had occurred. Two deaths occurred at Mohammed AKLE (1 stroke, 1 CHF), and three in IDPs (PTB/HIV-1, Acute Watery diarrhea-1, mental disorder-1).

Table 42 Referral Linkage, Awash-7 IDPS, Afar, December 2022.

S / N	Types of referral	# of referred individuals (Cumulative)	this report
1	Fractures and dislocations	11	0
2	Fibro adenomas/ breast CA	1	0
3	Hypothyroidism	1	0
4	Anal fistula/ FIA	1	0
5	Asthma + S-II HTN	7	0
6	CHF	5	0
7	Nephritic Syndrome + HTN	9	0
8	Renal Calculi/stone	4	0
9	Psychiatry disorders	58	0
	total	97	0

Linkage and Refilling

A total of 112 individuals with chronic illnesses were referred for refilling. Mental illness accounts for 34.8% (39/112). RVI =33.9% (38/112), Chronic Dermatitis = 17.8% (20/112), Others =13.5%

N.B., the overall number of referred cases was 209 (97 for management and treatment and 112 for refilling).

Mental Health and Psycho-Social Support (MHPSS)

The overall activities of MHPSS were good at the beginning of the IDP's establishment. The first assigned professional left the site vacant without substitution (after one month). Again, the newly deployed Psychiatrist worked only for 13 days and left his job (in the second month). On the contrary, the psychologist and newly assigned Psychiatrist were working efficiently and were up-to-date.

Table 43 Activities performed in MHSS, Awash-7 IDPs, Afar, DEC 2022.

Description of the activities	cumulative in the last report	In this report	Total beneficiaries
Total screened	66	26	92
Individual counselling	46	14	60
Group counselling/ psych education	20	2	22
Refilling and medication	23	2	25
Re assurance	6	10	16
Total	161	54	2215

Non-Food Items (NFIs) and Water, Sanitation, and Hygiene (WaSH)

WASH Activities: FHI 360 was the only partner working on WASH. A trench latrine of 20 seats (7 for females and 14 for males) was built separately. Sufficient water supply (20,000 mm³ per day for 2100 people) and Provision of dignity kits for ladies were overwhelming activities.

NFIs: Mattress, blanket, mats, and kitchen utensils were supplied per HH or individual by the National Disaster Risk Management Commission (NDRMC). Shades were established by the IOM.

Food Items: Rice (7.5 kg), wheat flour (7.5 kg), and oil (0.5 litter) for one month per individual.

Strengths: Good relationship between Mohammed Akle Hospital, Awash HC, the Federal Police of the Awsh-7 site, and IDP health professionals' best progression on Essential Health Services (EHS), and special support from EPHI for facilitation of referral linkage.

Challenges: Poor attention of official bodies to food supply (Especially since there were no food items for five days!!) , Shortage of antibiotics, There is no clear data on the IDPs (in figure V, the tangibility of the number of IDPS on the ground), and IDPS were not politically treated as IDPS; rather, they were thought of as Criminals.

Recommendation: The official body that handled the IDPS should follow and attend their cases so that they will be treated legally. NDRMC should distribute sufficient foods (last month they supplied only rice!). (no oil, no flour, no sugar, and other items for sauce or ‘wat’). These are big and critical challenges that seek managerial decisions!

9.4. Descriptive Epidemiology of Skin Infection in Semera IDP, Afar Region, April to May 2022

Introduction

The Afar region is found in the North-eastern part of Ethiopia, and it has an estimated population of almost 1.9 million people, approximately two percent of the total Ethiopian population. The Region has borders with Eritrea in the Northeast, Tigray Region in the Northwest, Oromia Region in the Southwest, Somali Region in the South, and Djibouti to the East. Divided into five administrative Zones and 30 Woreda and exposed to internally displaced populations following the conflict with TPLF Terrorists.

There are nine IDP sites, but they were mostly settled into four IDPs (Afdera, Semera, Dubtiy, and Guyah). The highly contagious skin infection or cases were reported by the Afar Public Health Institute (APHI) from Semera and Dubtiy IDP sites. They were reported to EPHI in the last month (April) for further seeking of Emergency responses, Sufficient supply, and investigation.

The case was suspected as an outbreak of an unknown aetiology with a super clinical manifestation of Blisters filled with water. Reddish sores open all over the body but are more common around the nose, mouth, and folds of skin and are associated with Itching and painfulness oozing, which forms a crust and ruptures within a few days. It was highly contagious and more common in children under five, mostly in the specific age group of 2–5 years.

General Objectives

To conduct Rapid Assessment and Response in Afar IDPs and to perform epidemiologic case investigation of skin infection, May 2022

Specific Objective

To conduct a rapid assessment at an existing IDP site

To perform a case investigation in a laboratory or epidemiologically

To identify the risk factors for the occurrence of the disease

To promote intervention methods and treatments

Method of Assessment

Approach: A Rapid Response Team (RRT) consisting of three Field Epidemiology residents and a laboratory expert has been deployed from EPHI to join the APHI/RRT. A discussion was held with regional PHEM staff and clinicians, Mostly RRT of APHI.

A Site visit was conducted at case-based sites (Duptyi and Samara IDPs). Documents and line lists have been reviewed. Data was collected from line lists (April to May 2022), entered, cleaned, and analysed using Micro Excel 2010, and presented using Tables, graphs, and line graphs to indicate its Trends.

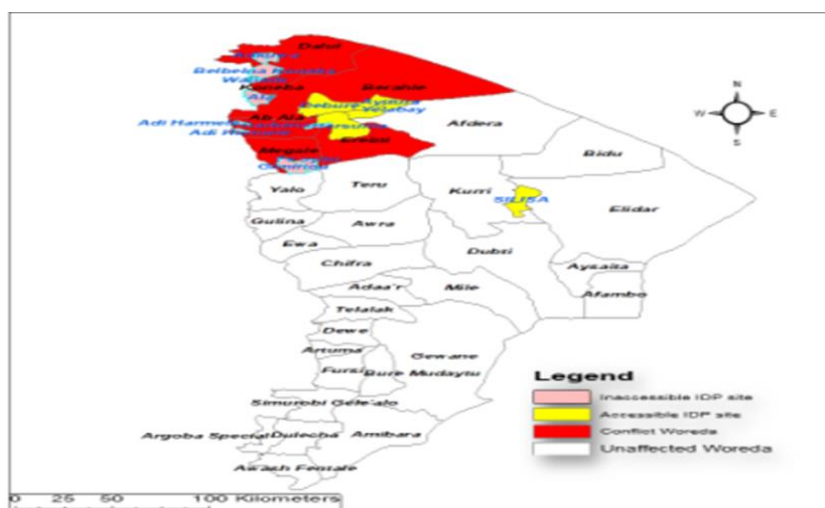


Figure 47Mao showing Semera IDPs, and conflict areas, Afar, May 2022.

Results and Findings in U-5 Years

A total of 138 cases have been presented at U-5 OPD from April 15–May 12, 2022. The case was more common in females than in males, 75 (54.35%) and 63 (45.65%), respectively. Children in the 2–5 age group were more attacked than those <1 and 2 years old: 83/138 (60.14%), 34/138 (24.63), and 21/138 (12.22%), respectively.

Laboratory Investigation

A total of 138 cases have been presented at U-5 OPD from April 15–May 12, 2022. The case was more common in females than in males, 75 (54.35%) and 63 (45.65%), respectively. Children in the 2–5 age group were more attacked than those <1 and 2 years old: 83/138 (60.14%), 34/138 (24.63), and 21/138 (12.22%), respectively.

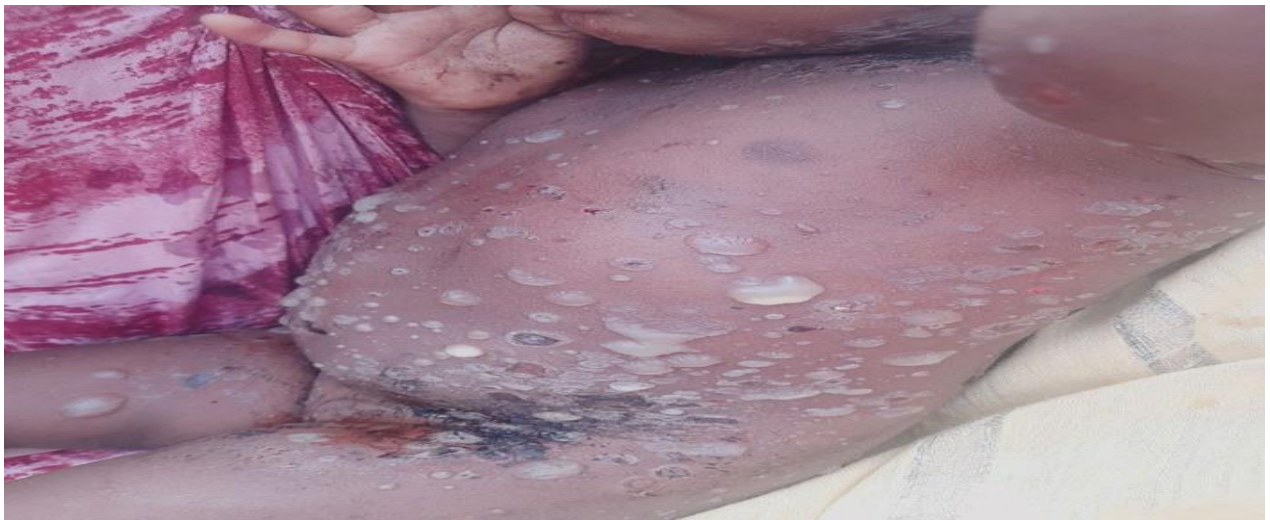


Figure 48 Photos that illustrate clinical manifestation of skin infections, Semera IDPs, Afar, May 2022.



Ninety-six (69.6%) of the cases were clinically diagnosed as skin infections, 34 (24.63%) as skin rashes, and the rest as impetigo and ulcers, but the lab investigation confirmed them as Staph. species..

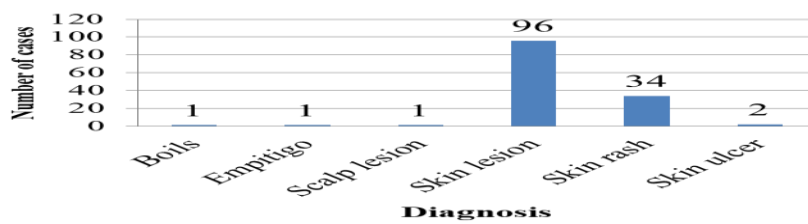


Figure 49 clinically diagnosed cases, Semera IDPS, Afar, May 2022.

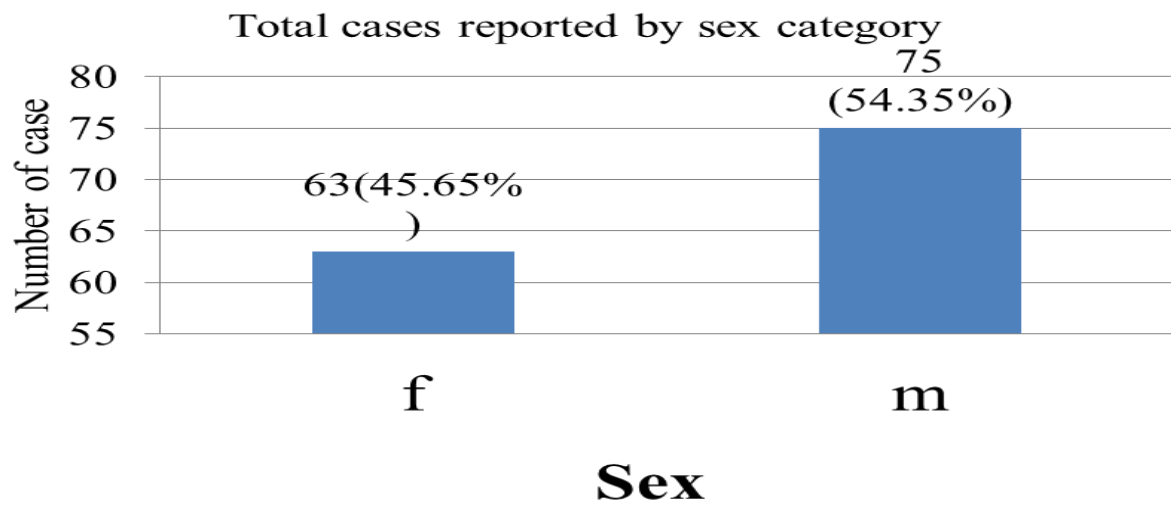


Figure 50 Skin infection cases by sex categories in under five children, Semera IDPs, Afar, May 2022.

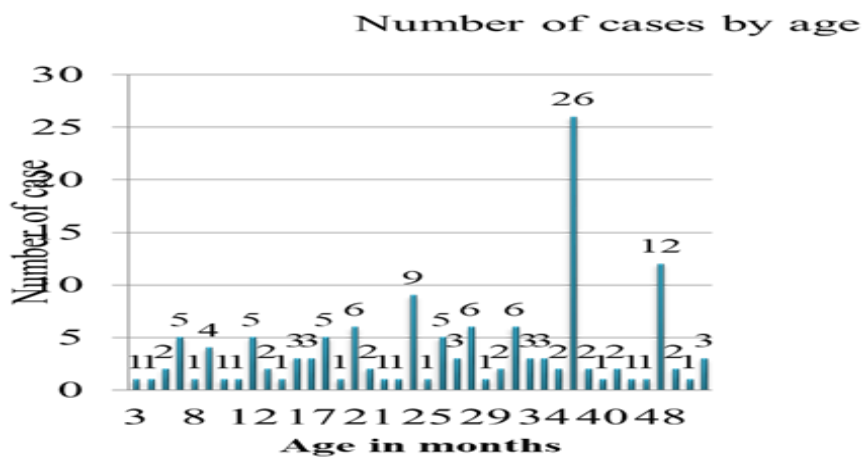


Figure 51 Case description by specific ages in months, Under-five OPD, Semera IDPs, Afar, May 2022. Case description by specific age: U-5 OPD, Semera, Afar, Ethiopia, May 2022.

The case was more common in age groups ranging from 2–5 years, accounting for 83 (60.14%), followed by age groups 1-2 years (24.63%).

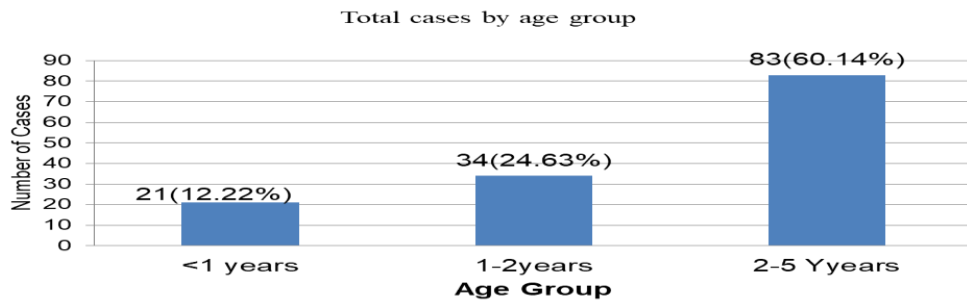


Figure 52skin infection cases by age group, Under-five, Semera IDPs, Afar, 2022.

The daily cases were neither statically stable nor increasing or decreasing; they were propagating in an epi-curve ranging b/n 1–10 cases per day from April 15, 2022–May 15, 2022.

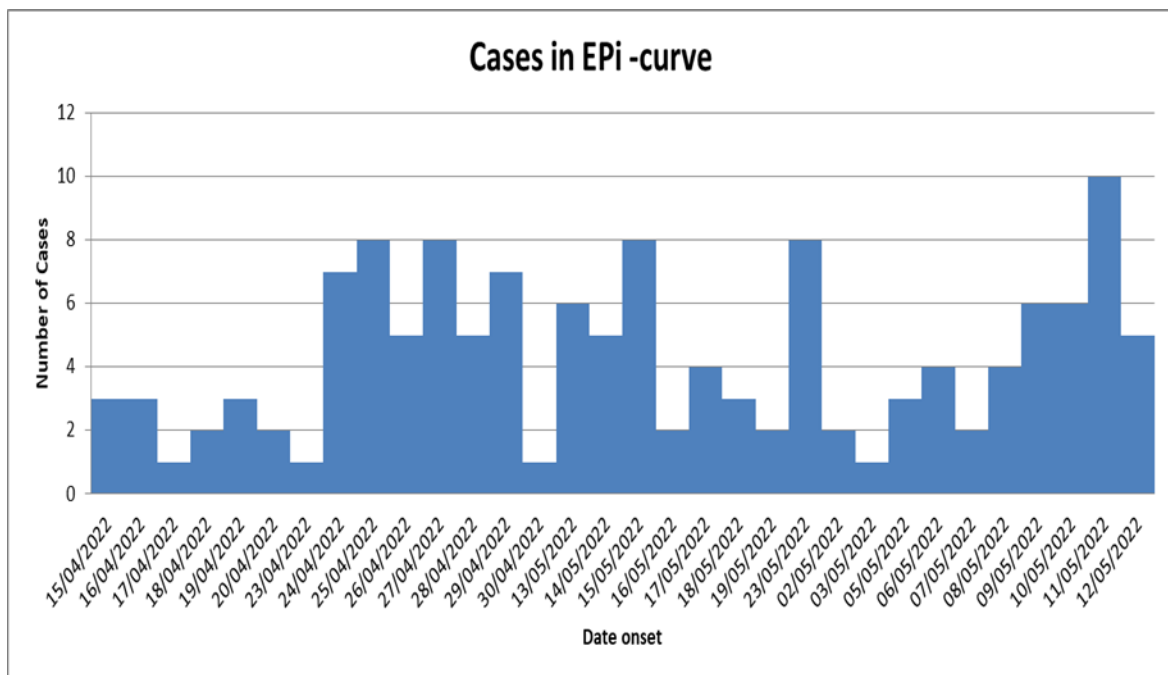


Figure 53Epi curve that shows the daily cases, Semera IDPs, Afar, May 2022.

Skin infection cases in Adult

A total of 73 cases have been presented to Adult OPD and most of the case was diagnosed as Skin lesion 46(60%) , Impetigo 16(22%), Allergic Dermatitis 8(11%) and, Skin infection

3(4%), 51 (70%) , 22 (30 %) were female and male respectively

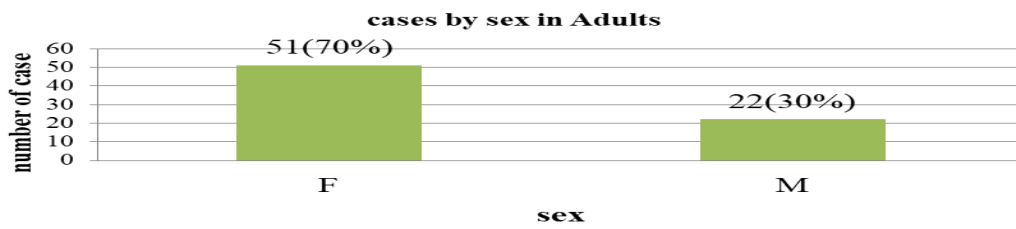


Figure 54 Skin infection cases by sex category in Adults, Semera IDPs, Afar, May 2022.

The number of cases by age group (in adults) was more common in age groups greater than 35 and followed by age groups ranging from 5 to 14 years, accounting for 26/73 (36%), and 22/73 (30.13%), respectively..

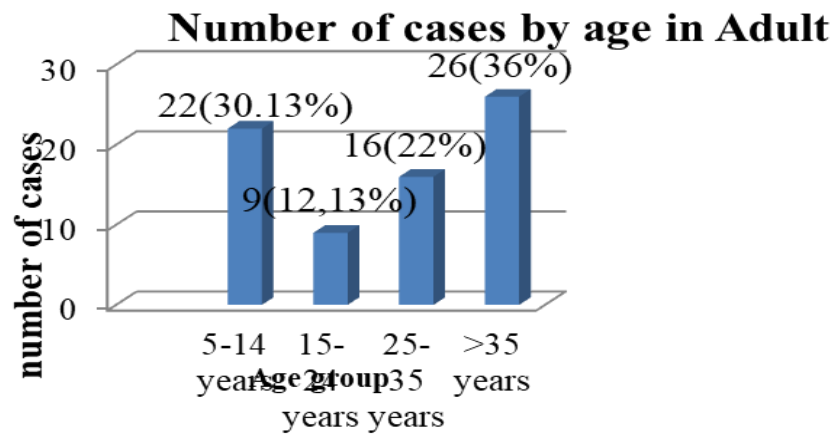


Figure 55 Number of skin infection cases by age group in Adults, Semera IDPS, Afar, May 2022.

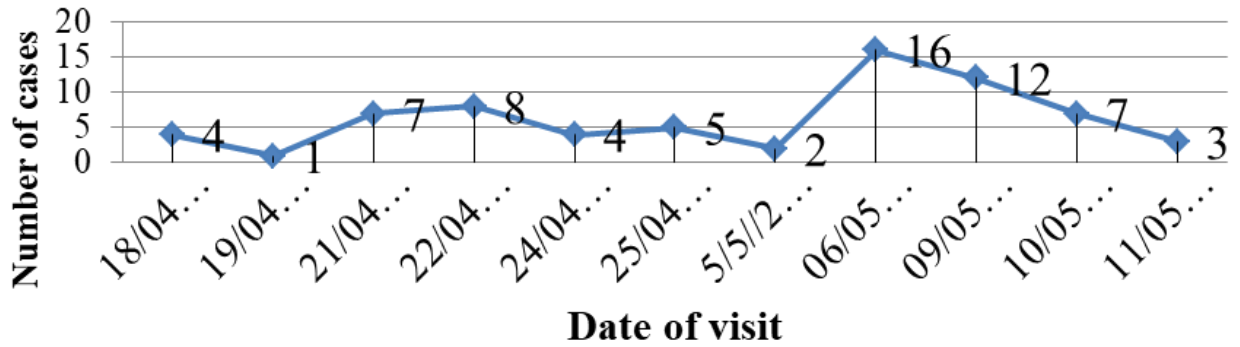


Figure 56 Trends of skin infection in Adults, Semera IDPs, Afar, May 2022.

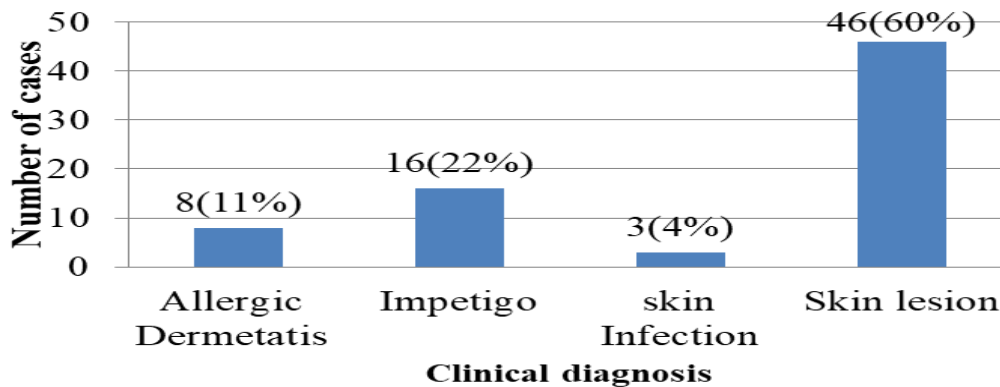


Figure 57 Clinical (Diagnosis) in Adult OPD, Semera IDPS, Afar, May 2022.

Strengths

- ❖ Information exchange for additional intervention and quick action (by APHI) ,
- ❖ Rapid Assessment coordination and immediate RRT setup (by APHI)
- ❖ RRT deployment for additional Rapid Need Assessment (RNA) in conjunction with the current RRT in Afar (by EPHI)
- ❖ Establishment of a case registration line list (by APHI/PHEM)
- ❖ Sensitization was accomplished by RRT (who created and distributed to PHEM and IDPS a case-based line list depending on the clinical manifestation of the skin infection).

Identified Gaps

- Limitations in the preparation of the line list according to clinical features of the case (Clinicians or PHEM)
- Missing case registration on line lists rather than Health Record Cards(Duptiy IDPs)
- Lack of environmental sanitation (Frontline Health Workers in IDPS)
- Shortage of supply of antibiotics (by suppliers, RHB, MoH, EPHI, NGOs)
- Congregated setting (especially in Samara IDP)
- Lack of commitment in the provision of Health Education and Late response in WaSH (NGOs, RHB)

Alert!

A number of cases with similar manifestations have been reported from the Afdera/Kuneba site; however, the number of cases was small, and there were diarrheal reports from different sites. There are still existing risk factors that may aggravate the occurrence of outbreaks.

Discussion

A total of 211 (138 and 73, U-5 and Adult OPD) skin infection cases have been diagnosed at Samara IDPs, respectively, from April 15–May 31, 2022, with the following clinical manifestations: Blister filled with water, reddish sore associated with oozing that forms a honey moon crust, itching, pain, locally common around the nose, face, and folded skin (neck, thigh), highly contagious, but leaves a healing crust within a few days.

This case was occasionally not common in the region, and no statistically significant summarized data was found to compare and contrast the cases. But the lab investigation isolated the Gram-positive Staph species, so management was set to control it and treat it accordingly.

Conclusion

The community of IDPs is suffering from such a contagious disease, especially children under five with the above clinical manifestations leading to secondary infection.

The same case with similar clinical manifestations has been apparently diagnosed as different (As defined above in descriptive epidemiology).

There might be respective risk factors for its virulence: Age, commonly in the age group 2–5 years, concomitant disease, eczema, measles, Warmed humid weather, Close contact, malnutrition, poor personal hygiene, poor environmental sanitation, and congregated areas or crowded settings

Recommendation on preventive measures

- ✓ Clinicians must adhere to respective diagnoses and record cases on the provided line list!
- ✓ Health workers at the IDPs site should provide routine primary health care!
- ✓ MoH, EPHI, ARHB, and NGOs urgently interfere in the sufficiently and consistently supplied supply of medications.
- ✓ NGOs and stakeholders who have been committed to working at IDP sites must respect their promises to save lives (especially in WASH and Nutrition).

9.5. Health and nutrition Emergency Response activities in Somali Regional State March/2022

Raso woreda has been experiencing a measles outbreak, and Elkeri has received reports of the outbreak of measles.

A cholera alert has been declared for the Dolobay woreda, which is close to Dollo Ado, where 64 confirmed cases of cholera have been reported.

With increasing malnutrition rates, the nutrition situation in Afder remains severe. The screening results from the months of November and December 2022 indicate that there is still an elevated incidence of acute malnutrition worldwide; for the Afder woredas, the proxy GAM fell between 18 and 23%. A number of contributing factors, such as inadequate access to milk and high food prices, contribute to the problem. Children are still in danger of malnutrition due to household shortages of food and water, and requirements are expected to increase in the coming months. The cattle industry, which is frequently the only source of revenue for pastoralist communities, has been negatively damaged by the drought. On February 2023, there were 1267 SAM children newly admitted for treatment, from the newly

admitted SAM cases, 10% (121 Children) were treated in SCs. The highest SAM with or without medical complication cases were reported from Elkari woreda. 34 out of 121 new SAM and 254 out of 1267 OTP new cases, approximately 28 % & 22% of the total Zonal TFP admission was reported from Elkeri. All the admitted cases received the intended treatment, and all necessary supplies are in place as the Zonal focal health reported (ICP report, March 3 2023).

Table 44 SAM cases by Woredas, Afder zone, Somali Region, February 2023.

Woreda	Population	Estimated less than five SAM				
		OTP	SC	Total	%	
West Imey	105000	16391	104	8	112	0.7
Hargele	146896	22930	109	0	109	0.5
Barley	118751	18537	124	8	132	0.7
Godgod	72000	11239	28	1	29	0.3
Kohle	82250	12839	159	11	170	1.3
Hargele Hospital			6	23	29	
Cherati	138867	21677	169	11	180	0.8
Dollo Bay	124000	19356	159	10	169	0.9
Raso Hospital			15	14	29	
Elkari	142321	22216	254	34	288	1.3
Raso Woreda	110036	17177	36	0	36	0.2
Total	1040121	162363	1163	120	1283	0.8

IDPs

The population of Woreda is estimated to be less than five SAM. There are 60 IDP sites as a result of the drought and conflict induced in Afder, with a total of 36,539 HH and 219,234 individuals. The IDPs in most of the sites are in dire need of a humanitarian response. We

have visited three IDP sites: Hargele, Dolobay, and Elkeri. In all visited sites, there was no clear data on specific populations. Pregnant and lactating women, children under five, and other populations were not identified.

There were no mobile health and nutritional teams in all the visited IDP sites and woreda. For example, in Awuraga, Elkeri woreda, the IDP coordinator, is 1992 HH. Each HH fetches 10 litres every alternate day, and sometimes there is a high shortage of water..

Table 45 Drought Affected areas population in HH, Afder Zone, Somali, February 2023.

Woreda	HH	Individuals	Sites
Dollo	3,051	18,307	5
Barey	5,854	35,124	10
Godgod	6,199	39,074	10
Qoohle	8,921	53,526	11
Hargele	4688	2812 8	8
Cherati	1,745	10,470	3
Raso	1,920	11,520	4

Water, Sanitation and Hygiene (WASH)

Most people in the Afder zone depend on surface water catchments and traditional water sources such as Birka, Web River, ponds, dams, and some limited boreholes. These surface waters dried up a month ago, increasing the number of people in need of emergency water intervention. According to the Zonal Water Office, there are, reportedly, 126,049 people facing water scarcity and in need of immediate water trucking interventions. The affected people are living in six woredas: Godgod, Qoohle, Barey, Hargele, Cherati, and Elkari, and are scattered in 146 kebeles. The zone's current water sources are in poor condition.

Main problems

High shortage of water and food

No Mobile Health Team (MHNT)

There was no active WaSH programme in the affected areas except for water supply.

Shortage of latrines in some IDPs.

Under five, lactating and pregnant women were not identified.

Data quality problem: there was no organised data related to health activities in IDPs.

Shortage of emergency drugs and medical equipment

Recommendations

- Strengthening nutritional screening in all woredas and IDP sites

Availing essential and vital drugs and other CMAM supplies

Support and strengthen efforts for initial response for MAM cases (CSB++ and RUSF).

Provide capacity building for staff in Family MUAC, CMAM, IMAM, IYCF-E, AMIYCN, and IMNCI/ICCM areas for Health workers.

Strengthening OTP and SC sites with the required kits and supplies to improve SAM and MAM treatment

Support on-the-job training for HWs at OTP and SC to ensure quality of care.

Support advocacy and awareness-raising campaigns in key communities and community mobilisation.

Strengthen and support HMIS, reporting, and data quality improvement efforts.

Establish a mobile health and nutrition team at IDPs and hard-to-reach areas.

Support and strengthen surveillance activities and preparedness plans.

Support and strengthen health education on hygiene and sanitation across various IDP sites and host community settings.

- Improve WASH facilities through provision and expansion wash facilities, solid waste pit management

Table 46 Lists of CMAM and required Emergency responses, Afder Zone, Somali, March 2023.

Lists of CMAM and Required Emergency Supply for Response, Afder zone, Somali Region, March/2023					
S/No	Items	Unit	Quantity	Unit price	TotalPrice
1	Amoxicillin 250mg Dispersible tablet of	Pk	2500	90	225000
2	Ampicillin injection 500mgVial	Vial	9000	7	63000
3	Gentamycin inj 40mg/2ml amp	Amp	6000	12	72000
4	Ceftriaxone inj 250mg	Vial	2500	20	50000
5	Ceftriaxone 1gm	vial	5000	24	120000
6	Glucose hypertonia injection40%	Each	750	15	11250
7	Pediatric cannula	Each	1000	5	5000
8	Syringe feeding50ml	Each	1000	10	10000
9	Tube asp/feedCHO6L125CMsteerdisp	Each	500	5	2500
10	Tube asp/feedCHO8L125CMsteerdisp	Each	400	5	2000
11	Tube asp/feedCHO12L125CMsteerdisp	Each	300	5	1500
12	Waterforinjection5mlampule	Amp-	5000	2	10000
13	Syringe with needle5ml	box	250	180	45000
14	Metronidazole250mgof10x50	box	500	400	200000
15	Metronidazole 125mg/5ml	bottle	1250	30	37500
16	Diclofenac50mgof10x10	pk	1500	60	90000
17	Diclofenac75mg/3ml inj.Of10x10	box	500	500	250000
18	Indomethacin25mgof10x10	pk	750	50	37500
19	Salbutamol aerosol /puff	bottle	300	45	13500
20	Salbutamol2mgof10x10	pk	300	50	15000
21	Amoxicillin500mgof10x50	box	1000	600	600000
22	Amoxicillin250mgof10x100	box	500	560	280000
23	Amoxicillin125mg/5ml	bottle	2500	30	75000
24	Cotrimozazole480mg/5ml	bottle	2500	35	87500
25	Ampicillin500mgof10x50	box	250	500	125000
26	Cloxacillin250mgof10x50	box	200	500	100000
27	Dextroseinnormalsalineof1000ml	bag	1000	42	42000
28	Normal saline 0.9%NaCl of1000ml	bag	1500	40	60000

29	Cephalexin500mg of10x10	pk	300	90	27000
30	Cephalexin250mgof10x10	pk	250	110	27500
31	Multivitamin tabof10x10	box	300	120	36000
32	VitaminBcomplexof100tabs	box	300	140	42000
33	Vitamin-B complex injection of10x10	box	250	200	50000
34	Neurobioninjectionof3ampoule	pk	750	40	30000
35	Chlorphenaramine4mgof 10x10	pk	300	25	7500
36	Cimetidine400mgof10x10	pk	400	150	60000
37	Cimetidineinjectionof10x10	box	250	350	87500
38	Clarithromycin500mgof10x10	pk	300	250	75000
39	MTS tab of10x100	box	500	150	75000
40	MTS suspension	bottle	1000	35	35000
41	Paracetamol125/5ml of60ml	Bottle	2500	12	30000
42	paracetamol500mgof10x10	box	1000	200	200000
43	Mebendazole100mg of10x10	pack	1500	60	90000
44	Oral rehydration salt	box	1000	400	400000
45	Ringerlactateof1000ml	bag	1000	42	42000
46	Erythromycin500mgtabof10x10	Box	100	230	23000
47	Erythromycin250mgtabof10x50	Box	100	600	60000
48	Augmentin625mg5x3	pk	500	100	50000
49	Ciprofloxacin500mgof10x10	pk	500	120	60000
50	Norfloxacin400mgof10x10	pk	500	120	60000
51	Examination glove(d/size)	box	1000	300	300000
52	Surgical gloves(no. 6.5)of50pair	box	900	350	315000
53	Gynecological gloveof50pair	box	400	300	120000
54	Laundry Soap	each	500	20	10000
55	CAF Ointment	tube	500	20	10000
56	TTC eye ointment	tube	1225	15	18375
57	syringe3ml	box	50	150	7500
58	syringe10ml	box	25	200	5000
59	BBL	bottle	300	150	45000
60	RUTF	Carton	1300		
61	F-75	Carton	30		
62	F-100	Carton	15		
63	SCRX Kit	Carton/	27.5		
64	SC o opening Kit	Carton/	27.5		
65	Vitamin A	Tin	1309		

66	IFA	Tin	46731.5		
67	Permetrin5% ointment	tube	500	25	12500
68	Mattress with rubber sheet	Each	25	1000	25000
69	Pillow	Each	25	140	3500
70	Blanket	Each	25	800	20000
71	Bed sheet	Each	25	450	11250
72	Electric kittle	Each	10	1000	10000
	Total				5,110,875

Table 47 Lists kits for cholera outbreak response, Afder Zone, Somali, March 2023

S/No	Item	Unit	Required
1	Full CTC kit for 25 AWD patients + caretakers	Kit	85
2	1 RL of 120 bags for 12 severe cases	Bag	21173
3	ORS sachet (9 sachet per expected case)	Sachet	95202
4	Doxycycline capsules, 100mg (3 cap/severe case)	Capsule	6352
5	PNGT each (50% of child severe cases)	Each	1059
6	ANGT each (15% of severe adult cases)	Each	317
7	IV Cannula each 18G, 22G, 24G	Each	2117
8	Scalp Vein each	Each	306
9	Azythromycin 250mg tab (2% of severe cases, 12 tab/pt)	Tab	978
10	Amoxicillin, 250mg/5ml suspension, 100ml/bottle (severe child cases)	bottle	611
11	Large water dispensers with tap (marked at 5 & 10 liter levels) for making ORS solution	Each	39
12	Tumblers/Kubaya, 200ml	Each	792
13	Teaspoons	Each	396
14	Cotton wool 5kg	box/50 roll	99
15	Aqua Tab	Tab	22926126
16	Water Guard	Bottle	1310065
17	TENT, rectangular, 42M ²	Each	102
18	TENT, rectangular, 24M ²	Each	102
19	Cholera beds	Each	267
20	Fencing rope (bright colors if possible), roll 200m	roll	86
21	Plastic sheet (4mx6m) or equivalent	roll	1720
22	Plastic sheet (4mx50m) or equivalent	roll	172

23	Safety box ,needles/syringes,5L,forincineration	box	1720
24	Stretchers	Each	172
25	Plastic bucket RED(15L),with lid	Each	1290
26	PlasticbucketBLUE(15L),with lid	Each	1290
27	Plastic bucket GREEN(15L) ,with lid	Each	1290
28	WatercontainerBLUE(30-40L)withtapforhand-washing	Each	516
29	Plastic bucket(30L),with lid	Each	430
30	Plastic bas in, for clothes washing	Each	860
31	Jerry can(20L)	Each	860
32	Dust bin, plastic	Each	258
33	Plastic broom ,for cleaning	Each	344

Concussion:

Based on the above requisitions, needs should be met accordingly, and responses must be timely. Many children under five, or PLW, are severely suffering from a lack of food and water supply. Most of the communities that were used to residing in rural areas of the zone were migrating to the areas where IDPs congregated before three years following conflicts.

9.6. Summary reports of Dengue Fever, Zone 3, (Gewani, Gelealo, Awash-40 & 7 Districts), Afar, July 2023

Gabi Rasu, administratively called zone 3 of Afar region is among the current epidemic areas for Dengue Fever outbreak. Epidemiologically four woredas (Gewani, Gelealo, Amibara and Awash-7/Fantale) were affected with Dengue Fever (DF) outbreak. These woredas are structurally, adjacent to the main road/street from Addis Ababa to Logia-Semera.

Dengue is caused by a virus of the Flaviviridae family (*Aedes Aegypti*). Dengue virus is frequently transported from one place to another by infected travellers. Commonly, it is transmitted to humans through the bites of infected female mosquitoes, primarily the *Aedes Aegypti* mosquito. The incubation period of dengue is 4-10 days after the bite of *Aedes* mosquito.

Case description in Four (4) epidemic woredas,

A total 1734 (49 incidents) of Dengue Fever was reported from the epidemic areas. Overall, 26 were confirmed and 1708 were suspected. Cases from 4 woredas in this week are less than the cases reported in last week. But malaria case is increasing, following abundant rain fall.

Table48 Dengue Fever in four Districts of Gabi Rasu zone, Awash-7, Afar, as of 14-July 2023

Name of the district	Total cases	New cases (this week)	Confirmed	Suspected	Probable
Gewani	731	0	5	726	0
Gelealo	232	21	4	228	0
Awash-40	132	14	4	128	0
Awash-7	639	14	13	626	0
Total	1,734	49	26	1,708	0

Table 49 total cases of DF respective to site of outbreak, Awash-7, Afar, July 2023

Description of the Dengue Fever outbreak

On the 9th June of 2023, the index case, a 21 year-old female was presented to OPD with high grade fever (39 degree centigrade), head ache, generalized body weakness and with absence of vomiting and Nausea. The case promptly shot up to 13 with in the three days. All these cases were negative for RDT for malaria and again in microscopy. Continuously the case was reported to a national PHEOC (EPHI). 16th June, the team deployed from EPHI collected 26 blood samples and 14 of the total (14/26) turned positive for Dengue virus. Concurrently with

lab investigation the team engaged in response activities in surveillance, active case search, and vector control activities. The trends of DF was declined accordingly and reached 14 cases up-to-date of this report.

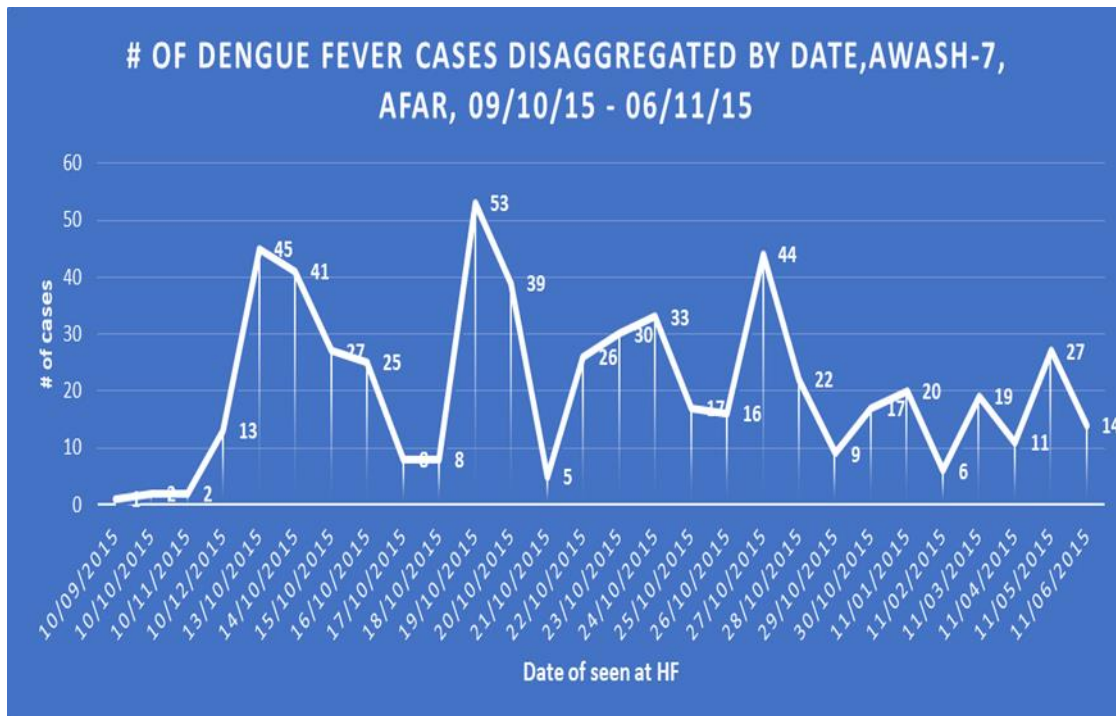


Figure 58 Disaggregated data of DF outbreak by date of onset, Awash-7, Afar, as of 9-June to 06-July 2023,

Activities

A. Coordination- All sites have their own organized Rapid Response Team(RRT), but its actual functionality and performance is somewhat below expected comparatively with the previous report.

B. Public Surveillance- house-to-house visiting is on-going, and recent reports of all site is sketched out bellow in pie chart and tables

- **C. Institutional activities:-** Two huge Federal security institutions have based in both districts (F. Police & Military camps and infantry bases)
 - There are Seven (7) military bases(sites):-
 - Gewani, Bertha, Awash-40(2sites),
 - Addis Rae (2 camps) and Metehara area

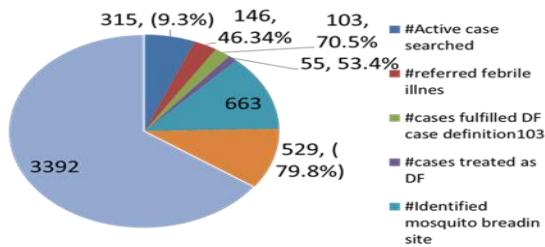
- Federal Police- have 2 bases at Awash –Sebat (7

Overall Surveillance Activities and Case managements (Gewani, Awash-40, Gelealo &Awash-7 Districts)

- Specifically, four districts in Zone 3 were working on DF public health surveillance.
- This report covers the DF surveillance activities from the date of onset (Separately)
- Actually Gewani District reported a **“Zero” report Since 2/7/2023.**
- Activities done for identification of mosquito breeding site(overall) was 663,
- 529/663(79.8%) was Sprayed with Abate chemical for source reduction
- From 3,392 visited HH,315 cases were searched.
- 146/315(46.35%) of them were referred, and linked to treatment centre.
- 15/146(10.3%) treated as DF.

Districts	#visited HH	Active case searched	referred febrile illness	#cases fulfilled CD	#cases treated as-DF	#identified breeding site	#sprayed with chemical %	source reduction
Gewani	190	15	10	5	5	102	78	76.5 %
Gelealo	272	69	43	5	5	18	18	100%
Awash-40	360	87	5	5	5	68	55	80.9 %
Awash-7	2570	144	88	88	???	475	378	79.6 %
Total	3,392	315	146	103	15	663	529	84.25 %

Table 50 Overall surveillance activities and cases management of DF, Awash-7, Afar, July 2023



The aggregated performance for case search, management and vector control of all site is as follow

Figure 59 Performances in DF case search, management and Environmental control, Awash-7, Afar. July-20

Case management

Overall 1734 cases were treated.79 (4.6%) treated as IPD and 1655(95.4%) Treated at OPD

Table 51 Dengue Fever OPD and IPD case management in four districts, Awash-7, Afar, Jul-2023.

District	IPD/Admitted cases	OPD	Total
Gewani	0	731	731
Gelealo	0	232	232
Awash-40	18 (13.6)	114	132
Awash-7	61 (9.5%)	578	639
Total	79 (4.6%)	1655 (95.4%)	1734

Strengths

- ✓ Additional mosquito breeding sites from military & Federal Police was identified
- ✓ Onsite sensitization was done for both on vector control activities.
- ✓ Three(3) litters Abate Chemical was supplied to all districts based on their gap and need
- ✓ Military camp is on fumigation accordingly.
- ✓ Afar Public Health Institute (APHI) conducted a two (2) days training to Clinicians and HEWs (of zone 3)
- ✓ Team from EPHI (We) were participated and took a share in conducting trainings.

Challenges

- Lack of Awareness (especially, Federal police and Military hospital for searching ,managing the case, and source reduction approach)

- Less contribution and lack of commitment in private clinics
- Lack of budget for sprayers
- Shortage of drugs and Iv fluids(Paracetamol, Ringer lactate, NS)
- Rumor in Matahara is still yet not confirmed. (As informed update of 16/07/2023)

Ways forward

- Conducting Capacity building training to Military & FP urges (EPHI, DMHD, FPMHD)
- Community mobilization and engagement of private clinics.(Woreda Health office and HEWs)
- Vertical & horizontal communication is important for allocation of budget (APHI PHEM Director, zone and Woreda Health office)
- Supply of Drugs especially, for Dengue treatments. (Zone and Woreda, EPHI.)
- Team should be redeployed as much as possible to confirm the outbreak In East Shoa-Metehara. (ORHB, East Shoa Zonal Health Office, EPHI)

Vector control strategy

- ✓ Risk communication/ health education
- ✓ Environmental control
- ✓ Personal protection
- ✓ Chemical control
- ✓ The prevention or reduction of Arboviral disease transmission is:
- ✓ Completely dependent on the control of mosquito vectors and
- ✓ Limiting person-mosquito contact

Annexes

Annex 1 Questionnaire for malaria outbreak investigation of Abobo Woreda, west Ethiopia

General knowledge

Respondent classification Case Control

Date of data collection----- Name of data collector----- Region -----Zone
_____ Woreda _____ Kebele _____ Got/Village _____

Place: Longitude _____ Latitude _____

Part one: Socio-demographic information

SN Questions Response/answers Skip

M101 Respondent identification

M102 Age in years

M103 Sex Male Female

M104 Address Woreda _____ Kebele _____

Village _____

M105 Occupation Employed _____ Unemployed _____ Student _____ Pastoralist ___ -
farmer _____

M106 Total family members (size) _____

M107 Ethnicity Anuak _____ Kambata _____ others _____

M108 Religion Catholic _____ Muslims _____ protestant _____

M109 Marital Status Single __ married __ Divorced _____ Widowed

M110 Education status No formal __ education _____ primary _____ secondary _____ Diploma _____
Degree _____

Part Two: Clinical Manifestations (Only for participants)

M201 What were your first symptoms? _____, _____, _____,

M202 When was the date of onset of the first symptoms? _____(dd/mm/yy)

M203 What were other symptoms yes No

1. Fever?

2. If yes, duration in a day

3. Constant fever
4. Every other day
5. Vomiting
6. Diarrhea
7. Anorexia (appetite loss)
8. Head ache
9. Sweating
10. Chilling & fever
11. Weakness
12. Cough
13. Back pain
14. Muscle pain
15. Rigor

M204 Did you visit health facility?

M205 When did you visit Health facility?

M206 Did you get treatment?

M207 What treatment did you get? Coartem,

Chloroquine

Quinine

Was it for Pf

Was it for pregnant and <5

What was it pregnant and <5 kg?

Quinine injection

Was it for sever malaria

Other treatment given

M208 Did you recover completely after the treatment?

M209 Place of residence during 2 weeks before onset of illness? _____

M210 Blood sample taken?

M211 If yes to M210 1. Positive?

2. Negative

Part three: for complicated malaria

- M301 Altered consciousness(confusion, sleepy, coma, Yes No
- M302 Not able to drink or feed? Yes No
- M303 Severe dehydration Yes No
- M304 Persistent Fever Yes No
- M305 Frequent vomiting Yes No
- M306 Convulsion or recent history of convulsion Yes No
- M307 Unable to seat or stand up Yes No
- M308 Pallor Yes No
- M309 No urine output for the last 24hrs Yes No
- M310 Bleeding Yes No
- M311 Jaundice Yes No
- M312 Difficult breathing Yes No
- M313 Other conditions that cant be managed at this level Yes No

Part Four: Risk factors(for both case and control)

- M401 Specific living area _____
- M402 Sleeping areas 1, inside home 2. Outside home
- M403 Do you stay outside over night Yes No
- M404 Is there any person in your home with similar sign and symptom? Yes No
- M405 Did you ever traveled outside your village in the past 2-3 weeks?
- M406 If yes to QM405, please indicate Date if travel_____

Place of travel_____

Date of return_____

- M407 If yes to QM405, Is there any person with the same symptom (diseased)in the place where you have been? Yes No
- M408 Is there a similar sick patients in your home?Yes No
- M409 Do you have bed net in your home ? Yes No
- M411

- M410 If yes how often do you use? 1. Always 2 sometimes 3, Never
- M411 Slept under LLIN 2 weeks before onset of symptom Yes No
- M412 If yes to MQ409 Do mothers and children given priority of using bed nets? Yes No
- M413 Was Indoors Residual Sprayed(IRS) this year? Yes No
- M414 If yes to MQ413, When? _____
- M415 Do you wore full extremity covering cloth in evening hours boyh in in and outdoors? Yes No
- M416 History of malaria in the past two months Yes No
- M417 If yes to M416, Have treated? Yes No
- M418 Have you stagnant water for 3-5 days following rain fall? Yes NO
- M419 Do you use windows or door curtains/close during evening to minimize mosquito entry? Yes no

Part Five :Environmental investigation

- M501 Place of stay during night _____
- M502 Is there any artificial water holding container close to your home? YES NO
- Plant in the containers
 - Flowers/pots
 - Plant with temporary water
 - P00ls
 - Open deep well
 - Broken glass/bottle
 - Cans
 - Plastic containers
 - Gutter to collect rain water
 - Ed water storage septic tankeruncover
- M503 Presence of mosquito vectors /mosquito breeding site around the home vicinity
- M504 If M5043 yes, presence of larvae in breeding site around the home or vicinity?
- M505 Do you use repellents
- M506 Protective clothing
- M507 Waste collection

M508 Unprotected irrigation

M509 Presence of intermittent rivers close to the community

M510 Is there flooding of rivers in the kebele following the rain fall?

Part Six: Awareness Assessment

M601 What are sign and symptoms of malaria? yes NO

1. Fever
2. Vomiting
3. Anorexia
4. Chills and shivering
5. Headache
6. Sweating
7. Back pain
8. Arthralgia
9. weakness

M602 How it transmitted? 1. By mosquito bite

2. Blood transfusion
3. Mother to child
4. By flies
5. breathing
6. body contact
7. By hunger

M603 How it can be prevented? 1. Early diagnosis & treatment

2. House spray with insecticides
3. Use of mosquito bed
4. Environmental hygiene
5. By using good nutrition

M604 What may increase someone's risk of contracting malaria? health 1. Staying out late at night poor

2. Stagnant water near home

3. Contact with malaria patient
4. Eating contaminated food

Annex 2 Cholera outbreak investigation 1 Questionnaire for Routine HMIS for HIV/AIDS Case Based Surveillance (CBS) questionnaire Identifiers: REGIONAL/ZONAL LEVEL

Interviewer	Date	Surveillance System Respondent
Assessment team		

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown
2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable
2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
 _____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis
 1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 3. Perform trend analysis?
 4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 7. Who is the responsible for the analysis of data?_____
 8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed
 9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IV. HIV Case Investigation
 1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
 2. Number of cases suspected in the past 1 year _____
 3. Number of those investigated_____ Obs. Reports
 4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
 5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

 6. The number of outbreaks where the outcomes had been put into practice:_____ ----ce report]
 7. Of the districts that looked at cases, % looked for risk factors_____
 8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
 9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following: _____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown

2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable

2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown

3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts

2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

I. Capability to report it to the next level through e-mails, telegram fax, telephone.

II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others

III. Data analysis

1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based

2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable

3. Perform trend analysis?

4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable

5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable

7. Who is the responsible for the analysis of data?_____

8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed

9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/

IV. HIV Case Investigation

1. Per cent of suspected HIV cases that were investigated in the past 1 year_____

2. Number of cases suspected in the past 1 year _____

3. Number of those investigated_____ Obs. Reports

4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____

5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

6. The number of outbreaks where the outcomes had been put into practice: _____ [-----ce report]

7. Of the districts that looked at cases, % looked for risk factors _____

8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents, _____

9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions). _____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following: _____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

IV. Availability of National surveillance manual

3. Is there national manual for surveillance? Yes / No / not applicable/ unknown

4. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease_____

V. Case detection and registration

3. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

4. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

VI. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

4. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
5. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
6. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- VI. Capability to report it to the next level through e-mails, telegram fax, telephone.
 - VII. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
 - VIII. Data analysis
 10. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 11. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 12. Perform trend analysis?
 13. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 14. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 15. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 16. Who is the responsible for the analysis of data?_____
 17. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed
 18. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IX. HIV Case Investigation

11. Per cent of suspected HIV cases that were investigated in the past 1 year_____
12. Number of cases suspected in the past 1 year _____
13. Number of those investigated_____ Obs. Reports
14. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
15. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

16. The number of outbreaks where the outcomes had been put into practice:_____ [-----ce report]
17. Of the districts that looked at cases, % looked for risk factors_____
18. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
19. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____
20. How many districts [noted in the final report] used the data to take action

X. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

5. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)
6. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable
7. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

8. Epidemic Response

The existence of a budget provision for responding to epidemics

D. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

E. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

F. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____%

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

DISTRICT (INTERMEDIATE LEVEL) QUESTIONNAIRE

Identifiers District

Assessment team Region /province

Date country

Interviewer surveillance system

Respondent

% of districts with a national surveillance manual accessible

1. Does this location have a national manual for surveillance?

Obs Observe's guide to national surveillance:

Whether it's true or false is undetermined. Not Relevant

Case confirmation, first _____

Districts that can transmit samples to a higher-level lab as a percentage

2. Can the district send samples to a lab with more advanced equipment?

Yes no unknowns Not relevant

% of districts with policies for transporting specimens to the next level and collecting, handling, and handling new specimens

1. Has the district established policies for the collecting, management, and transportation of specimens to the next stage?

Yes no unknown Inapplicable

percent of websites with country-specific forms at all times over the previous six months

1. Do you currently have any of the necessary forms for the nation from the previous six months?

Yes no unknown Inapplicable

Percentage of health facilities that submitted reports to the district level for each reporting period over the previous three months:

1. The number of reports received over the past three months vs what was anticipated

Weekly: 12 times the amount of healthcare facilities

As soon as possible: _____/--- times as many medical facilities

(Use national deadlines)

1. The number of timely submitted monthly reports is ____/12 times the number of healthcare institutions.

2. Twelve times as many reports were submitted on time as there were healthcare institutions.

3. Percent of districts with access to telephone/, fax/, radio/ or email/ for reporting to the next level

What to report:

Any of the following: a. mail b. fax c. phone d. radio e. electronic f. other enhancing reporting 1. How could reporting be made better?

I. Data analysis _____

2. I. The proportion of websites that: List data by individual (case-based, outbreaks, sentinel)

Obs Observed data breakdown by sex and age

If so, No If not, Unknown Not relevant

1. Describe location-based data

Data by location (locality, village, job site, etc.) as observed

If so, No If not, Unknown Not relevant

2. Explain data by time.

Observed data description by time

If so, No If not, Unknown Not relevant

3. Conduct a trend analysis

Obs Cases by time line graph observed

In agreement No Inconclusive Not relevant

4. List:

5. Each priority disease should have an action threshold.

Do you have an HIV-related action threshold?

Yes There are no unknowns Not relevant

6. If so, what exactly? Increase in cases by _____%

7. Utilize the proper denominators

Obs Observed the presence of demographic information at the site, such as population under five years old, population by village, and overall population.

In agreement No Inconclusive Not relevant

Who is in charge of data analysis? _____

2. How frequently do you analyze the information gathered?

Daily, weekly, monthly, quarterly, every two weeks, as needed, etc.....

Index case testing _____

The proportion of suspicious instances that were looked into over the previous six months:

Number of suspected outbreaks over the last 12 months: _____

Obs Of those, how many were investigated? (Watch reports, and if you can, get copies.) _____

% of local government units that have ever looked into an outbreak

[Number of districts assessed that have ever conducted an outbreak investigation, Number of districts assessed to obtain indicator]

3. Has your district ever investigated an outbreak?

Yes No Unknown Not relevant

I. Epidemic readiness _____

1. The proportion of districts with an epidemic preparedness and response plan (Obs) Have a written plan for preparing for and responding to epidemics

Yes No Unknown Not relevant

2. In the last year, what percentage of districts always keep emergency medicine and supply supplies?

Has the district had emergency medicine and supply inventories on hand at all times in the last year?

Obs observed the medicine and supply inventories at the time of the evaluation.

Yes No Inconclusive Not relevant

The proportion of districts where the most recent epidemic (or outbreak) was felt during a scarcity of medications, vaccinations, or supplies

During the most recent epidemic (or outbreak), did the district encounter a lack of medications, vaccinations, or supplies?

Yes There are no unknowns Not relevant

2. Availability of finances or the existence of a budget line for epidemic response

Is there a budgetary allocation or way to receive money for fighting an epidemic?

In agreement No Inconclusive Not relevant

3. % of districts have a committee for managing outbreaks

Obs Observed epidemic management committee meeting minutes (or reports). Yes No
Unknown Not applicable

1. Per cent of districts that have rapid response team for epidemics

Does the district have a rapid response team for epidemics?

Yes No Unknown Not applicable

I. Responses _____

2. Per cent 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

3. Per cent of districts that responded within 48 hours of notification of most recently reported outbreak

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

Yes No Unknown Not applicable

4. Per cent 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

. Feedback _____

5. % of sites publish written reports on a regular basis to share surveillance data. How many written reports on feedback has the district created in the past year?

Obs noticed the existence of a written report that is frequently created to communicate surveillance data (at the district and higher levels).

Yes No Unknown Not relevant

6. % of the sites that have gotten a report or bulletin from a higher level regarding the data they have provided over the past year

How many reports or feedback bulletins did the district receive in the previous year?

Obs Observed at least 1 report or bulletin on the data they supplied from a higher level during the previous year at the district level.

In agreement No Inconclusive Not relevant

6.% of those who were under supervision in the last six months

How frequently did you receive supervision over the previous six months?

Obs Report of observed supervision or any other proof of supervision in the previous six months

Yes no unknown Not relevant

7. Of those who were under supervision in the past six months, what percentage of people had a supervisor from a higher level assess surveillance procedures that were suitable for their level?

Obs Reports of observed supervision or any other supporting information for a proper examination of surveillance procedures

In agreement No Inconclusive Not relevant

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

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

(Obtain required number of visits from central level)_____

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

Reason 1 _____

Reason 2 _____

Reason 3 _____

% of health professionals with responsibility are knowledgeable about disease surveillance

Have you received disease surveillance training?

Yes There are no unknowns Not relevant

7. If so, when, where, for how long, and by whom?

8. The percentage of districts with personnel trained in epidemic management and surveillance

How many of your employees in the district have received training in epidemiology and surveillance?

a. . Resources _____

b.

c. The percentage of locations with the following amenities: logistics a. electricity b. bicycles c. motor cycles d. vehicles

d. . Data management a. Office supplies b. Calculators c. Computers d. Printers e. Statistical software

6. Communication

A telephone service, a fax machine, a radio station, and computers with modems.

7. Resources for information, education, and communication

A. Posters B. Megaphone C. Flipcharts or Image Box D. TV and VCR E. Generator F. Screen G. Projector (Movie) H. Other

8. Sanitation and hygiene supplies

a. Sprayer b. Disinfectant b.

Coordination of surveillance, part II: _____

6. The existence of a focal unit or individual at the district level for surveillance coordination.

Is there a district epidemic management committee focal person for surveillance coordination?

3. Contentment with the surveillance system _____ surveillance system

What do you think of the surveillance system?

Yes No not, Unknown Not relevant

6. If not, what changes could be made to the surveillance system?

7. Contentment with the monitoring system

7. Possibilities for blending

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

Questionnaires for the Shebedino District, ----- Zone, Sidama Region, Ethiopia, Health Profile Assessment, May 2021

1. Organizational structure

1.1 Region _____ Zone _____ Woreda _____

Woreda boundaries include those in the north, south, east, and west.

1.3 Rural _____ Urban _____ Total number of kebeles

2. The region's historical features (Culture and Tourism Office)

2.1 Name: Woreda _____

2.2 How and Why the Name Was Given _____

2.3 In what year did the Woreda come into existence?

2. 4. Any further historical detail

3. The geographical and climatic situation

3.1. Map of Woreda _____ Area (distance from zone town)

3.2-----through AA -----Direction-----

3.3 Height: ----- Latitude ----- Longitude -----

3.4 Climatological Zones - Scottish ----- % Midland ----- % Lowland ----- %

3.5 Access to major roads _____

The area of the woreda (km2) is 3.6.

Annual temperature (average) _____ Max ----- Min -----

3.9 Inches of average annual rainfall _____ Max ----- Min -----

3.4 Seasonal cycles

4. Population Size and Structure

Population as a Whole: _____ Male ----- Female ----- gender ratio -----

Total Rural Population: 4.2. _____ Male _____ Female _____

Urban Population as a Whole: ----- Male ----- Female -----

Total Population: 1yr _____, 5yrs _____, 15yrs _____, >64yrs _____, Women 15-49yrs _____

S/N Name of the kebele Total population

1 M F Total

2

3

4

5

4.6. Average size of the entire household: -----

4.7. Population pyramid by age and sex, figure

4.8. Language/Ethnic Composition: Sidama ----- Oromo ----- Amhara ----- Tigre ----- WOlaita -----
----- Gurage ----- Others -----

Orthodox, Muslim, Protestant, Catholic, and Others are the six major religions. economic circumstances

5.1 Agriculture is the primary industry and source of revenue. -----

• Grazing grounds -----the growing season----- • Amount of land-----

• Animal stock _____ • Trade _____

• Other businesses

5.2 Average annual income per HH _____

5.3 primary crops -----

5.4 Unemployment rate, employment rate, and unemployment -----

6. School health and education (Education Bureau)

6.1 The institution's identification number is K.G. _____.

- Predominantly school
- Secondary _____
- Preparatory _____
- TVET-----
- University/College _____

6.2 The total number of teachers in Wereda Male: _____ Female: __

6.3 Total Number of School-Age Children (Goal) _____

Total Enrolments, 6.3.1 Male: _____ Female: _____

6.3.2 Six-month school dropout rate _____

6.3.3 If school dropouts occur, why

6.4 The community's level of education

Total number of educated people:

6.4,1 Name Gender Male Female _____

Health-related school activities

6.5.1 Water supply: water supply in schools

6.5.2 Restrooms: Schools with working latrines (male and female)

6.5.3 HIV/other health groups in schools7. Infrastructure (transportation, telecommunication, power, water, etc.)

How many of the health posts have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many of the health centers have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many hospitals have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

7.4 Water source: _____

7.4 Number of water supply pipes 7.6 Coverage of the worda by water supply

7.7: Is the water chlorinated? _____

7.8Chlorination frequency _____

8. The woreda is experiencing a disaster.

8.1. Has the woreda experienced any recent natural or man-made disasters? _____

8.2. In the past year, were there any recent disease outbreaks or other public health emergencies?

8.3. If yes, - _____

8.4. incidents _____ and deaths _____

9. Vital Statistics and Health Indicators

- rate of neonatal death -----
- The infant mortality rate (IMR) was _____. (There were ___ deaths in total last year.)
- Total number of live births: ____ Total number of stillbirths: ____
- Number of neonatal deaths overall
- Child Mortality Rate: ____ (total fatalities in the last year were 15 years old)
- The crude birth rate is:
- Crude Mortality Rate: (____ total deaths in the past year)
- _____ Maternal Mortality Rate (total number of maternal deaths in the past year)
- Prevalence of contraception _____
- Acceptance rate for contraceptives: _____
- ANC rate (the proportion of first ANC visits among all projected pregnancies) _____
- ANC rate (the proportion of fourth ANC visits among all anticipated pregnancies) _____
- Rate of postnatal coverage
- The proportion of deliveries attended by trained birth attendants
- BCG vaccination coverage (for women and children): _____(____%)
- OPV-0-No _____(____%) OPV -1: No _____ (____%) OPV-3: No _____ (____%)
- Penta-1-No (%) _____ No. _____ in penta-3 (%)
- PCV -1: No_____ (____%) PCV -3: No _____ (____%)No _____ (____%) ,
- TT coverage-----

10. Health Services

10.1 Type and Number of health Institution

S/N	TYPE	NUMBER	REMARK
-----	------	--------	--------

	Government	Private	
--	------------	---------	--

- 1 Hospitals
- 2 Health centres
- 3 Health posts
- 4 Pharmacy
- 5 Drug store
- 6 Rural drug venders
- 7 Laboratory
- 8 Clinics Primary
 - Medium
 - Higher
- 9 Special clinics Dental
 - Mental
 - Pediatrics

10.2 Healthcare facility to population ratio:

10.3 Medical facility: Pop. HC: Pop _____

10.4 Health service coverage according to HP: Pop

10.5 Health professionals: Type and Number

S/N	Category	Government	NGOs	Total	remarks
1	Specialists (all type)				
2	Physicians				
3	Health officers				
4	BSc Nurses				
5	Clinical nurses IV				
6	Midwifery IV				
7	Lab. technician				
8	Lab. technologist				
9	Druggist				
10	pharmacist				
11	Environmental health				

- 12 MPH
- 13 HEWS
- 14 HMIS
- 15 OTHERS

Master of Public Health (MPH): Doctor: pop ratio ____; Nurse: pop ratio ____; HEW = Health Extension Worker HEW: pop ratio ____ midwife-to-pop ratio -----

The top 10 causes of morbidity and mortality are 10.6.

10.6.1. The top 10 morbidity-related causes of OPD visits

S/N Adult Pediatric

10. Budget allocation for health care: _____

11. The woreda (birr) has an annual budget of \$_____.

_____ (____%) of the annual budget is set aside for healthcare or healthcare organizations.

Annual budget allocation growth, expressed as a percentage relative to the prior year

Total NGO funds received for the following purposes/programs: _____

Services for Community Health:

12.1. The current state of the services offered by community health workers, namely 12.1.1. The number of TBAs and their respective responsibilities

12.1.2. The number of CHWs and CHPs and their responsibilities are as follows:

12.1.3. HEWs' accountability: _____

12.1.4. Others _____

12.2 Environmental Hygiene and Sanitation

12.2.1. Latrine coverage (percentage) and latrine utilization (percentage)

12.2.2. Total coverage of the safe water supply is _____ (%).

12.2.3. Coverage of safe water sources 12.2.4. Primary source of water supply _____

12.2.5. Others _____

12.3. Medical instruction

13. Focusing on the eight PHC components, the status of primary health care components

Delivery)

13.1MCH -----, ANC -----, PNC -----)

13.2 FP: Methods, Contraceptive Prevalence, and Contraceptive Acceptance

13.3 EPI (cold chain, vaccination, outreach service) _____

13.4 Sanitation and environmental health

13.4.1 Latrine coverage and use rate _____

Solid waste management: _____

13.4.3 Managing liquid waste _____

13.5 Endemic diseases; 13.5.1 Malaria: At danger are all kebeles and populations in them. _____

- ITN coverage, which now includes the present district
- This year, is there an IRS? (No kebeles) _____ HH protected population ____ covered _____
- Total cases per year, deaths per year, and 5-year cases ____ fatalities (5 total)
- Lack of malaria supplies (RDT, for example) _____

• Other problems _____ 13.5.2 Leprosy and TB

• Total cases of TB _____

• PTB negative _____

• Positive for PTB _____

• E PTB _____

• Rate of TB detection: _____

• The success rate of TB Rx

• _____ TB cure rate

• Success rate for TB medications: _____

• Defaulter on TB _____

• Death after using TB medication _____

All TB patients had their HIV tested. _____

• Total cases of leprosy on prescription 13.5.3 HIV/AIDS: • Total population screened for HIV in the previous year • VCT _____ PITC _____ PMTCT _____

There are currently no known HIV-related deaths.

• The number of new HIV cases per year is _____.

Overall PLWHA _____ On ART _____ In relation to Pre-ART _____

• Additional HIV preventive measures _____ 136. nutrition (malnutrition-related OTPs, SC, TSF, CBN, and PSNP activities), HO, and early warning

• Total OTP sites, _____ total OTP admissions per year _____

• The total number of SC locations, new locations each year, and admissions to SC as a whole per year are all _____.

• Is there a TSF (targeted supplementary feeding) or CBN (community-based nutrition) initiative in the woreda? If the program includes youngsters, _____ () _____ (No & %) • general state of food security

Lack of essential and vital medications _____

13.8. What do you consider to be the district's primary health issue(s)?

Annex 4 Checklist for drought derived nutritional assessment at Zonal and Woreda Health Department

Interviewer name _____ Institution: _____

Interview Date: DD-----MM----YYYY

Region: OROMIA

Zone: East Bale

The main contact at this location

Name: -

Position:

Tel:

SECTION I: SOCIO-DEMOGRAPHIC PROFILE

Q1. Population: Woreda total population Male: -----Female: -----Under -----

No. of women of reproductive age (age 15-49 yrs.) -----

No. of pregnant women: -----

Q2. Special Population (if any) Pastorals --Refugees ---IDP---- Migrant Workers -----

Q3. Number of HCs ----, Number of HPs -----

Q4. Number of Mobile health and Nutrition teams-----

Q5. Number of HEWs -----

Water availability at health centers (HC) -----

Q6. No. of health centres -----Number of Health Center with water access -----

No. of Health Center without water access -----

SECTION II: Coordination and management systems

Q7. Are there PHEM Officers at the Regional level? If yes how many Yes No

Q8. Does the RHB/Zone Health Office regularly report PHEM report as scheduled dates? Observe copies and comment Yes No

Q9. Are there PHEM Officers/focal persons at Woreda and HC levels?

If yes how many are there in the woreda level Yes No

If yes how many are there in the HC

Q10. Do the Woredas, health facilities, and HEWs regularly report PHEM report as scheduled dates? Observe copies and comments Yes No

Q11. Are all relevant government, NGOs, and UN agencies represented at Regional PHEM? Yes No no hear

Q12. Is there a multi-sector health coordination forum? If yes how frequently meet? Yes No

Q13. Is there a Public Health Emergency preparedness and response plan?

Q14. Does it include reproductive health? Yes No

Q15. Is there an accessible emergency response fund for PHEM at the regional level?

If yes how much allocated. Yes No

Q16. Mention anticipated epidemics (If yes please indicate Zone/Woreda at risk and risk population per anticipated risk :(Use the back side) Pregnant, under five5 children _____ Lactating _____ women _____

Q17. Public Health Emergency Management Yes No

Q18. Is there a Public Health and Nutrition Emergency Preparedness and Response plan? Yes No If yes, is the plan budgeted/ funded? Yes No

Q19. Is there a trained staff on PHEM basic level (Regional/Zonal/Woreda/HFs) Yes No? If yes specify the number of trained personnel per level:

Region/Total: Female ___ Male _____ Zone: Female _____ Male _____

Woreda: Female ___ Male ___ Yes No

Q20. Is there a Regional/Zonal trained Rapid Response Team (RRT)? Yes or No

Q21. Is there a trained staff on Emergency nutrition management at all levels?

If yes specify the no. Total: Male ___ Female ___

Disease outbreaks

Q22. Was there an outbreak in the last 3 months? YES _____ NO _____

If yes, specify the type of disease

Type of outbreak ___ Number of cases _____ Deaths _ (specify the time period) _____

Q23. Is there any on-going outbreak of any disease? YES _____ No _____

Type of outbreak ___ Number of cases _____ Deaths ___ (specify the time period) _____

SECTION III: RISK FACTORS

Q25. Diseases Risk factors for epidemics to occur Yes No

Q26. Malaria endemic area s Yes No

Presence of malaria breeding site Yes No

Interrupted or potentially interrupting river Yes No

Was there any prevention and control activities Yes No

Number of Malaria kebeles and total population in these Kebeles _____ Pop _____

Q27. Meningitis was there a Meningitis epidemic in the last 3 years (If yes specify date) Yes No

Q28. AWD was there an AWD epidemic in the last three years

(If yes specify date) ___ _no _____

Q29. Is there ongoing measles outbreak Yes No

Annex II: Drought Assessment Checklist for stakeholders (different sectors)

Role and response sector _____

Involvement in which drought response(s) _____

Q1. How reliable was the needs assessment data used for planning?

Q2. To what extent do the planning documents and priorities reflect the needs and priorities of affected people and vulnerable groups?

Q3. Agriculture Emergency livestock interventions (fodder, water, vaccination, destocking)

Disaster mitigation measures (irrigation, crop, and vegetable production, fodder production)

Q4. Education School feeding Activities to create a protective environment for school-age children and adolescents

Q5. Shelter / Provision of emergency shelter & materials Population movement tracking, registration, profiling Shelter resilience & disaster risk mitigation and Food distribution Preparedness measures

Q6. Health:-Provision of life-saving health services Detection and response to epidemic disease outbreaks

Nutrition SAM identification and treatment MAM identification and treatment

Caring and feeding practices for children and pregnant and lactating women Continuum of case integrated response with WASH, Health, Food / Cash

Q7. WASH Emergency water supply for human and livestock consumption Sanitation services Hygiene promotion Rehabilitation of non-functional WASH infrastructure

Q8. Were any geographical areas under- or over-served during the response? Why?

Q9. Based on your own and collective monitoring, did aid reach those most in need? If not, who was (likely) left out?

Q10. How were cross-cutting issues (gender, age, disability, and environment) integrated with the response? Was this adequate? What else could have been done?

Q11. What measures did your organization put in place to ensure that the response was conflict-sensitive? Were those issues discussed in coordination fora?

Q12. In your view, did the balance between different sectors and types of interventions adequately reflect needs? If not, which sectors were over-or under-served? Why?

Q13. Do you know of any unintended effects the response has had on drought-affected people and communities?

Q14. What kind of capacity strengthening measures for the government did your response include?

Q15. Do you have any evidence on whether government service delivery improved?

Q16. Did the response strengthen government service provision? How? Do you have any evidence on this?

Q17. What role did development actors play during the response? Was this appropriate/sufficient? If not, what other opportunities would there have been to link to development actors?

Q18. Did you participate in any way in the drought response?

Q19. Were you approached by any humanitarian actors and did you participate in relevant coordination for?

Q20. Would there have been other opportunities for involving or linking with development actors during the response?

Q21. Do your regular programs include disaster risk reduction, mitigation, or preparedness activities?

Q22. Do you have any crisis modifiers or similar ways to adapt your response in your organization?

Q23. Do you believe that the relationship between the humanitarian system and the Government was handled appropriately? Why / why not?

Q24. Did you work with national or local NGOs during the response? Why / why not? If yes: Did you include any capacity strengthening measures in your activities?

Q25. What was your role in the response?

Q26. Did the response strengthen your capacities? Why / why not? How?

Q27. Would there have been any other opportunities for involving national and local NGOs and strengthening their capacities?

Q28. How effective was coordination in your sector/cluster? Why?

Q29. Which other sectors/clusters did you (and your cluster) coordinate with?

Q30. How well did overall strategic coordination and inter-cluster coordination work? Why? Do you know of any examples where duplications were avoided through coordination?

Q31. Do you know of any gaps that could not be filled despite coordination?

Q32. Did your organization have funding available in time to start the response? If not, when did funding arrive for your biggest program, and when did you begin implementation? Were there any delays? Why?

Q33. Was there a strong collective effort to mobilize resources? If so, how successful was it? Did donor policies foster cooperation or engender competition among humanitarian agencies?

Q34. Were there any other factors that either enabled or hindered an effective response? Were there any that were not working or were missing? What are your top three recommendations for improving the way the humanitarian system in Borena functions, in order of priority?

Q35. What specific steps could be taken to achieve this?

Q36. Are there any documents we should read or any relevant data you could share?

Annex II: Checklist drought assessment at Community level

Name of Woreda: _____ Name of Kebele: _____ Mobile home other

Demographic Characteristics

Age of the person interviewed: _____

Sex of the person interviewed: Male Female

Q1. Does your HH own or rent your place of residence?

Own Rent Other-----

Q2. Including yourself, how many people live in your HH?

Q3. Including yourself, how many people living in your HH are Less than 2 years old? 2-17 years?
_____ 18-64 years? _____ 65+ years?

Communications

Q4. What is your HH's primary source of information about drought? (Check ONE)

Newspaper TV Friends Family members radio Work social media

Place of worship other,

Q5. What is your HHs most preferred method for receiving information about an emergency event? (Check ONE) TV Radio Cell phone social media Word of mouth other

Water Supplies

Where did your HH water come from before the drought hit last year? (Mark EACH as applicable.) canned water, a private, municipal, or local water system Private wells, surface water (lake, river, spring), and other

Q6a. If yes, has the amount of water produced at your HH lessened in the last 12 months? Yes No

Do you or anyone in your home use tap water for drinking or cooking?

Does your family know of any problems with the quality of your tap water?

avoiding using tap water, yes or no

Q8a. What kinds of problems, if any?

Q9. Has your HH noticed a change in the colour, clarity, flavour, or odour of the water? (Mark EACH as applicable.) None in terms of appearance, transparency, odour, or flavour. Preventing Drought and assistance practices.

Q10. Have water shortages caused you or your family members to reduce water use? NA, Yes, No,

Q11: Has your HH taken any further measures to conserve water? Yes No

Q12. If the drought extended this summer, will your HH be able to further reduce water use? Yes No

Q13. Is there anyone in your HH that needs help because of the drought? Yes, No, or NA.

Q13. If so, what kind of help did your HH require? (Mark EACH as applicable.)

drinking, medical, and well-drilling purposes Aid with finances, food assistance, job placement, wildfire suppression, energy or utility assistance, and financial relief. Additional,

Q14. What kind of assistance did your family receive throughout the droughts? None, Food, vaccines for animals, and animals

Health

Q15: How has the drought affected your family? One youngster (male or female) and at least one adult (male or female) died. At least one individual (male or female?) got sick. We moved; our livestock or crops died; we sold our property; other: _____

16. The state of one's health (including malnutrition, infectious, True /False

Q17. More animals have been seen in residential areas.

True or False:

Q18.I saw more dead animals (like fish). True or false:

Q19. More mosquito breeding places have been spotted.

True or false:

Q20. More ticks were seen in True or False

Q21. Feel uncomfortable swimming in public bodies of water due to "swimmers itch," algae, etc.

Q22. There have been noticeable changes to the landscape, such as fewer ponds and diseases, and other disorders) observation of the drought ---- Annexes

Annex 1 Questionnaire for malaria outbreak investigation of Abobo Woreda, west Ethiopia

General knowledge

Respondent classification Case Control

Date of data collection----- Name of data collector----- Region -----Zone
_____ Woreda _____ Kebele _____ Got/Village _____

Place: Longitude _____ Latitude _____

Part one: Socio-demographic information

SN	Questions	Response/answers	Skip
----	-----------	------------------	------

M101 Respondent identification

M102 Age in years

M103 Sex Male Female

M104 Address Woreda _____ Kebele _____

Village _____

M105 Occupation Employed _____ Unemployed _____ Student _____ Pastoralist _-_
farmer _____

M106 Total family members (size) _____

M107 Ethnicity Anuak _____ Kambata _____ others _____

M108 Religion Catholic _____ Muslims _____ protestant _____

M109 Marital Status Single __ married __ Divorced _____ Widowed

M110 Education status No formal __ education _____ primary _____ secondary _____ Diploma _____
Degree _____

Part Two: Clinical Manifestations (Only for participants)

M201 What were your first symptoms? _____, _____, _____,

M202 When was the date of onset of the first symptoms? _____(dd/mm/yy)

M203 What were other symptoms yes No

1. Fever?

2. If yes, duration in a day
 3. Constant fever
 4. Every other day
 5. Vomiting
 6. Diarrhea
 7. Anorexia (appetite loss)
 8. Head ache
 9. Sweating
 10. Chilling & fever
 11. Weakness
 12. Cough
 13. Back pain
 14. Muscle pain
 15. Rigor
- M204 Did you visit health facility?
- M205 When did you visit Health facility?
- M206 Did you get treatment?
- M207 What treatment did you get? Coartem,
 Chloroquine
 Quinine
 Was it for Pf
 Was it for pregnant and <5
 What was it pregnant and <5 kg?
 Quinine injection
 Was it for sever malaria
 Other treatment given
- M208 Did you recover completely after the treatment?
- M209 Place of residence during 2 weeks before onset of illness?_____
- M210 Blood sample taken?

- M211 If yes to M210 1. Positive?
2. Negative

Part three: for complicated malaria

- M301 Altered consciousness(confusion, sleepy, coma, Yes No
M302 Not able to drink or feed? Yes No
M303 Severe dehydration Yes No
M304 Persistent Fever Yes No
M305 Frequent vomiting Yes No
M306 Convulsion or recent history of convulsion Yes No
M307 Unable to seat or stand up Yes No
M308 Pallor Yes No
M39 No urine output for the last 24hrs Yes No
M310 Bleeding Yes No
M311 Jaundice Yes No
M312 Difficult breathing Yes No
M313 Other conditions that cant be managed at this level Yes No

Part Four: Risk factors(for both case and control)

- M401 Specific living area _____
M402 Sleeping areas 1, inside home 2. Outside home
M403 Do you stay outside over night Yes No
M404 Is there any person in your home with similar sign and symptom? Yes No
M405 Did you ever traveled outside your village in the past 2-3 weeks?
M406 If yes to QM405, please indicate Date if travel_____
Place of travel_____
Date of return_____
M407 If yes to QM405, Is there any person with the same symptom (diseased)in the place where you have been? Yes No
M408 Is there a similar sick patients in your home? Yes No
M409 Do you have bed net in your home ? Yes No

- M411
- M410 If yes how often do you use? 1. Always 2 sometimes 3, Never
- M411 Slept under LLIN 2 weeks before onset of symptom Yes No
- M412 If yes to MQ409Do mothers and children given priority of using bed nets? Yes No
- M413 Was Indoors Residual Sprayed(IRS) this year? Yes No
- M414 If yes to MQ413, When? _____
- M415 Do you wore full extremity covering cloth in evening hours boyh in in and outdoors? Yes No
- M416 History of malaria in the past two months Yes No
- M417 If yes to M416,Have treated? Yes No
- M418 Have you stagnant water for 3-5 days following rain fall? Yes NO
- M419 Do you use windows or door curtains/close during evening to minimize mosquito entry? Yes no

Part Five :Environmental investigation

- M501 Place of stay during night _____
- M502 Is there any artificial water holding container close to your home? YES NO
- Plant in the containers
 - Flowers/pots
 - Plant with temporary water
 - P00ls
 - Open deep well
 - Broken glass/bottle
 - Cans
 - Plastic containers
 - Gutter to collect rain water
 - Ed water storage septic tankeruncover
- M503 Presence of mosquito vectors /mosquito breeding site around the home vicinity
- M504 If M5043 yes, presence of larvae in breeding site around the home or vicinity?
- M505 Do you use repellents
- M506 Protective clothing

M507 Waste collection

M508 Unprotected irrigation

M509 Presence of intermittent rivers close to the community

M510 Is there flooding of rivers in the kebele following the rain fall?

Part Six: Awareness Assessment

M601 What are sign and symptoms of malaria? yes NO

1. Fever
2. Vomiting
3. Anorexia
4. Chills and shivering
5. Headache
6. Sweating
7. Back pain
8. Arthralgia
9. weakness

M602 How it transmitted?

1. By mosquito bite
2. Blood transfusion
3. Mother to child
4. By flies
5. breathing
6. body contact
7. By hunger

M603 How it can be prevented? 1. Early diagnosis & treatment

2. House spray with insecticides
3. Use of mosquito bed
4. Environmental hygiene
5. By using good nutrition

M604 What may increase someone's risk of contracting malaria? health 1. Staying out late at night poor

- 2. Stagnant water near home
- 3. Contact with malaria patient
- 4. Eating contaminated food

Annex 2 Cholera outbreak investigation

1 Questionnaire for Routine HMIS for HIV/AIDS Case Based Surveillance (CBS) questionnaire Identifiers: REGIONAL/ZONAL LEVEL

Interviewer	Date	Surveillance System Respondent
Assessment team _____		

General

I. Availability of National surveillance manual

- 1. Is there national manual for surveillance? Yes / No / not applicable/ unknown
- 2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

- 1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable
- 2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

- 1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
- 2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
- 3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis
 1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 3. Perform trend analysis?
 4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 7. Who is the responsible for the analysis of data?_____
 8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed
 9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IV. HIV Case Investigation
 1. Per cent of suspected HIV cases that were investigated in the past 1 year _____
 2. Number of cases suspected in the past 1 year _____
 3. Number of those investigated _____ Obs. Reports
 4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
 5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

 6. The number of outbreaks where the outcomes had been put into practice:_____ -----ce report]
 7. Of the districts that looked at cases, % looked for risk factors _____
 8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents, _____

9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____



8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____



2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown

2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable

2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown

3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis
 1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 3. Perform trend analysis?
 4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 7. Who is the responsible for the analysis of data?_____
 8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed
 9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IV. HIV Case Investigation
 1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
 2. Number of cases suspected in the past 1 year _____
 3. Number of those investigated_____ Obs. Reports
 4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____

5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

6. The number of outbreaks where the outcomes had been put into practice:_____-----ce
report]

7. Of the districts that looked at cases, % looked for risk factors_____

8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into
incidents,_____

9. % took action on the information (including controlling outbreaks, strengthening surveillance, and
community actions)._____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable /
unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for
HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in
past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case
management protocol maintained.

If so, list the following:_____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak
management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____
2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No
2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No
2. Which organizations must get notifications of surveillance data?
3. Do you think that extra information gathered about a case takes up time? Yes/No
4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes
5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No
2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

IV. Availability of National surveillance manual

3. Is there national manual for surveillance? Yes / No / not applicable/ unknown

4. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

V. Case detection and registration

3. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

4. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

VI. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

4. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
5. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
6. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- VI. Capability to report it to the next level through e-mails, telegram fax, telephone.
 - VII. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
 - VIII. Data analysis
 10. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 11. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 12. Perform trend analysis?
 13. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 14. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 15. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 16. Who is the responsible for the analysis of data?_____
 17. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed
 18. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IX. HIV Case Investigation

11. Per cent of suspected HIV cases that were investigated in the past 1 year_____
12. Number of cases suspected in the past 1 year _____
13. Number of those investigated_____ Obs. Reports
14. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
15. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

16. The number of outbreaks where the outcomes had been put into practice:_____ [-----ce report]
17. Of the districts that looked at cases, % looked for risk factors_____
18. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
19. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____
20. How many districts [noted in the final report] used the data to take action

X. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

5. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)
6. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable
7. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

8. Epidemic Response

The existence of a budget provision for responding to epidemics

D. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

E. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

F. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources? _____

Attributes and level of usefulness questionnaire:

- 1. The entire populace is being watched _____
- 2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

- 1. to identify early index testing of these prioritized HIV positives? Yes/ No
- 2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

- 1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No
- 2. Which organizations must get notifications of surveillance data?
- 3. Do you think that extra information gathered about a case takes up time? Yes/No
- 4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes
- 5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats?
Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____%

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

DISTRICT (INTERMEDIATE LEVEL) QUESTIONNAIRE

Identifiers	District
Assessment team	Region /province
Date	country
Interviewer	surveillance system
Respondent	

% of districts with a national surveillance manual accessible

1. Does this location have a national manual for surveillance?

Obs Observe's guide to national surveillance:

Whether it's true or false is undetermined. Not Relevant

Case confirmation, first _____

Districts that can transmit samples to a higher-level lab as a percentage

2. Can the district send samples to a lab with more advanced equipment?

Yes no unknowns Not relevant

% of districts with policies for transporting specimens to the next level and collecting, handling, and handling new specimens

1. Has the district established policies for the collecting, management, and transportation of specimens to the next stage?

Yes no unknown Inapplicable

percent of websites with country-specific forms at all times over the previous six months

1. Do you currently have any of the necessary forms for the nation from the previous six months?

Yes no unknown Inapplicable

Percentage of health facilities that submitted reports to the district level for each reporting period over the previous three months:

1. The number of reports received over the past three months vs what was anticipated

Weekly: 12 times the amount of healthcare facilities

As soon as possible: _____/--- times as many medical facilities

(Use national deadlines)

1. The number of timely submitted monthly reports is ____/12 times the number of healthcare institutions.

2. Twelve times as many reports were submitted on time as there were healthcare institutions.

3. Percent of districts with access to telephone/, fax/, radio/ or email/ for reporting to the next level

What to report:

Any of the following: a. mail b. fax c. phone d. radio e. electronic f. other enhancing reporting 1. How could reporting be made better?

I. Data analysis _____

2. I. The proportion of websites that: List data by individual (case-based, outbreaks, sentinel)

Obs Observed data breakdown by sex and age

If so, No If not, Unknown Not relevant

1. Describe location-based data

Data by location (locality, village, job site, etc.) as observed

If so, No If not, Unknown Not relevant

2. Explain data by time.

Observed data description by time

If so, No If not, Unknown Not relevant

3. Conduct a trend analysis

Obs Cases by time line graph observed

In agreement No Inconclusive Not relevant

4. List:

5. Each priority disease should have an action threshold.

Do you have an HIV-related action threshold?

Yes There are no unknowns Not relevant

6. If so, what exactly? Increase in cases by _____%

7. Utilize the proper denominators

Obs Observed the presence of demographic information at the site, such as population under five years old, population by village, and overall population.

In agreement No Inconclusive Not relevant

Who is in charge of data analysis? _____

2. How frequently do you analyze the information gathered?

Daily, weekly, monthly, quarterly, every two weeks, as needed, etc.....

Index case testing _____

The proportion of suspicious instances that were looked into over the previous six months:

Number of suspected outbreaks over the last 12 months: _____

Obs Of those, how many were investigated? (Watch reports, and if you can, get copies.) _____

% of local government units that have ever looked into an outbreak

[Number of districts assessed that have ever conducted an outbreak investigation, Number of districts assessed to obtain indicator]

3. Has your district ever investigated an outbreak?

Yes No Unknown Not relevant

I. Epidemic readiness _____

1. The proportion of districts with an epidemic preparedness and response plan (Obs) Have a written plan for preparing for and responding to epidemics

Yes No Unknown Not relevant

2. In the last year, what percentage of districts always keep emergency medicine and supply supplies?

Has the district had emergency medicine and supply inventories on hand at all times in the last year?

Obs observed the medicine and supply inventories at the time of the evaluation.

Yes No Inconclusive Not relevant

The proportion of districts where the most recent epidemic (or outbreak) was felt during a scarcity of medications, vaccinations, or supplies

During the most recent epidemic (or outbreak), did the district encounter a lack of medications, vaccinations, or supplies?

Yes There are no unknowns Not relevant

2. Availability of finances or the existence of a budget line for epidemic response

Is there a budgetary allocation or way to receive money for fighting an epidemic?

In agreement No Inconclusive Not relevant

3. % of districts have a committee for managing outbreaks

Obs Observed epidemic management committee meeting minutes (or reports). Yes No
Unknown Not applicable

1. Per cent of districts that have rapid response team for epidemics

Does the district have a rapid response team for epidemics?

Yes No Unknown Not applicable

I. Responses _____

2. Per cent 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

3. Per cent of districts that responded within 48 hours of notification of most recently reported outbreak

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

Yes No Unknown Not applicable

4. Per cent 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

. Feedback_____

5. % of sites publish written reports on a regular basis to share surveillance data. How many written reports on feedback has the district created in the past year?

Obs noticed the existence of a written report that is frequently created to communicate surveillance data (at the district and higher levels).

Yes No Unknown Not relevant

6. % of the sites that have gotten a report or bulletin from a higher level regarding the data they have provided over the past year

How many reports or feedback bulletins did the district receive in the previous year?

Obs Observed at least 1 report or bulletin on the data they supplied from a higher level during the previous year at the district level.

In agreement No Inconclusive Not relevant

6.% of those who were under supervision in the last six months

How frequently did you receive supervision over the previous six months?

Obs Report of observed supervision or any other proof of supervision in the previous six months

Yes no unknown Not relevant

7. Of those who were under supervision in the past six months, what percentage of people had a supervisor from a higher level assess surveillance procedures that were suitable for their level?

Obs Reports of observed supervision or any other supporting information for a proper examination of surveillance procedures

In agreement No Inconclusive Not relevant

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

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

(Obtain required number of visits from central level)_____

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

Reason 1 _____

Reason 2 _____

Reason 3 _____

% of health professionals with responsibility are knowledgeable about disease surveillance

Have you received disease surveillance training?

Yes There are no unknowns Not relevant

7. If so, when, where, for how long, and by whom?

8. The percentage of districts with personnel trained in epidemic management and surveillance

How many of your employees in the district have received training in epidemiology and surveillance?

a. . Resources _____

b.

c. The percentage of locations with the following amenities: logistics a. electricity b. bicycles c. motor cycles d. vehicles

d. . Data management a. Office supplies b. Calculators c. Computers d. Printers e. Statistical software

6. Communication

A telephone service, a fax machine, a radio station, and computers with modems.

7. Resources for information, education, and communication

A. Posters B. Megaphone C. Flipcharts or Image Box D. TV and VCR E. Generator F. Screen G. Projector (Movie) H. Other

8. Sanitation and hygiene supplies

a. Sprayer b. Disinfectant b.

Coordination of surveillance, part II: _____

6. The existence of a focal unit or individual at the district level for surveillance coordination.

Is there a district epidemic management committee focal person for surveillance coordination?

3. Contentment with the surveillance system _____ surveillance system

What do you think of the surveillance system?

Yes No not, Unknown Not relevant

6. If not, what changes could be made to the surveillance system?

7. Contentment with the monitoring system _____

7. Possibilities for blending

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

Questionnaires for the Shebedino District, ----- Zone, Sidama Region, Ethiopia, Health Profile Assessment, May 2021

1. Organizational structure

1.1 Region _____ Zone ____ Woreda ____

Woreda boundaries include those in the north, south, east, and west.

1.3 Rural _____ Urban _____ Total number of kebeles

2. The region's historical features (Culture and Tourism Office)

2.1 Name: Woreda _____

2.2 How and Why the Name Was Given _____

2.3 In what year did the Woreda come into existence?

2.4. Any further historical detail

3. The geographical and climatic situation

3.1. Map of Woreda _____ Area (distance from zone town)

3.2-----through AA -----Direction-----

3.3 Height: ----- Latitude ----- Longitude -----

3.4 Climatological Zones - Scottish ----- % Midland ----- % Lowland ----- %

3.5 Access to major roads _____

The area of the woreda (km²) is 3.6.

Annual temperature (average) _____ Max ----- Min -----

3.9 Inches of average annual rainfall _____ Max ----- Min -----

3.4 Seasonal cycles

4. Population Size and Structure

Population as a Whole: _____ Male ----- Female ----- gender ratio -----

Total Rural Population: 4.2. _____ Male _____ Female _____

Urban Population as a Whole: ----- Male ----- Female -----

Total Population: 1yr _____, 5yrs _____, 15yrs _____, >64yrs _____, Women 15-49yrs _____

S/N Name of the kebele Total population

1 M F Total

2

3

4

5

6

4.6. Average size of the entire household: -----

4.7. Population pyramid by age and sex, figure

4.8. Language/Ethnic Composition: Sidama ----- Oromo ----- Amhara ----- Tigre ----- WOlaita ----- Gurage ----- Others -----

Orthodox, Muslim, Protestant, Catholic, and Others are the six major religions. economic circumstances

5.1 Agriculture is the primary industry and source of revenue. -----

• Grazing grounds -----the growing season----- • Amount of land-----

• Animal stock _____ • Trade _____

• Other businesses

5.2 Average annual income per HH _____

5.3 primary crops -----

5.4 Unemployment rate, employment rate, and unemployment -----

6. School health and education (Education Bureau)

6.1 The institution's identification number is K.G. _____.

- Predominantly school
- Secondary _____
- Preparatory _____
- TVET-----
- University/College _____

6.2 The total number of teachers in Wereda Male: _____ Female: ____

6.3 Total Number of School-Age Children (Goal) _____

Total Enrolments, 6.3.1 Male: _____ Female: _____

6.3.2 Six-month school dropout rate _____

6.3.3 If school dropouts occur, why

6.4 The community's level of education

Total number of educated people:

6.4.1 Name Gender Male Female _____

Health-related school activities

6.5.1 Water supply: water supply in schools

6.5.2 Restrooms: Schools with working latrines (male and female)

6.5.3 HIV/other health groups in schools 7. Infrastructure (transportation, telecommunication, power, water, etc.)

How many of the health posts have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many of the health centers have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many hospitals have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

7.4 Water source: _____

7.4 Number of water supply pipes 7.6 Coverage of the woreda by water supply

7.7: Is the water chlorinated? _____

7.8 Chlorination frequency _____

8. The woreda is experiencing a disaster.

- 8.1. Has the woreda experienced any recent natural or man-made disasters? _____
- 8.2. In the past year, were there any recent disease outbreaks or other public health emergencies?
- 8.3. If yes, - _____
- 8.4. incidents _____ and deaths _____

9. Vital Statistics and Health Indicators

- rate of neonatal death -----
- The infant mortality rate (IMR) was _____. (There were ___ deaths in total last year.)
- Total number of live births: ____ Total number of stillbirths: ____
- Number of neonatal deaths overall
- Child Mortality Rate: ____ (total fatalities in the last year were 15 years old)
- The crude birth rate is:
- Crude Mortality Rate: (____ total deaths in the past year)
- _____ Maternal Mortality Rate (total number of maternal deaths in the past year)
- Prevalence of contraception _____
- Acceptance rate for contraceptives: _____
- ANC rate (the proportion of first ANC visits among all projected pregnancies) _____
- ANC rate (the proportion of fourth ANC visits among all anticipated pregnancies) _____
- Rate of postnatal coverage
- The proportion of deliveries attended by trained birth attendants
- BCG vaccination coverage (for women and children): _____ (____%)
- OPV-0-No _____ (____%) OPV -1: No _____ (____%) OPV-3: No _____ (____%)
- Penta-1-No (%) _____ No. _____ in penta-3 (%)
- PCV -1: No _____ (____%) PCV -3: No _____ (____%) No _____ (____%) ,
- TT coverage-----

10. Health Services

10.1 Type and Number of health Institution

S/N	TYPE	NUMBER		REMARK
		Government	Private	
1	Hospitals			

- 2 Health centres
- 3 Health posts
- 4 Pharmacy
- 5 Drug store
- 6 Rural drug venders
- 7 Laboratory
- 8 Clinics Primary
 - Medium
 - Higher
- 9 Special clinics Dental
 - Mental
 - Pediatrics

10.2 Healthcare facility to population ratio:

10.3 Medical facility: Pop. HC: Pop _____

10.4 Health service coverage according to HP: Pop

10.5 Health professionals: Type and Number

S/N	Category	Government	NGOs	Total	remarks
1	Specialists (all type)				
2	Physicians				
3	Health officers				
4	BSc Nurses				
5	Clinical nurses IV				
6	Midwifery IV				
7	Lab. technician				
8	Lab. technologist				
9	Druggist				
10	pharmacist				
11	Environmental health				
12	MPH				

- 13 HEWS
- 14 HMIS
- 15 OTHERS

Master of Public Health (MPH): Doctor: pop ratio ____; Nurse: pop ratio ____; HEW = Health Extension Worker HEW: pop ratio ____ midwife-to-pop ratio -----

The top 10 causes of morbidity and mortality are 10.6.

10.6.1. The top 10 morbidity-related causes of OPD visits

S/N Adult Pediatric

10. Budget allocation for health care: _____

11. The woreda (birr) has an annual budget of \$_____.

_____ (____%) of the annual budget is set aside for healthcare or healthcare organizations.

Annual budget allocation growth, expressed as a percentage relative to the prior year

Total NGO funds received for the following purposes/programs: _____

Services for Community Health:

12.1. The current state of the services offered by community health workers, namely 12.1.1. The number of TBAs and their respective responsibilities

12.1.2. The number of CHWs and CHPs and their responsibilities are as follows:

12.1.3. HEWs' accountability: _____

12.1.4. Others _____

12.2 Environmental Hygiene and Sanitation

12.2.1. Latrine coverage (percentage) and latrine utilization (percentage)

12.2.2. Total coverage of the safe water supply is _____ (%).

12.2.3. Coverage of safe water sources 12.2.4. Primary source of water supply _____

12.2.5. Others _____

12.3. Medical instruction

13. Focusing on the eight PHC components, the status of primary health care components

Delivery)

13.1MCH -----, ANC -----, PNC -----)

13.2 FP: Methods, Contraceptive Prevalence, and Contraceptive Acceptance

13.3 EPI (cold chain, vaccination, outreach service) _____

13.4 Sanitation and environmental health

13.4.1 Latrine coverage and use rate _____

Solid waste management: _____

13.4.3 Managing liquid waste _____

13.5 Endemic diseases; 13.5.1 Malaria: At danger are all kebeles and populations in them. _____

- ITN coverage, which now includes the present district
- This year, is there an IRS? (No kebeles) _____ HH protected population ____ covered _____
- Total cases per year, deaths per year, and 5-year cases ____ fatalities (5 total)
- Lack of malaria supplies (RDT, for example) _____
- Other problems _____ 13.5.2 Leprosy and TB

• Total cases of TB _____

• PTB negative _____

• Positive for PTB _____

• E PTB _____

• Rate of TB detection: _____

• The success rate of TB Rx

• _____ TB cure rate

• Success rate for TB medications: _____

• Defaulter on TB _____

• Death after using TB medication _____

All TB patients had their HIV tested. _____

• Total cases of leprosy on prescription 13.5.3 HIV/AIDS: • Total population screened for HIV in the previous year • VCT _____ PITC _____ PMTCT _____

There are currently no known HIV-related deaths.

• The number of new HIV cases per year is _____.

Overall PLWHA _____ On ART _____ In relation to Pre-ART _____

• Additional HIV preventive measures _____ 136. nutrition (malnutrition-related OTPs, SC, TSF, CBN, and PSNP activities), HO, and early warning

- Total OTP sites, _____ total OTP admissions per year _____
- The total number of SC locations, new locations each year, and admissions to SC as a whole per year are all _____.
- Is there a TSF (targeted supplementary feeding) or CBN (community-based nutrition) initiative in the woreda? If the program includes youngsters, _____ () _____ (No & %) • general state of food security

Lack of essential and vital medications _____

13.8. What do you consider to be the district's primary health issue(s)?

Annex 4 Checklist for drought derived nutritional assessment at Zonal and Woreda Health Department

Interviewer name _____ Institution: _____

Interview Date: DD-----MM----YYYY

Region: OROMIA

Zone: East Bale

The main contact at this location

Name: -

Position:

Tel:

SECTION I: SOCIO-DEMOGRAPHIC PROFILE

Q1. Population: Woreda total population Male: -----Female: -----Under -----

No. of women of reproductive age (age 15-49 yrs.) -----

No. of pregnant women: -----

Q2. Special Population (if any) Pastorals --Refugees ---IDP---- Migrant Workers -----

Q3. Number of HCs ----, Number of HPs -----

Q4. Number of Mobile health and Nutrition teams-----

Q5. Number of HEWs -----

Water availability at health centers (HC) -----

Q6. No. of health centres -----Number of Health Center with water access -----

No. of Health Center without water access -----

SECTION II: Coordination and management systems

Q7. Are there PHEM Officers at the Regional level? If yes how many Yes No

Q8. Does the RHB/Zone Health Office regularly report PHEM report as scheduled dates? Observe copies and comment Yes No

Q9. Are there PHEM Officers/focal persons at Woreda and HC levels?

If yes how many are there in the woreda level Yes No

If yes how many are there in the HC

Q10. Do the Woredas, health facilities, and HEWs regularly report PHEM report as scheduled dates? Observe copies and comments Yes No

Q11. Are all relevant government, NGOs, and UN agencies represented at Regional PHEM? Yes No no hear

Q12. Is there a multi-sector health coordination forum? If yes how frequently meet? Yes No

Q13. Is there a Public Health Emergency preparedness and response plan?

Q14. Does it include reproductive health? Yes No

Q15. Is there an accessible emergency response fund for PHEM at the regional level?

If yes how much allocated. Yes No

Q16. Mention anticipated epidemics (If yes please indicate Zone/Woreda at risk and risk population per anticipated risk :(Use the back side) Pregnant, under five5 children _____ Lactating _____ women _____

Q17. Public Health Emergency Management Yes No

Q18. Is there a Public Health and Nutrition Emergency Preparedness and Response plan? Yes No If yes, is the plan budgeted/ funded? Yes No

Q19. Is there a trained staff on PHEM basic level (Regional/Zonal/Woreda/HFs) Yes No? If yes specify the number of trained personnel per level:

Region/Total: Female ___ Male ___ Zone: Female ___ Male ___

Woreda: Female ___ Male ___ Yes No

Q20. Is there a Regional/Zonal trained Rapid Response Team (RRT)? Yes or No

Q21. Is there a trained staff on Emergency nutrition management at all levels?

If yes specify the no. Total: Male ___ Female ___

Disease outbreaks

Q22. Was there an outbreak in the last 3 months? YES _____ NO _____

If yes, specify the type of disease

Type of outbreak _____ Number of cases _____ Deaths _ (specify the time period) _____

Q23. Is there any on-going outbreak of any disease? YES _____ No _____

Type of outbreak _____ Number of cases _____ Deaths _ (specify the time period) _____

SECTION III: RISK FACTORS

Q25. Diseases Risk factors for epidemics to occur Yes No

Q26. Malaria endemic area s Yes No

Presence of malaria breeding site Yes No

Interrupted or potentially interrupting river Yes No

Was there any prevention and control activities Yes No

Number of Malaria kebeles and total population in these Kebeles _____ Pop

Q27. Meningitis was there a Meningitis epidemic in the last 3 years (If yes specify date) Yes No

Q28. AWD was there an AWD epidemic in the last three years

(If yes specify date) _____ _no _____

Q29. Is there ongoing measles outbreak Yes No

Annex II: Drought Assessment Checklist for stakeholders (different sectors)

Role and response sector _____

Involvement in which drought response(s) _____

Q1. How reliable was the needs assessment data used for planning?

Q2. To what extent do the planning documents and priorities reflect the needs and priorities of affected people and vulnerable groups?

Q3. Agriculture Emergency livestock interventions (fodder, water, vaccination, destocking)

Disaster mitigation measures (irrigation, crop, and vegetable production, fodder production)

Q4. Education School feeding Activities to create a protective environment for school-age children and adolescents

Q5. Shelter / Provision of emergency shelter & materials Population movement tracking, registration, profiling Shelter resilience & disaster risk mitigation and Food distribution Preparedness measures

Q6. Health:-Provision of life-saving health services Detection and response to epidemic disease outbreaks

Nutrition SAM identification and treatment MAM identification and treatment

Caring and feeding practices for children and pregnant and lactating women Continuum of case integrated response with WASH, Health, Food / Cash

Q7. WASH Emergency water supply for human and livestock consumption Sanitation services Hygiene promotion Rehabilitation of non-functional WASH infrastructure

Q8. Were any geographical areas under- or over-served during the response? Why?

Q9. Based on your own and collective monitoring, did aid reach those most in need? If not, who was (likely) left out?

Q10. How were cross-cutting issues (gender, age, disability, and environment) integrated with the response? Was this adequate? What else could have been done?

Q11. What measures did your organization put in place to ensure that the response was conflict-sensitive? Were those issues discussed in coordination fora?

Q12. In your view, did the balance between different sectors and types of interventions adequately reflect needs? If not, which sectors were over-or under-served? Why?

Q13. Do you know of any unintended effects the response has had on drought-affected people and communities?

Q14. What kind of capacity strengthening measures for the government did your response include?

Q15. Do you have any evidence on whether government service delivery improved?

Q16. Did the response strengthen government service provision? How? Do you have any evidence on this?

Q17. What role did development actors play during the response? Was this appropriate/sufficient? If not, what other opportunities would there have been to link to development actors?

Q18. Did you participate in any way in the drought response?

Q19. Were you approached by any humanitarian actors and did you participate in relevant coordination for?

Q20. Would there have been other opportunities for involving or linking with development actors during the response?

Q21. Do your regular programs include disaster risk reduction, mitigation, or preparedness activities?

Q22. Do you have any crisis modifiers or similar ways to adapt your response in your organization?

Q23. Do you believe that the relationship between the humanitarian system and the Government was handled appropriately? Why / why not?

Q24. Did you work with national or local NGOs during the response? Why / why not? If yes: Did you include any capacity strengthening measures in your activities?

Q25. What was your role in the response?

Q26. Did the response strengthen your capacities? Why / why not? How?

Q27. Would there have been any other opportunities for involving national and local NGOs and strengthening their capacities?

Q28. How effective was coordination in your sector/cluster? Why?

Q 29. Which other sectors/clusters did you (and your cluster) coordinate with?

Q30. How well did overall strategic coordination and inter-cluster coordination work? Why? Do you know of any examples where duplications were avoided through coordination?

Q31. Do you know of any gaps that could not be filled despite coordination?

Q32. Did your organization have funding available in time to start the response? If not, when did funding arrive for your biggest program, and when did you begin implementation? Were there any delays? Why?

Q33. Was there a strong collective effort to mobilize resources? If so, how successful was it? Did donor policies foster cooperation or engender competition among humanitarian agencies?

Q34. Were there any other factors that either enabled or hindered an effective response? Were there any that were not working or were missing? What are your top three recommendations for improving the way the humanitarian system in Borena functions, in order of priority?

Q35. What specific steps could be taken to achieve this?

Q36. Are there any documents we should read or any relevant data you could share?

Annex II: Checklist drought assessment at Community level

Name of Woreda: _____ Name of Kebele: _____ Mobile home other

Demographic Characteristics

Age of the person interviewed: _____

Sex of the person interviewed: Male Female

Q1. Does your HH own or rent your place of residence?

Own Rent Other-----

Q2. Including yourself, how many people live in your HH?

Q3. Including yourself, how many people living in your HH are Less than 2 years old? 2-17 years?
_____ 18-64 years? _____ 65+ years?

Communications

Q4. What is your HH's primary source of information about drought? (Check ONE)

Newspaper TV Friends Family members radio Work social media

Place of worship other,

Q5. What is your HHs most preferred method for receiving information about an emergency event? (Check ONE) TV Radio Cell phone social media Word of mouth other

Water Supplies

Where did your HH water come from before the drought hit last year? (Mark EACH as applicable.) canned water, a private, municipal, or local water system Private wells, surface water (lake, river, spring), and other

Q6a. If yes, has the amount of water produced at your HH lessened in the last 12 months? Yes No

Do you or anyone in your home use tap water for drinking or cooking?

Does your family know of any problems with the quality of your tap water?

avoiding using tap water, yes or no

Q8a. What kinds of problems, if any?

Q9. Has your HH noticed a change in the colour, clarity, flavour, or odour of the water? (Mark EACH as applicable.) None in terms of appearance, transparency, odour, or flavour. Preventing Drought and assistance practices.

Q10. Have water shortages caused you or your family members to reduce water use? NA, Yes, No,

Q11: Has your HH taken any further measures to conserve water? Yes No

Q12. If the drought extended this summer, will your HH be able to further reduce water use? Yes No

Q13. Is there anyone in your HH that needs help because of the drought? Yes, No, or NA.

Q13. If so, what kind of help did your HH require? (Mark EACH as applicable.)

drinking, medical, and well-drilling purposes Aid with finances, food assistance, job placement, wildfire suppression, energy or utility assistance, and financial relief. Additional,

Q14. What kind of assistance did your family receive throughout the droughts? None, Food, vaccines for animals, and animals

Health

Q15: How has the drought affected your family? One youngster (male or female) and at least one adult (male or female) died. At least one individual (male or female?) got sick. We moved; our livestock or crops died; we sold our property; other: _____

16. The state of one's health (including malnutrition, infectious, True /False

Q17. More animals have been seen in residential areas.

True or False:

Q18.I saw more dead animals (like fish). True or false:

Q19. More mosquito breeding places have been spotted.

True or false:

Q20. More ticks were seen in True or False

Q21. Feel uncomfortable swimming in public bodies of water due to "swimmers itch," algae, etc.

Q22. There have been noticeable changes to the landscape, such as fewer ponds and diseases, and other disorders) observation of the drought ---- Annexes

Annex 1 Questionnaire for malaria outbreak investigation of Abobo Woreda, west Ethiopia

General knowledge

Respondent classification Case Control

Date of data collection----- Name of data collector----- Region -----Zone
_____ Woreda_____ Kebele_____ Got/Village_____

Place: Longitude _____ Latitude_____

Part one: Socio-demographic information

SN Questions Response/answers Skip

M101 Respondent identification

M102 Age in years

M103 Sex Male Female

M104 Address Woreda _____ Kebele_____

Village_____

M105 Occupation Employed_____ Unemployed _____ Student_____ Pastoralist_ - _
farmer_____

M106 Total family members (size) _____

M107 Ethnicity Anuak_____ Kambata_____ others_____

M108 Religion Catholic _____ Muslims_____ protestant _____

M109 Marital Status Single__ married __ Divorced _____ Widowed

M110 Education status No formal__ education _____ primary_____ secondary _____ Diploma _____
Degree_____

Part Two: Clinical Manifestations (Only for participants)

M201 What were your first symptoms? _____, _____, _____,

M202 When was the date of onset of the first symptoms? _____(dd/mm/yy)

M203 What were other symptoms yes No

1. Fever?

2. If yes, duration in a day

3. Constant fever

4. Every other day
5. Vomiting
6. Diarrhea
7. Anorexia (appetite loss)
8. Head ache
9. Sweating
10. Chilling & fever
11. Weakness
12. Cough
13. Back pain
14. Muscle pain
15. Rigor

M204 Did you visit health facility?

M205 When did you visit Health facility?

M206 Did you get treatment?

M207 What treatment did you get? Coartem,

Chloroquine

Quinine

Was it for Pf

Was it for pregnant and <5

What was it pregnant and <5 kg?

Quinine injection

Was it for sever malaria

Other treatment given

M208 Did you recover completely after the treatment?

M209 Place of residence during 2 weeks before onset of illness?_____

M210 Blood sample taken?

M211 If yes to M210 1. Positive?

2. Negative

Part three: for complicated malaria

- M301 Altered consciousness(confusion, sleepy, coma, Yes No
- M302 Not able to drink or feed? Yes No
- M303 Severe dehydration Yes No
- M304 Persistent Fever Yes No
- M305 Frequent vomiting Yes No
- M306 Convulsion or recent history of convulsion Yes No
- M307 Unable to seat or stand up Yes No
- M308 Pallor Yes No
- M39 No urine output for the last 24hrs Yes No
- M310 Bleeding Yes No
- M311 Jaundice Yes No
- M312 Difficult breathing Yes No
- M313 Other conditions that cant be managed at this level Yes No

Part Four: Risk factors(for both case and control)

- M401 Specific living area _____
- M402 Sleeping areas 1, inside home 2. Outside home
- M403 Do you stay outside over night Yes No
- M404 Is there any person in your home with similar sign and symptom? Yes No
- M405 Did you ever traveled outside your village in the past 2-3 weeks?
- M406 If yes to QM405, please indicate Date if travel_____

Place of travel_____

Date of return_____

- M407 If yes to QM405, Is there any person with the same symptom (diseased)in the place where you have been? Yes No
- M408 Is there a similar sick patients in your home?Yes No
- M409 Do you have bed net in your home ? Yes No
- M411
- M410 If yes how often do you use? 1. Always 2 sometmes 3, Never

- M411 Slept under LLIN 2 weeks before onset of symptom Yes No
- M412 If yes to MQ409 Do mothers and children given priority of using bed nets? Yes No
- M413 Was Indoors Residual Sprayed (IRS) this year? Yes No
- M414 If yes to MQ413, When? _____
- M415 Do you wear full extremity covering cloth in evening hours both in and outdoors? Yes No
- M416 History of malaria in the past two months Yes No
- M417 If yes to M416, Have treated? Yes No
- M418 Have you stagnant water for 3-5 days following rain fall? Yes NO
- M419 Do you use windows or door curtains/close during evening to minimize mosquito entry? Yes no

Part Five :Environmental investigation

- M501 Place of stay during night _____
- M502 Is there any artificial water holding container close to your home? YES NO
- Plant in the containers
 - Flowers/pots
 - Plant with temporary water
 - Pools
 - Open deep well
 - Broken glass/bottle
 - Cans
 - Plastic containers
 - Gutter to collect rain water
 - Ed water storage septic tank uncover
- M503 Presence of mosquito vectors /mosquito breeding site around the home vicinity
- M504 If M5043 yes, presence of larvae in breeding site around the home or vicinity?
- M505 Do you use repellents
- M506 Protective clothing
- M507 Waste collection
- M508 Unprotected irrigation
- M509 Presence of intermittent rivers close to the community

M510 Is there flooding of rivers in the kebele following the rain fall?

Part Six: Awareness Assessment

M601 What are sign and symptoms of malaria? yes NO

1. Fever
2. Vomiting
3. Anorexia
4. Chills and shivering
5. Headache
6. Sweating
7. Back pain
8. Arthralgia
9. weakness

M602 How it transmitted? 1. By mosquito bite

2. Blood transfusion
3. Mother to child
4. By flies
5. breathing
6. body contact
7. By hunger

M603 How it can be prevented? 1. Early diagnosis & treatment

2. House spray with insecticides
3. Use of mosquito bed
4. Environmental hygiene
5. By using good nutrition

M604 What may increase someone's risk of contracting malaria? health 1. Staying out late at night poor

2. Stagnant water near home
3. Contact with malaria patient
4. Eating contaminated food

Annex 2 Cholera outbreak investigation 1 Questionnaire for Routine HMIS for HIV/AIDS Case Based Surveillance (CBS) questionnaire Identifiers: REGIONAL/ZONAL LEVEL

Interviewer _____ Date _____ Surveillance System Respondent _____
 Assessment team _____

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown
2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable
2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
 _____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis
 1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 3. Perform trend analysis?
 4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 7. Who is the responsible for the analysis of data?_____
 8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed
 9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IV. HIV Case Investigation
 1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
 2. Number of cases suspected in the past 1 year _____
 3. Number of those investigated_____ Obs. Reports
 4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
 5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

 6. The number of outbreaks where the outcomes had been put into practice:_____ -----ce report]
 7. Of the districts that looked at cases, % looked for risk factors_____
 8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
 9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following: _____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have
9. Data management Equipment Computer Printer Photocopier Statistical
package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone
computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No
2. Which organizations must get notifications of surveillance data?
3. Do you think that extra information gathered about a case takes up time? Yes/No
4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes
5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____%

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown

2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease_____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable

2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown

3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis

1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
3. Perform trend analysis?
4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
7. Who is the responsible for the analysis of data?_____
8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed

9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/

IV. HIV Case Investigation

1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
2. Number of cases suspected in the past 1 year _____
3. Number of those investigated_____ Obs. Reports
4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

6. The number of outbreaks where the outcomes had been put into practice:_____ -----ce report]
7. Of the districts that looked at cases, % looked for risk factors_____
8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____

9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____

10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____



8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

IV. Availability of National surveillance manual

3. Is there national manual for surveillance? Yes / No / not applicable/ unknown

4. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

V. Case detection and registration

3. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

4. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

VI. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

4. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable

5. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown

6. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts

2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

VI. Capability to report it to the next level through e-mails, telegram fax, telephone.

VII. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others

VIII. Data analysis

10. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based

11. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable

12. Perform trend analysis?

13. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable

14. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

15. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable

16. Who is the responsible for the analysis of data?_____

17. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed

18. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/

IX. HIV Case Investigation

11. Per cent of suspected HIV cases that were investigated in the past 1 year_____

12. Number of cases suspected in the past 1 year _____

13. Number of those investigated_____ Obs. Reports

14. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____

15. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

16. The number of outbreaks where the outcomes had been put into practice: _____ [-----ce report]

17. Of the districts that looked at cases, % looked for risk factors _____

18. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents, _____

19. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions). _____

20. How many districts [noted in the final report] used the data to take action

X. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

5. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)

6. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable

7. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following: _____

8. Epidemic Response

The existence of a budget provision for responding to epidemics

D. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

E. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

F. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____
2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No
2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No
2. Which organizations must get notifications of surveillance data?
3. Do you think that extra information gathered about a case takes up time? Yes/No
4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes
5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No
2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

DISTRICT (INTERMEDIATE LEVEL) QUESTIONNAIRE

Identifiers	District
Assessment team	Region /province
Date	country
Interviewer	surveillance system

Respondent

% of districts with a national surveillance manual accessible

1. Does this location have a national manual for surveillance?

Obs Observe's guide to national surveillance:

Whether it's true or false is undetermined. Not Relevant

Case confirmation, first _____

Districts that can transmit samples to a higher-level lab as a percentage

2. Can the district send samples to a lab with more advanced equipment?

Yes no unknowns Not relevant

% of districts with policies for transporting specimens to the next level and collecting, handling, and handling new specimens

1. Has the district established policies for the collecting, management, and transportation of specimens to the next stage?

Yes no unknown Inapplicable

percent of websites with country-specific forms at all times over the previous six months

1. Do you currently have any of the necessary forms for the nation from the previous six months?

Yes no unknown Inapplicable

Percentage of health facilities that submitted reports to the district level for each reporting period over the previous three months:

1. The number of reports received over the past three months vs what was anticipated

Weekly: 12 times the amount of healthcare facilities

As soon as possible: _____/--- times as many medical facilities

(Use national deadlines)

1. The number of timely submitted monthly reports is ____/12 times the number of healthcare institutions.

2. Twelve times as many reports were submitted on time as there were healthcare institutions.

3. Percent of districts with access to telephone/, fax/, radio/ or email/ for reporting to the next level

What to report:

Any of the following: a. mail b. fax c. phone d. radio e. electronic f. other enhancing reporting 1. How could reporting be made better?

I. Data analysis _____

2. I. The proportion of websites that: List data by individual (case-based, outbreaks, sentinel)

Obs Observed data breakdown by sex and age

If so, No If not, Unknown Not relevant

1. Describe location-based data

Data by location (locality, village, job site, etc.) as observed

If so, No If not, Unknown Not relevant

2. Explain data by time.

Observed data description by time

If so, No If not, Unknown Not relevant

3. Conduct a trend analysis

Obs Cases by time line graph observed

In agreement No Inconclusive Not relevant

4. List:

5. Each priority disease should have an action threshold.

Do you have an HIV-related action threshold?

Yes There are no unknowns Not relevant

6. If so, what exactly? Increase in cases by _____%

7. Utilize the proper denominators

Obs Observed the presence of demographic information at the site, such as population under five years old, population by village, and overall population.

In agreement No Inconclusive Not relevant

Who is in charge of data analysis? _____

2. How frequently do you analyze the information gathered?

Daily, weekly, monthly, quarterly, every two weeks, as needed, etc.....

Index case testing _____

The proportion of suspicious instances that were looked into over the previous six months:

Number of suspected outbreaks over the last 12 months: _____

Obs Of those, how many were investigated? (Watch reports, and if you can, get copies.) _____

% of local government units that have ever looked into an outbreak

[Number of districts assessed that have ever conducted an outbreak investigation, Number of districts assessed to obtain indicator]

3. Has your district ever investigated an outbreak?

Yes No Unknown Not relevant

I. Epidemic readiness _____

1. The proportion of districts with an epidemic preparedness and response plan (Obs) Have a written plan for preparing for and responding to epidemics

Yes No Unknown Not relevant

2. In the last year, what percentage of districts always keep emergency medicine and supply supplies?

Has the district had emergency medicine and supply inventories on hand at all times in the last year?

Obs observed the medicine and supply inventories at the time of the evaluation.

Yes No Inconclusive Not relevant

The proportion of districts where the most recent epidemic (or outbreak) was felt during a scarcity of medications, vaccinations, or supplies

During the most recent epidemic (or outbreak), did the district encounter a lack of medications, vaccinations, or supplies?

Yes There are no unknowns Not relevant

2. Availability of finances or the existence of a budget line for epidemic response

Is there a budgetary allocation or way to receive money for fighting an epidemic?

In agreement No Inconclusive Not relevant

3. % of districts have a committee for managing outbreaks

Obs Observed epidemic management committee meeting minutes (or reports). Yes No
Unknown Not applicable

1. Per cent of districts that have rapid response team for epidemics

Does the district have a rapid response team for epidemics?

Yes No Unknown Not applicable

I. Responses _____

2. Per cent 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

3. Per cent of districts that responded within 48 hours of notification of most recently reported outbreak

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

Yes No Unknown Not applicable

4. Per cent 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

. Feedback_____

5. % of sites publish written reports on a regular basis to share surveillance data. How many written reports on feedback has the district created in the past year?

Obs noticed the existence of a written report that is frequently created to communicate surveillance data (at the district and higher levels).

Yes No Unknown Not relevant

6. % of the sites that have gotten a report or bulletin from a higher level regarding the data they have provided over the past year

How many reports or feedback bulletins did the district receive in the previous year?

Obs Observed at least 1 report or bulletin on the data they supplied from a higher level during the previous year at the district level.

In agreement No Inconclusive Not relevant

6.% of those who were under supervision in the last six months

How frequently did you receive supervision over the previous six months?

Obs Report of observed supervision or any other proof of supervision in the previous six months

Yes no unknown Not relevant

7. Of those who were under supervision in the past six months, what percentage of people had a supervisor from a higher level assess surveillance procedures that were suitable for their level?

Obs Reports of observed supervision or any other supporting information for a proper examination of surveillance procedures

In agreement No Inconclusive Not relevant

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

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

(Obtain required number of visits from central level)_____

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

Reason 1 _____

Reason 2 _____

Reason 3 _____

% of health professionals with responsibility are knowledgeable about disease surveillance

Have you received disease surveillance training?

Yes There are no unknowns Not relevant

7. If so, when, where, for how long, and by whom?

8. The percentage of districts with personnel trained in epidemic management and surveillance

How many of your employees in the district have received training in epidemiology and surveillance?

a. . Resources _____

b.

c. The percentage of locations with the following amenities: logistics a. electricity b. bicycles c. motor cycles d. vehicles

d. . Data management a. Office supplies b. Calculators c. Computers d. Printers e. Statistical software

6. Communication

A telephone service, a fax machine, a radio station, and computers with modems.

7. Resources for information, education, and communication

A. Posters B. Megaphone C. Flipcharts or Image Box D. TV and VCR E. Generator F. Screen G. Projector (Movie) H. Other

8. Sanitation and hygiene supplies

a. Sprayer b. Disinfectant b.

Coordination of surveillance, part II: _____

6. The existence of a focal unit or individual at the district level for surveillance coordination.

Is there a district epidemic management committee focal person for surveillance coordination?

3. Contentment with the surveillance system _____ surveillance system

What do you think of the surveillance system?

Yes No not, Unknown Not relevant

6. If not, what changes could be made to the surveillance system?

7. Contentment with the monitoring system _____

7. Possibilities for blending

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

Questionnaires for the Shebedino District, ----- Zone, Sidama Region, Ethiopia, Health Profile Assessment, May 2021

1. Organizational structure

1.1 Region _____ Zone ____ Woreda ____

Woreda boundaries include those in the north, south, east, and west.

1.3 Rural _____ Urban _____ Total number of kebeles

2. The region's historical features (Culture and Tourism Office)

2.1 Name: Woreda _____

2.2 How and Why the Name Was Given _____

2.3 In what year did the Woreda come into existence?

2. 4. Any further historical detail

3. The geographical and climatic situation

3.1. Map of Woreda _____ Area (distance from zone town)

3.2-----through AA -----Direction-----

3.3 Height: ----- Latitude ----- Longitude -----

3.4 Climatological Zones - Scottish ----- % Midland ----- % Lowland ----- %

3.5 Access to major roads _____

The area of the woreda (km²) is 3.6.

Annual temperature (average) _____ Max ----- Min -----

3.9 Inches of average annual rainfall _____ Max ----- Min -----

3.4 Seasonal cycles

4. Population Size and Structure

Population as a Whole: _____ Male ----- Female ----- gender ratio -----

Total Rural Population: 4.2. _____ Male _____ Female _____

Urban Population as a Whole: ----- Male ----- Female -----

Total Population: 1yr _____, 5yrs _____, 15yrs _____, >64yrs _____, Women 15-49yrs _____

S/N Name of the kebele Total population

1 M F Total

2

3

4

5

6

4.6. Average size of the entire household: -----

4.7. Population pyramid by age and sex, figure

4.8. Language/Ethnic Composition: Sidama ----- Oromo ----- Amhara ----- Tigre ----- WOlaita -----
----- Gurage ----- Others -----

Orthodox, Muslim, Protestant, Catholic, and Others are the six major religions. economic circumstances

5.1 Agriculture is the primary industry and source of revenue. -----

• Grazing grounds -----the growing season----- • Amount of land-----

• Animal stock _____ • Trade _____

• Other businesses

5.2 Average annual income per HH _____

5.3 primary crops -----

5.4 Unemployment rate, employment rate, and unemployment -----

6. School health and education (Education Bureau)

6.1 The institution's identification number is K.G. _____.

- Predominantly school
- Secondary _____
- Preparatory _____
- TVET-----
- University/College _____

6.2 The total number of teachers in Wereda Male: _____ Female: ____

6.3 Total Number of School-Age Children (Goal) _____

Total Enrolments, 6.3.1 Male: _____ Female: _____

6.3.2 Six-month school dropout rate _____

6.3.3 If school dropouts occur, why

6.4 The community's level of education

Total number of educated people:

6.4,1 Name Gender Male Female _____

Health-related school activities

6.5.1 Water supply: water supply in schools

6.5.2 Restrooms: Schools with working latrines (male and female)

6.5.3 HIV/other health groups in schools 7. Infrastructure (transportation, telecommunication, power, water, etc.)

How many of the health posts have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many of the health centers have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many hospitals have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

7.4 Water source: _____

7.4 Number of water supply pipes 7.6 Coverage of the woreda by water supply

7.7: Is the water chlorinated? _____

7.8 Chlorination frequency _____

8. The woreda is experiencing a disaster.

8.1. Has the woreda experienced any recent natural or man-made disasters? _____

8.2. In the past year, were there any recent disease outbreaks or other public health emergencies?

8.3. If yes, - _____

8.4. incidents _____ and deaths _____

9. Vital Statistics and Health Indicators

- rate of neonatal death -----
- The infant mortality rate (IMR) was _____. (There were ___ deaths in total last year.)
- Total number of live births: ____ Total number of stillbirths: ____
- Number of neonatal deaths overall
- Child Mortality Rate: ____ (total fatalities in the last year were 15 years old)
- The crude birth rate is:
- Crude Mortality Rate: (____ total deaths in the past year)
- _____ Maternal Mortality Rate (total number of maternal deaths in the past year)
- Prevalence of contraception _____
- Acceptance rate for contraceptives: _____
- ANC rate (the proportion of first ANC visits among all projected pregnancies) _____
- ANC rate (the proportion of fourth ANC visits among all anticipated pregnancies) _____
- Rate of postnatal coverage
- The proportion of deliveries attended by trained birth attendants
- BCG vaccination coverage (for women and children): _____ (____%)
- OPV-0-No _____ (____%) OPV -1: No _____ (____%) OPV-3: No _____ (____%)
- Penta-1-No (%) _____ No. _____ in penta-3 (%)
- PCV -1: No _____ (____%) PCV -3: No _____ (____%) No _____ (____%) ,
- TT coverage-----

10. Health Services

10.1 Type and Number of health Institution

S/N	TYPE	NUMBER		REMARK
		Government	Private	
1	Hospitals			
2	Health centres			
3	Health posts			

- 4 Pharmacy
- 5 Drug store
- 6 Rural drug venders
- 7 Laboratory
- 8 Clinics Primary
 - Medium
 - Higher
- 9 Special clinics Dental
 - Mental
 - Pediatrics

10.2 Healthcare facility to population ratio:

10.3 Medical facility: Pop. HC: Pop _____

10.4 Health service coverage according to HP: Pop

10.5 Health professionals: Type and Number

S/N	Category	Government	NGOs	Total	remarks
1	Specialists (all type)				
2	Physicians				
3	Health officers				
4	BSc Nurses				
5	Clinical nurses IV				
6	Midwifery IV				
7	Lab. technician				
8	Lab. technologist				
9	Druggist				
10	pharmacist				
11	Environmental health				
12	MPH				
13	HEWS				
14	HMIS				

15 OTHERS

Master of Public Health (MPH): Doctor: pop ratio ____; Nurse: pop ratio ____; HEW = Health Extension Worker HEW: pop ratio ____ midwife-to-pop ratio -----

The top 10 causes of morbidity and mortality are 10.6.

10.6.1. The top 10 morbidity-related causes of OPD visits

S/N Adult Paediatrics

10. Budget allocation for health care: _____

11. The woreda (birr) has an annual budget of \$_____.

_____ (____%) of the annual budget is set aside for healthcare or healthcare organizations.

Annual budget allocation growth, expressed as a percentage relative to the prior year

Total NGO funds received for the following purposes/programs: _____

Services for Community Health:

12.1. The current state of the services offered by community health workers, namely 12.1.1. The number of TBAs and their respective responsibilities

12.1.2. The number of CHWs and CHPs and their responsibilities are as follows:

12.1.3. HEWs' accountability: _____

12.1.4. Others _____

12.2 Environmental Hygiene and Sanitation

12.2.1. Latrine coverage (percentage) and latrine utilization (percentage)

12.2.2. Total coverage of the safe water supply is _____ (%).

12.2.3. Coverage of safe water sources 12.2.4. Primary source of water supply _____

12.2.5. Others _____

12.3. Medical instruction

13. Focusing on the eight PHC components, the status of primary health care components

Delivery)

13.1 MCH -----, ANC -----, PNC -----)

13.2 FP: Methods, Contraceptive Prevalence, and Contraceptive Acceptance

13.3 EPI (cold chain, vaccination, outreach service) _____

13.4 Sanitation and environmental health

13.4.1 Latrine coverage and use rate _____

Solid waste management: _____

13.4.3 Managing liquid waste _____

13.5 Endemic diseases; 13.5.1 Malaria: At danger are all kebeles and populations in them. _____

- ITN coverage, which now includes the present district
- This year, is there an IRS? (No kebeles) _____ HH protected population ____ covered _____
- Total cases per year, deaths per year, and 5-year cases _____ fatalities (5 total)
- Lack of malaria supplies (RDT, for example) _____

• Other problems _____ 13.5.2 Leprosy and TB

- Total cases of TB _____
- PTB negative _____
- Positive for PTB _____
- E PTB _____

- Rate of TB detection: _____
- The success rate of TB Rx
- _____ TB cure rate
- Success rate for TB medications: _____
- Defaulter on TB _____
- Death after using TB medication _____

All TB patients had their HIV tested. _____

- Total cases of leprosy on prescription 13.5.3 HIV/AIDS: • Total population screened for HIV in the previous year • VCT _____ PITC _____ PMTCT _____

There are currently no known HIV-related deaths.

- The number of new HIV cases per year is _____.

Overall PLWHA _____ On ART _____ In relation to Pre-ART _____

- Additional HIV preventive measures _____ 136. nutrition (malnutrition-related OTPs, SC, TSF, CBN, and PSNP activities), HO, and early warning
- Total OTP sites, _____ total OTP admissions per year _____

• The total number of SC locations, new locations each year, and admissions to SC as a whole per year are all _____.

• Is there a TSF (targeted supplementary feeding) or CBN (community-based nutrition) initiative in the woreda? If the program includes youngsters, _____ () _____ (No & %) • general state of food security

Lack of essential and vital medications _____

13.8. What do you consider to be the district's primary health issue(s)?

Annex 4 Checklist for drought derived nutritional assessment at Zonal and Woreda Health Department

Interviewer name _____ Institution: _____

Interview Date: DD-----MM----YYYY

Region: OROMIA

Zone: East Bale

The main contact at this location

Name: -

Position:

Tel:

SECTION I: SOCIO-DEMOGRAPHIC PROFILE

Q1. Population: Woreda total population Male: -----Female: -----Under -----

No. of women of reproductive age (age 15-49 yrs.) -----

No. of pregnant women: -----

Q2. Special Population (if any) Pastorals --Refugees ---IDP---- Migrant Workers -----

Q3. Number of HCs ----, Number of HPs -----

Q4. Number of Mobile health and Nutrition teams-----

Q5. Number of HEWs -----

Water availability at health centers (HC) -----

Q6. No. of health centres -----Number of Health Center with water access -----

No. of Health Center without water access -----

SECTION II: Coordination and management systems

Q7. Are there PHEM Officers at the Regional level? If yes how money Yes No

Q8. Does the RHB/Zone Health Office regularly report PHEM report as scheduled dates? Observe copies and comment Yes No

Q9. Are there PHEM Officers/focal persons at Woreda and HC levels?

If yes how many are there in the woreda level Yes No

If yes how many are there in the HC

Q10. Do the Woredas, health facilities, and HEWs regularly report PHEM report as scheduled dates? Observe copies and comments Yes No

Q11. Are all relevant government, NGOs, and UN agencies represented at Regional PHEM? Yes No no hear

Q12. Is there a multi-sector health coordination forum? If yes how frequently meet? Yes No

Q13. Is there a Public Health Emergency preparedness and response plan?

Q14. Does it include reproductive health? Yes No

Q15. Is there an accessible emergency response fund for PHEM at the regional level?

If yes how much allocated. Yes No

Q16. Mention anticipated epidemics (If yes please indicate Zone/Woreda at risk and risk population per anticipated risk :(Use the back side) Pregnant, under five5 children _____ Lactating _____ women _____

Q17. Public Health Emergency Management Yes No

Q18. Is there a Public Health and Nutrition Emergency Preparedness and Response plan? Yes No If yes, is the plan budgeted/ funded? Yes No

Q19. Is there a trained staff on PHEM basic level (Regional/Zonal/Woreda/HFs) Yes No? If yes specify the number of trained personnel per level:

Region/Total: Female ___ Male ___ Zone: Female ___ Male ___

Woreda: Female ___ Male ___ Yes No

Q20. Is there a Regional/Zonal trained Rapid Response Team (RRT)? Yes or No

Q21. Is there a trained staff on Emergency nutrition management at all levels?

If yes specify the no. Total: Male ___ Female ____

Disease outbreaks

Q22. Was there an outbreak in the last 3 months? YES _____NO _____

If yes, specify the type of disease

Type of outbreak ____Number of cases _____Deaths _ (specify the time period) ____

Q23. Is there any on-going outbreak of any disease? YES _____ No _____

Type of outbreak __Number of cases _____Deaths __ (specify the time period) ____

SECTION III: RISK FACTORS

Q25. Diseases Risk factors for epidemics to occur Yes No

Q26. Malaria endemic area s Yes No

Presence of malaria breeding site Yes No

Interrupted or potentially interrupting river Yes No

Was there any prevention and control activities Yes No

Number of Malaria kebeles and total population in these Kebeles _____ Pop

Q27. Meningitis was there a Meningitis epidemic in the last 3 years (If yes specify date) Yes No

Q28. AWD was there an AWD epidemic in the last three years

(If yes specify date) ___ _no _____

Q29. Is there ongoing measles outbreak Yes No

Annex II: Drought Assessment Checklist for stakeholders (different sectors)

Role and response sector _____

Involvement in which drought response(s) _____

Q1. How reliable was the needs assessment data used for planning?

Q2. To what extent do the planning documents and priorities reflect the needs and priorities of affected people and vulnerable groups?

Q3. Agriculture Emergency livestock interventions (fodder, water, vaccination, destocking)

Disaster mitigation measures (irrigation, crop, and vegetable production, fodder production)

- Q4. Education School feeding Activities to create a protective environment for school-age children and adolescents
- Q5. Shelter / Provision of emergency shelter & materials Population movement tracking, registration, profiling Shelter resilience & disaster risk mitigation and Food distribution Preparedness measures
- Q6. Health:-Provision of life-saving health services Detection and response to epidemic disease outbreaks
Nutrition SAM identification and treatment MAM identification and treatment
Caring and feeding practices for children and pregnant and lactating women Continuum of case integrated response with WASH, Health, Food / Cash
- Q7. WASH Emergency water supply for human and livestock consumption Sanitation services Hygiene promotion Rehabilitation of non-functional WASH infrastructure
- Q8. Were any geographical areas under- or over-served during the response? Why?
- Q9. Based on your own and collective monitoring, did aid reach those most in need? If not, who was (likely) left out?
- Q10. How were cross-cutting issues (gender, age, disability, and environment) integrated with the response? Was this adequate? What else could have been done?
- Q11. What measures did your organization put in place to ensure that the response was conflict-sensitive? Were those issues discussed in coordination fora?
- Q12. In your view, did the balance between different sectors and types of interventions adequately reflect needs? If not, which sectors were over-or under-served? Why?
- Q13. Do you know of any unintended effects the response has had on drought-affected people and communities?
- Q14. What kind of capacity strengthening measures for the government did your response include?
- Q15. Do you have any evidence on whether government service delivery improved?
- Q16. Did the response strengthen government service provision? How? Do you have any evidence on this?
- Q17. What role did development actors play during the response? Was this appropriate/sufficient? If not, what other opportunities would there have been to link to development actors?
- Q18. Did you participate in any way in the drought response?
- Q19. Were you approached by any humanitarian actors and did you participate in relevant coordination for?
- Q20. Would there have been other opportunities for involving or linking with development actors during the response?
- Q21. Do your regular programs include disaster risk reduction, mitigation, or preparedness activities?
- Q22. Do you have any crisis modifiers or similar ways to adapt your response in your organization?
- Q23. Do you believe that the relationship between the humanitarian system and the Government was handled appropriately? Why / why not?

Q24. Did you work with national or local NGOs during the response? Why / why not? If yes: Did you include any capacity strengthening measures in your activities?

Q25. What was your role in the response?

Q26. Did the response strengthen your capacities? Why / why not? How?

Q27. Would there have been any other opportunities for involving national and local NGOs and strengthening their capacities?

Q28. How effective was coordination in your sector/cluster? Why?

Q29. Which other sectors/clusters did you (and your cluster) coordinate with?

Q30. How well did overall strategic coordination and inter-cluster coordination work? Why? Do you know of any examples where duplications were avoided through coordination?

Q31. Do you know of any gaps that could not be filled despite coordination?

Q32. Did your organization have funding available in time to start the response? If not, when did funding arrive for your biggest program, and when did you begin implementation? Were there any delays? Why?

Q33. Was there a strong collective effort to mobilize resources? If so, how successful was it? Did donor policies foster cooperation or engender competition among humanitarian agencies?

Q34. Were there any other factors that either enabled or hindered an effective response? Were there any that were not working or were missing? What are your top three recommendations for improving the way the humanitarian system in Borena functions, in order of priority?

Q35. What specific steps could be taken to achieve this?

Q36. Are there any documents we should read or any relevant data you could share?

Annex II: Checklist drought assessment at Community level

Name of Woreda: _____ Name of Kebele: _____ Mobile home other

Demographic Characteristics

Age of the person interviewed: _____

Sex of the person interviewed: Male Female

Q1. Does your HH own or rent your place of residence?

Own Rent Other-----

Q2. Including yourself, how many people live in your HH?

Q3. Including yourself, how many people living in your HH are Less than 2 years old? 2-17 years?
_____ 18-64 years? _____ 65+ years?

Communications

Q4. What is your HH's primary source of information about drought? (Check ONE)

Newspaper TV Friends Family members radio Work social media

Place of worship other,

Q5. What is your HHs most preferred method for receiving information about an emergency event? (Check ONE) TV Radio Cell phone social media Word of mouth other

Water Supplies

Where did your HH water come from before the drought hit last year? (Mark EACH as applicable.) canned water, a private, municipal, or local water system Private wells, surface water (lake, river, spring), and other

Q6a. If yes, has the amount of water produced at your HH lessened in the last 12 months? Yes No

Do you or anyone in your home use tap water for drinking or cooking?

Does your family know of any problems with the quality of your tap water?

avoiding using tap water, yes or no

Q8a. What kinds of problems, if any?

Q9. Has your HH noticed a change in the colour, clarity, flavour, or odour of the water? (Mark EACH as applicable.) None in terms of appearance, transparency, odour, or flavour. Preventing Drought and assistance practices.

Q10. Have water shortages caused you or your family members to reduce water use? NA, Yes, No,

Q11: Has your HH taken any further measures to conserve water? Yes No

Q12. If the drought extended this summer, will your HH be able to further reduce water use? Yes No

Q13. Is there anyone in your HH that needs help because of the drought? Yes, No, or NA.

Q13. If so, what kind of help did your HH require? (Mark EACH as applicable.)

drinking, medical, and well-drilling purposes Aid with finances, food assistance, job placement, wildfire suppression, energy or utility assistance, and financial relief. Additional,

Q14. What kind of assistance did your family receive throughout the droughts? None, Food, vaccines for animals, and animals

Health

Q15: How has the drought affected your family? One youngster (male or female) and at least one adult (male or female) died. At least one individual (male or female?) got sick. We moved; our livestock or crops died; we sold our property; other: _____

16. The state of one's health (including malnutrition, infectious, True /False

Q17. More animals have been seen in residential areas.

True or False:

Q18.I saw more dead animals (like fish). True or false:

Q19. More mosquito breeding places have been spotted.

True or false:

Q20. More ticks were seen in True or False

Q21. Feel uncomfortable swimming in public bodies of water due to "swimmers itch," algae, etc.

Q22. There have been noticeable changes to the landscape, such as fewer ponds and diseases, and other disorders) observation of the drought ---- Annexes

Annex 1 Questionnaire for malaria outbreak investigation of Abobo Woreda, west Ethiopia

General knowledge

Respondent classification Case Control

Date of data collection----- Name of data collector----- Region -----Zone
_____ Woreda _____ Kebele _____ Got/Village _____

Place: Longitude _____ Latitude _____

Part one: Socio-demographic information

SN Questions Response/answers Skip

M101 Respondent identification

M102 Age in years

M103 Sex Male Female

M104 Address Woreda _____ Kebele _____

Village _____

M105 Occupation Employed _____ Unemployed _____ Student _____ Pastoralist ___ -
farmer _____

M106 Total family members (size) _____

M107 Ethnicity Anuak _____ Kambata _____ others _____

M108 Religion Catholic _____ Muslims _____ protestant _____

M109 Marital Status Single __ married __ Divorced _____ Widowed

M110 Education status No formal __ education _____ primary _____ secondary _____ Diploma _____
Degree _____

Part Two: Clinical Manifestations (Only for participants)

M201 What were your first symptoms? _____, _____, _____,

- M208 Did you recover completely after the treatment?
- M209 Place of residence during 2 weeks before onset of illness?_____
- M210 Blood sample taken?
- M211 If yes to M210 1. Positive?
2. Negative

Part three: for complicated malaria

- M301 Altered consciousness(confusion, sleepy, coma, Yes No
- M302 Not able to drink or feed? Yes No
- M303 Severe dehydration Yes No
- M304 Persistent Fever Yes No
- M305 Frequent vomiting Yes No
- M306 Convulsion or recent history of convulsion Yes No
- M307 Unable to seat or stand up Yes No
- M308 Pallor Yes No
- M309 No urine output for the last 24hrs Yes No
- M310 Bleeding Yes No
- M311 Jaundice Yes No
- M312 Difficult breathing Yes No
- M313 Other conditions that cant be managed at this level Yes No

Part Four: Risk factors(for both case and control)

- M401 Specific living area _____
- M402 Sleeping areas 1, inside home 2. Outside home
- M403 Do you stay outside over night Yes No
- M404 Is there any person in your home with similar sign and symptom? Yes No
- M405 Did you ever traveled outside your village in the past 2-3 weeks?
- M406 If yes to QM405, please indicate Date if travel_____

Place of travel_____

Date of return_____

- M407 If yes to QM405, Is there any person with the same symptom (diseased) in the place where you have been? Yes No
- M408 Is there a similar sick patients in your home? Yes No
- M409 Do you have bed net in your home? Yes No
- M411
- M410 If yes how often do you use? 1. Always 2 sometimes 3, Never
- M411 Slept under LLIN 2 weeks before onset of symptom Yes No
- M412 If yes to MQ409 Do mothers and children given priority of using bed nets? Yes No
- M413 Was Indoors Residual Sprayed (IRS) this year? Yes No
- M414 If yes to MQ413, When? _____
- M415 Do you wore full extremity covering cloth in evening hours both in in and outdoors? Yes No
- M416 History of malaria in the past two months Yes No
- M417 If yes to M416, Have treated? Yes No
- M418 Have you stagnant water for 3-5 days following rain fall? Yes NO
- M419 Do you use windows or door curtains/close during evening to minimize mosquito entry? Yes no

Part Five :Environmental investigation

- M501 Place of stay during night _____
- M502 Is there any artificial water holding container close to your home? YES NO
- Plant in the containers
 - Flowers/pots
 - Plant with temporary water
 - Pools
 - Open deep well
 - Broken glass/bottle
 - Cans
 - Plastic containers
 - Gutter to collect rain water
 - Ed water storage septic tankeruncover

- M503 Presence of mosquito vectors /mosquito breeding site around the home vicinity
- M504 If M5043 yes, presence of larvae in breeding site around the home or vicinity?
- M505 Do you use repellents
- M506 Protective clothing
- M507 Waste collection
- M508 Unprotected irrigation
- M509 Presence of intermittent rivers close to the community
- M510 Is there flooding of rivers in the kebele following the rain fall?

Part Six: Awareness Assessment

M601 What are sign and symptoms of malaria? yes NO

1. Fever
2. Vomiting
3. Anorexia
4. Chills and shivering
5. Headache
6. Sweating
7. Back pain
8. Arthralgia
9. weakness

M602 How it transmitted? 1. By mosquito bite

2. Blood transfusion
3. Mother to child
4. By flies
5. breathing
6. body contact
7. By hunger

M603 How it can be prevented? 1. Early diagnosis & treatment

2. House spray with insecticides
3. Use of mosquito bed

4. Environmental hygiene
5. By using good nutrition

M604 What may increase someone's risk of contracting malaria? health

1. Staying out late at night poor health
2. Stagnant water near home
3. Contact with malaria patient
4. Eating contaminated food

Annex 2 Cholera outbreak investigation

1 Questionnaire for Routine HMIS for HIV/AIDS Case Based Surveillance (CBS) questionnaire Identifiers:
REGIONAL/ZONAL LEVEL

Interviewer	Date	Surveillance System Respondent
Assessment team _____		

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown
2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable
2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis
 1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
 2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
 3. Perform trend analysis?
 4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
 5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

 6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable
 7. Who is the responsible for the analysis of data?_____
 8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed
 9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IV. HIV Case Investigation
 1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
 2. Number of cases suspected in the past 1 year _____
 3. Number of those investigated_____ Obs. Reports
 4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
 5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

 6. The number of outbreaks where the outcomes had been put into practice:_____ ----ce report]

7. Of the districts that looked at cases, % looked for risk factors_____
8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____
10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)
2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable
3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicab

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____
2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No
2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No
2. Which organizations must get notifications of surveillance data?
3. Do you think that extra information gathered about a case takes up time? Yes/No
4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes
5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No
2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____ %

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

I. Availability of National surveillance manual

1. Is there national manual for surveillance? Yes / No / not applicable/ unknown

2. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease_____

II. Case detection and registration

1. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable

2. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

III. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

1. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
2. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
3. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- I. Capability to report it to the next level through e-mails, telegram fax, telephone.
- II. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- III. Data analysis

1. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based

2. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable

3. Perform trend analysis?

4. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable

5. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

6. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable

7. Who is the responsible for the analysis of data?_____

8. How often do you analysis the collected data? A. Daily B. Weekly. C. Biweekly D. Monthly E. Quarterly F. As needed

9. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/

IV. HIV Case Investigation

1. Per cent of suspected HIV cases that were investigated in the past 1 year_____
2. Number of cases suspected in the past 1 year _____
3. Number of those investigated_____ Obs. Reports
4. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for:_____
5. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

6. The number of outbreaks where the outcomes had been put into practice:_____ [-----ce report]
7. Of the districts that looked at cases, % looked for risk factors_____
8. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents,_____
9. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions)._____
10. How many districts [noted in the final report] used the data to take action

V. Existence of a regional or Zonal plan for preparedness and response to

Epidemics

1. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)
2. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable
3. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following:_____

4. Epidemic Response

The existence of a budget provision for responding to epidemics

A. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

B. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

C. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources?

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____%

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

General

IV. Availability of National surveillance manual

3. Is there national manual for surveillance? Yes / No / not applicable/ unknown

4. If yes, describe last update, disease included case definition, surveillance and control integrated different for each disease _____

V. Case detection and registration

3. Do you have global or national standard definitions for HIV? Yes/ no/ unknown/ not applicable
4. Obs [I top ten priority disease] Observed the standard case definitions for each ? yes/ no/ unknown / not applicable

VI. Data Reporting

Presence of Recommended reporting forms in the country at all times over the past 6 month

4. Is there responsible central level for providing surveillance forms to the health facilities? yes/no/ unknown, /not applicable
5. If yes, have you lacked appropriate surveillance forms at any time during the last 6 month? Yes/ no/ not applicable / unknown
6. What are the reporting entries for the surveillance system? A. Public health facilities B. NGOs C. Military Health facilities D. private health facilities E. others

The percentage of district reports that were received by the central level during the previous three months, either directly or via an intermediate level:

Comparing the amount of reports over the past three months to what was anticipated _____ per month
_____ /12 times the number of districts

Quarterly: ----- / times the number of districts/woredas

Semi-annually----- / times the number of woredas

1. timely: _____ /12 times the number of districts
2. Reports received per months -----

The Per cent of districts that have means for reporting to next level by e-mail, telephone, fax or radio

- VI. Capability to report it to the next level through e-mails, telegram fax, telephone.
- VII. How do you report it? A. mail B. Fax C. telegram. D. telephone E. Radio F. others
- VIII. Data analysis

10. Does the regional level describe data by Time ,Place & Person (TPP)?yes/ No// Unknown/ Not applicable [Obs] Case based
11. Describe data by tables, maps, figures?[Obs] yes/ no/ unknown/ not applicable
12. Perform trend analysis?
13. Perform trend analysis? Obs line graphs, table .? yes/ no/ unknown / not applicable
14. List the disease(s) for which the graphs observed? Yes/ no/ unknown/ not applicable ___ -

15. Have a defined threshold for HIV/AIDS? Yes/ no/ unknown/ not applicable

16. Who is the responsible for the analysis of data? _____
17. How often do you analysis the collected data? A. Daily B. Weekly. C. Biwewkly D. Monthly E. Quarterly F. As needed
18. Have you appropriate denominators?[Obs. Demographic data? Yes/ no/
- IX. HIV Case Investigation
11. Per cent of suspected HIV cases that were investigated in the past 1 year _____
12. Number of cases suspected in the past 1 year _____
13. Number of those investigated _____ Obs. Reports
14. % of cases investigated in the last year in which risk factors were sought after Number of cases in which risk factors were looked for: _____
15. Among the outbreaks that were looked into in the past year, % of the findings were placed into action--

16. The number of outbreaks where the outcomes had been put into practice: _____ -----ce
report]
17. Of the districts that looked at cases, % looked for risk factors _____
18. Number of districts that looked for risk factors [observe in reports] Of the districts that looked into incidents, _____
19. % took action on the information (including controlling outbreaks, strengthening surveillance, and community actions). _____
20. How many districts [noted in the final report] used the data to take action

X. Existence of a regional or Zonal plan for preparedness and response to
Epidemics

5. Obs: A documented outbreak preparedness and reaction plan was available. Yes/ no not applicable / unknown (Availability of urgent quantities of medications, testing kits, testing algorithms, and supplies for HIV/AIDS at all times throughout the previous year)
6. Has the region had emergency stocks of drugs, testing kits for HIV/AIDS and supplies at all times in past 1 year? yes / no/ unknown / not applicable
7. there a standardized HIV case management protocol in place? Obs noted that a formal case management protocol maintained.

If so, list the following: _____

8. Epidemic Response

The existence of a budget provision for responding to epidemics

D. Is there funding designated for responding to epidemics?

Yes No Unknown Not relevant

E. A regional epidemic management committee is present, according to item [observed outbreak management committee meeting minutes (or reports)]

Relevant / Not relevant / / Inconclusive / Not applicable

F. Existence of a local epidemic rapid reaction team

Does the nation have an emergency quick reaction team?

Yes no unknowns. Not relevant

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

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

Yes No Unknown Not applicable

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

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

Yes No Unknown Not applicable

5 Feedback

Existence of a report or bulletin that is frequently published to communicate surveillance data:

How many feedback reports or bulletins did the regional level produce in the previous year?

Obs: Noticed the existence of a report or bulletin that is periodically published to distribute surveillance data.

If so, No If not, Unknown No match

6 Supervision

percent of managers who made the necessary number of supervisory visits in the last six months

How many times have you visited with your supervisor in the past six months? _____

received the necessary number of visits from the regional level. _____

6. The most frequent excuses for not conducting all necessary supervisory visits. (Text)

7. Training

% of health professionals with training in disease surveillance

8. What proportion of your junior staff has received surveillance training? _____”

9. Have you had HIV/AIDS surveillance training?

Yes No Unknown Not relevant

10. If so, when, where, for how long, and by whom?

% of medical workers who have completed post-basic training in managing epidemics

5. Have you had any post-basic HIV surveillance case management training?

Yes no unknown Not relevant

6. If so, when, where, for how long, and by whom?

7. Obtain and review the training materials for surveillance and epidemic management.

Strengths _____

Weaknesses _____

Opportunities _____

Threats _____

8. Resources

% of websites that have

9. Data management Equipment Computer Printer Photocopier Statistical package for data management

10. Communications Telephony Telephone service Fax Radio call Satellite phone

computers equipped with modems

Budget line 11 _____

12. _____

Surveillance

possess a working network for computerized surveillance

5. Do you have a network of computerized security cameras at this level?

Yes no unresolved Not relevant

budget for monitoring

6. Does the Regional Health Bureau's budget include a line item for surveillance?

In agreement No Inconclusive Not relevant

7. If so, what percentage is it?

Opportunities for strengthening surveillance

8 How could surveillance be improved?

9. Monitoring Arrangement

existence of a surveillance focal point at the RHB level

10. Obs Does the MOH central level have a focal point for surveillance? [Confirm using the MoH's organograms]

Yes No Unknown Not relevant A chance for integration

5. What chances exist for integrating the many aspects of surveillance, such as the fundamental tasks, supervision, guidelines, and resources? _____

Attributes and level of usefulness questionnaire:

1. The entire populace is being watched _____

2. How common or prevalent is HIV/AIDS in your city or region?

I. The Surveillance System's Level of Effectiveness for These Selected Priority Diseases

How effective is the surveillance system?

1. to identify early index testing of these prioritized HIV positives? Yes/ No

2. to gauge the severity of mortality and morbidity associated with

Describe the attributes of each system:

i. Simplicity:

1. Is it simple for health professionals at all levels to identify an HIV case? Yes/ No

2. Which organizations must get notifications of surveillance data?

3. Do you think that extra information gathered about a case takes up time? Yes/No

4. How long does it take to complete the format? 5 minutes a. B-10 to 15 minutes C- >15 minutes

5. How long does it take for HIV to be confirmed in a lab?

ii. Flexibility:

1. Can other recently occurring health events (diseases) be reported using the current reporting forms without too much trouble?

. Do you believe that every reporting agent has accepted and is actively participating in the surveillance activities? Yes/No

If so, how many (of those anticipated to) are participating actively? _____

III. Accessibility

Do you think implementing any changes to the current case detection, reporting, and format procedures will be difficult?

IV. . Data Quality (validity of the recorded data and completeness of the reporting forms)

1. Are all the data collectors and reporting sites able to easily fill out the HIV/AIDS data collecting formats? Yes/ No

2. Are the data collectors and reporting sites frequently trained and supervised? Yes/No

3. Pay attention to: Read the disease report from the previous month.

A. The typical proportion of variables with unanswered or blank replies on each of the reported forms

The proportion of total reports that are complete (i.e don't have any blank or unanswered questions)_ 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 / correction given by the higher bodies for the contribution / no dissemination of the analysis data back to reporting facilities

C. Reporting formats are difficult to understand

D. Reporting formats are time consuming

E. Other _____

V. Representativeness:

What health services are provided in the district, zone, or region? _____%

2. Do you believe the populations under monitoring have healthy disease-seeking behaviours?

3. Which individuals do you believe the surveillance data most accurately represents? urban versus rural

Timeliness:

1. -----

2. -----

VI. Stability:

1. Did the new DASH BOARD reorganization have an impact on the methods and activities used to monitor these diseases? 2. Did a lack of resources cause the surveillance system to be interrupted? Yes/No

DISTRICT (INTERMEDIATE LEVEL) QUESTIONNAIRE

Identifiers District
Assessment team Region /province
Date country
Interviewer surveillance system

Respondent

% of districts with a national surveillance manual accessible

1. Does this location have a national manual for surveillance?

Obs Observe's guide to national surveillance:

Whether it's true or false is undetermined. Not Relevant

Case confirmation, first _____

Districts that can transmit samples to a higher-level lab as a percentage

2. Can the district send samples to a lab with more advanced equipment?

Yes no unknowns Not relevant

% of districts with policies for transporting specimens to the next level and collecting, handling, and handling new specimens

1. Has the district established policies for the collecting, management, and transportation of specimens to the next stage?

Yes no unknown Inapplicable

percent of websites with country-specific forms at all times over the previous six months

1. Do you currently have any of the necessary forms for the nation from the previous six months?

Yes no unknown Inapplicable

Percentage of health facilities that submitted reports to the district level for each reporting period over the previous three months:

1. The number of reports received over the past three months vs what was anticipated

Weekly: 12 times the amount of healthcare facilities

As soon as possible: _____/--- times as many medical facilities

(Use national deadlines)

1. The number of timely submitted monthly reports is ____/12 times the number of healthcare institutions.

2. Twelve times as many reports were submitted on time as there were healthcare institutions.

3. Percent of districts with access to telephone/, fax/, radio/ or email/ for reporting to the next level

What to report:

Any of the following: a. mail b. fax c. phone d. radio e. electronic f. other enhancing reporting 1. How could reporting be made better?

I. Data analysis _____

2. I. The proportion of websites that: List data by individual (case-based, outbreaks, sentinel)

Obs Observed data breakdown by sex and age

If so, No If not, Unknown Not relevant

1. Describe location-based data

Data by location (locality, village, job site, etc.) as observed

If so, No If not, Unknown Not relevant

2. Explain data by time.

Observed data description by time

If so, No If not, Unknown Not relevant

3. Conduct a trend analysis

Obs Cases by time line graph observed

In agreement No Inconclusive Not relevant

4. List:

5. Each priority disease should have an action threshold.

Do you have an HIV-related action threshold?

Yes There are no unknowns Not relevant

6. If so, what exactly? Increase in cases by _____%

7. Utilize the proper denominators

Obs Observed the presence of demographic information at the site, such as population under five years old, population by village, and overall population.

In agreement No Inconclusive Not relevant

Who is in charge of data analysis? _____

2. How frequently do you analyze the information gathered?

Daily, weekly, monthly, quarterly, every two weeks, as needed, etc.....

Index case testing _____

The proportion of suspicious instances that were looked into over the previous six months:

Number of suspected outbreaks over the last 12 months: _____

Obs Of those, how many were investigated? (Watch reports, and if you can, get copies.) _____

% of local government units that have ever looked into an outbreak

[Number of districts assessed that have ever conducted an outbreak investigation, Number of districts assessed to obtain indicator]

3. Has your district ever investigated an outbreak?

Yes No Unknown Not relevant

I. Epidemic readiness _____

1. The proportion of districts with an epidemic preparedness and response plan (Obs) Have a written plan for preparing for and responding to epidemics

Yes No Unknown Not relevant

2. In the last year, what percentage of districts always keep emergency medicine and supply supplies?

Has the district had emergency medicine and supply inventories on hand at all times in the last year?

Obs observed the medicine and supply inventories at the time of the evaluation.

Yes No Inconclusive Not relevant

The proportion of districts where the most recent epidemic (or outbreak) was felt during a scarcity of medications, vaccinations, or supplies

During the most recent epidemic (or outbreak), did the district encounter a lack of medications, vaccinations, or supplies?

Yes There are no unknowns Not relevant

2. Availability of finances or the existence of a budget line for epidemic response

Is there a budgetary allocation or way to receive money for fighting an epidemic?

In agreement No Inconclusive Not relevant

3. % of districts have a committee for managing outbreaks

Obs Observed epidemic management committee meeting minutes (or reports). Yes No
Unknown Not applicable

1. Per cent of districts that have rapid response team for epidemics

Does the district have a rapid response team for epidemics?

Yes No Unknown Not applicable

I. Responses_____

2. Per cent 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

3. Per cent of districts that responded within 48 hours of notification of most recently reported outbreak

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

Yes No Unknown Not applicable

4. Per cent 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

. Feedback_____

5. % of sites publish written reports on a regular basis to share surveillance data. How many written reports on feedback has the district created in the past year?

Obs noticed the existence of a written report that is frequently created to communicate surveillance data (at the district and higher levels).

Yes No Unknown Not relevant

6. % of the sites that have gotten a report or bulletin from a higher level regarding the data they have provided over the past year

How many reports or feedback bulletins did the district receive in the previous year?

Obs Observed at least 1 report or bulletin on the data they supplied from a higher level during the previous year at the district level.

In agreement No Inconclusive Not relevant

6.% of those who were under supervision in the last six months

How frequently did you receive supervision over the previous six months?

Obs Report of observed supervision or any other proof of supervision in the previous six months

Yes no unknown Not relevant

7. Of those who were under supervision in the past six months, what percentage of people had a supervisor from a higher level assess surveillance procedures that were suitable for their level?

Obs Reports of observed supervision or any other supporting information for a proper examination of surveillance procedures

In agreement No Inconclusive Not relevant

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

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

(Obtain required number of visits from central level)_____

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

Reason 1 _____

Reason 2 _____

Reason 3 _____

% of health professionals with responsibility are knowledgeable about disease surveillance

Have you received disease surveillance training?

Yes There are no unknowns Not relevant

7. If so, when, where, for how long, and by whom?

8. The percentage of districts with personnel trained in epidemic management and surveillance

How many of your employees in the district have received training in epidemiology and surveillance?

a. . Resources _____

b.

c. The percentage of locations with the following amenities: logistics a. electricity b. bicycles c. motor cycles d. vehicles

d. . Data management a. Office supplies b. Calculators c. Computers d. Printers e. Statistical software

6. Communication

A telephone service, a fax machine, a radio station, and computers with modems.

7. Resources for information, education, and communication

A. Posters B. Megaphone C. Flipcharts or Image Box D. TV and VCR E. Generator F. Screen G. Projector (Movie) H. Other

8. Sanitation and hygiene supplies

a. Sprayer b. Disinfectant b.

Coordination of surveillance, part II: _____

6. The existence of a focal unit or individual at the district level for surveillance coordination.

Is there a district epidemic management committee focal person for surveillance coordination?

3. Contentment with the surveillance system _____ surveillance system

What do you think of the surveillance system?

Yes No not, Unknown Not relevant

6. If not, what changes could be made to the surveillance system?

7. Contentment with the monitoring system _____

7. Possibilities for blending

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

Questionnaires for the Shebedino District, ----- Zone, Sidama Region, Ethiopia, Health Profile Assessment, May 2021

1. Organizational structure

1.1 Region _____ Zone ____ Woreda ____

Woreda boundaries include those in the north, south, east, and west.

1.3 Rural _____ Urban _____ Total number of kebeles

2. The region's historical features (Culture and Tourism Office)

2.1 Name: Woreda _____

2.2 How and Why the Name Was Given _____

2.3 In what year did the Woreda come into existence?

2. 4. Any further historical detail

3. The geographical and climatic situation

3.1. Map of Woreda _____ Area (distance from zone town)

3.2-----through AA -----Direction-----

3.3 Height: ----- Latitude ----- Longitude -----

3.4 Climatological Zones - Scottish ----- % Midland ----- % Lowland ----- %

3.5 Access to major roads _____

The area of the woreda (km2) is 3.6.

Annual temperature (average) _____ Max ----- Min -----

3.9 Inches of average annual rainfall _____ Max ----- Min -----

3.4 Seasonal cycles

4. Population Size and Structure

Population as a Whole: _____ Male ----- Female ----- gender ratio -----

Total Rural Population: 4.2. _____ Male _____ Female _____

Urban Population as a Whole: ----- Male ----- Female -----

Total Population: 1yr _____, 5yrs _____, 15yrs _____, >64yrs _____, Women 15-49yrs _____

S/N Name of the kebele Total population

1 M F Total

2

3

4

5

4.6. Average size of the entire household: -----

4.7. Population pyramid by age and sex, figure

4.8. Language/Ethnic Composition: Sidama ----- Oromo ----- Amhara ----- Tigre ----- WOlaita ----- Gurage ----- Others -----

Orthodox, Muslim, Protestant, Catholic, and Others are the six major religions. economic circumstances

5.1 Agriculture is the primary industry and source of revenue. -----

• Grazing grounds -----the growing season----- • Amount of land-----

• Animal stock _____ • Trade _____

• Other businesses

5.2 Average annual income per HH _____

5.3 primary crops -----

5.4 Unemployment rate, employment rate, and unemployment -----

6. School health and education (Education Bureau)

6.1 The institution's identification number is K.G. _____.

- Predominantly school
- Secondary _____
- Preparatory _____
- TVET-----
- University/College _____

6.2 The total number of teachers in Wereda Male: _____ Female: ____

6.3 Total Number of School-Age Children (Goal) _____

Total Enrolments, 6.3.1 Male: _____ Female: _____

6.3.2 Six-month school dropout rate _____

6.3.3 If school dropouts occur, why

6.4 The community's level of education

Total number of educated people:

6.4,1 Name Gender Male Female _____

Health-related school activities

6.5.1 Water supply: water supply in schools

6.5.2 Restrooms: Schools with working latrines (male and female)

6.5.3 HIV/other health groups in schools

7. Infrastructure (transportation, telecommunication, power, water, etc.)
How many of the health posts have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many of the health centers have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

How many hospitals have access to transportation, telecommunication, electric power, and water supply? The answers are: _____%, _____%, _____%, and _____%, respectively.

7.4 Water source: _____

7.4 Number of water supply pipes 7.6 Coverage of the woreda by water supply

7.7: Is the water chlorinated? _____

7.8 Chlorination frequency _____

8. The woreda is experiencing a disaster.

8.1. Has the woreda experienced any recent natural or man-made disasters? _____

8.2. In the past year, were there any recent disease outbreaks or other public health emergencies?

8.3. If yes, - _____

8.4. incidents _____ and deaths _____

9. Vital Statistics and Health Indicators

- rate of neonatal death -----
- The infant mortality rate (IMR) was _____. (There were ___ deaths in total last year.)
- Total number of live births: ____ Total number of stillbirths: ____
- Number of neonatal deaths overall
- Child Mortality Rate: ____ (total fatalities in the last year were 15 years old)
- The crude birth rate is:
- Crude Mortality Rate: (____ total deaths in the past year)
- _____ Maternal Mortality Rate (total number of maternal deaths in the past year)
- Prevalence of contraception _____
- Acceptance rate for contraceptives: _____
- ANC rate (the proportion of first ANC visits among all projected pregnancies) _____
- ANC rate (the proportion of fourth ANC visits among all anticipated pregnancies) _____
- Rate of postnatal coverage
- The proportion of deliveries attended by trained birth attendants
- BCG vaccination coverage (for women and children): _____ (____%)
- OPV-0-No _____ (____%) OPV -1: No _____ (____%) OPV-3: No _____ (____%)
- Penta-1-No (%) _____ No. _____ in penta-3 (%)
- PCV -1: No _____ (____%) PCV -3: No _____ (____%) No _____ (____%) ,
- TT coverage-----

10. Health Services

10.1 Type and Number of health Institution

S/N	TYPE	NUMBER	REMARK
-----	------	--------	--------

	Government	Private	
--	------------	---------	--

- 1 Hospitals
- 2 Health centres
- 3 Health posts
- 4 Pharmacy
- 5 Drug store
- 6 Rural drug venders
- 7 Laboratory
- 8 Clinics Primary
 - Medium
 - Higher
- 9 Special clinics Dental
 - Mental
 - Pediatrics

10.2 Healthcare facility to population ratio:

10.3 Medical facility: Pop. HC: Pop _____

10.4 Health service coverage according to HP: Pop

10.5 Health professionals: Type and Number

S/N	Category	Government	NGOs	Total	remarks
1	Specialists (all type)				
2	Physicians				
3	Health officers				
4	BSc Nurses				
5	Clinical nurses IV				
6	Midwifery IV				
7	Lab. technician				
8	Lab. technologist				
9	Druggist				
10	pharmacist				
11	Environmental health				

- 12 MPH
- 13 HEWS
- 14 HMIS
- 15 OTHERS

Master of Public Health (MPH): Doctor: pop ratio ____; Nurse: pop ratio ____; HEW = Health Extension Worker HEW: pop ratio ____ midwife-to-pop ratio -----

The top 10 causes of morbidity and mortality are 10.6.

10.6.1. The top 10 morbidity-related causes of OPD visits

S/N Adult Pediatrics

10. Budget allocation for health care: _____

11. The woreda (birr) has an annual budget of \$_____.

_____ (____%) of the annual budget is set aside for healthcare or healthcare organizations.

Annual budget allocation growth, expressed as a percentage relative to the prior year

Total NGO funds received for the following purposes/programs: _____

Services for Community Health:

12.1. The current state of the services offered by community health workers, namely 12.1.1. The number of TBAs and their respective responsibilities

12.1.2. The number of CHWs and CHPs and their responsibilities are as follows:

12.1.3. HEWs' accountability: _____

12.1.4. Others _____

12.2 Environmental Hygiene and Sanitation

12.2.1. Latrine coverage (percentage) and latrine utilization (percentage)

12.2.2. Total coverage of the safe water supply is _____ (%).

12.2.3. Coverage of safe water sources 12.2.4. Primary source of water supply _____

12.2.5. Others _____

12.3. Medical instruction

13. Focusing on the eight PHC components, the status of primary health care components

Delivery)

13.1MCH -----, ANC -----, PNC -----)

13.2 FP: Methods, Contraceptive Prevalence, and Contraceptive Acceptance

13.3 EPI (cold chain, vaccination, outreach service) _____

13.4 Sanitation and environmental health

13.4.1 Latrine coverage and use rate _____

Solid waste management: _____

13.4.3 Managing liquid waste _____

13.5 Endemic diseases; 13.5.1 Malaria: At danger are all kebeles and populations in them. _____

- ITN coverage, which now includes the present district
- This year, is there an IRS? (No kebeles) _____ HH protected population ____ covered _____
- Total cases per year, deaths per year, and 5-year cases ____ fatalities (5 total)
- Lack of malaria supplies (RDT, for example) _____

• Other problems _____ 13.5.2 Leprosy and TB

• Total cases of TB _____

• PTB negative _____

• Positive for PTB _____

• E PTB _____

• Rate of TB detection: _____

• The success rate of TB Rx

• _____ TB cure rate

• Success rate for TB medications: _____

• Defaulter on TB _____

• Death after using TB medication _____

All TB patients had their HIV tested. _____

• Total cases of leprosy on prescription 13.5.3 HIV/AIDS: • Total population screened for HIV in the previous year • VCT _____ PITC _____ PMTCT _____

There are currently no known HIV-related deaths.

• The number of new HIV cases per year is _____.

Overall PLWHA _____ On ART _____ In relation to Pre-ART _____

- Additional HIV preventive measures _____ 136. nutrition (malnutrition-related OTPs, SC, TSF, CBN, and PSNP activities), HO, and early warning
- Total OTP sites, _____ total OTP admissions per year _____
- The total number of SC locations, new locations each year, and admissions to SC as a whole per year are all _____.
- Is there a TSF (targeted supplementary feeding) or CBN (community-based nutrition) initiative in the woreda? If the program includes youngsters, _____ () _____ (No & %) • general state of food security

Lack of essential and vital medications _____

13.8. What do you consider to be the district's primary health issue(s)?

Annex 4 Checklist for drought derived nutritional assessment at Zonal and Woreda Health Department

Interviewer name _____ Institution: _____

Interview Date: DD-----MM----YYYY

Region: OROMIA

Zone: East Bale

The main contact at this location

Name: -

Position:

Tel:

SECTION I: SOCIO-DEMOGRAPHIC PROFILE

Q1. Population: Woreda total population Male: -----Female: -----Under -----

No. of women of reproductive age (age 15-49 yrs.) -----

No. of pregnant women: -----

Q2. Special Population (if any) Pastorals --Refugees ---IDP---- Migrant Workers -----

Q3. Number of HCs ----, Number of HPs -----

Q4. Number of Mobile health and Nutrition teams-----

Q5. Number of HEWs -----

Water availability at health centers (HC) -----

Q6. No. of health centres -----Number of Health Center with water access -----

No. of Health Center without water access -----

SECTION II: Coordination and management systems

Q7. Are there PHEM Officers at the Regional level? If yes how money Yes No

Q8. Does the RHB/Zone Health Office regularly report PHEM report as scheduled dates? Observe copies and comment Yes No

Q9. Are there PHEM Officers/focal persons at Woreda and HC levels?

If yes how many are there in the woreda level Yes No

If yes how many are there in the HC

Q10. Do the Woredas, health facilities, and HEWs regularly report PHEM report as scheduled dates? Observe copies and comments Yes No

Q11. Are all relevant government, NGOs, and UN agencies represented at Regional PHEM? Yes No no hear

Q12. Is there a multi-sector health coordination forum? If yes how frequently meet? Yes No

Q13. Is there a Public Health Emergency preparedness and response plan?

Q14. Does it include reproductive health? Yes No

Q15. Is there an accessible emergency response fund for PHEM at the regional level?

If yes how much allocated. Yes No

Q16. Mention anticipated epidemics (If yes please indicate Zone/Woreda at risk and risk population per anticipated risk :(Use the back side) Pregnant, under five5 children _____ Lactating _____ women _____

Q17. Public Health Emergency Management Yes No

Q18. Is there a Public Health and Nutrition Emergency Preparedness and Response plan? Yes No If yes, is the plan budgeted/ funded? Yes No

Q19. Is there a trained staff on PHEM basic level (Regional/Zonal/Woreda/HFs) Yes No? If yes specify the number of trained personnel per level:

Region/Total: Female ___ Male _____ Zone: Female _____ Male _____

Woreda: Female ___ Male ___ Yes No

Q20. Is there a Regional/Zonal trained Rapid Response Team (RRT)? Yes or No

Q21. Is there a trained staff on Emergency nutrition management at all levels?

If yes specify the no. Total: Male ___ Female _____

Disease outbreaks

Q22. Was there an outbreak in the last 3 months? YES _____ NO _____

If yes, specify the type of disease

Type of outbreak _____ Number of cases _____ Deaths _ (specify the time period) _____

Q23. Is there any on-going outbreak of any disease? YES _____ No _____

Type of outbreak __ Number of cases _____ Deaths __ (specify the time period) _____

SECTION III: RISK FACTORS

Q25. Diseases Risk factors for epidemics to occur Yes No

Q26. Malaria endemic area s Yes No

Presence of malaria breeding site Yes No

Interrupted or potentially interrupting river Yes No

Was there any prevention and control activities Yes No

Number of Malaria kebeles and total population in these Kebeles _____ Pop

Q27. Meningitis was there a Meningitis epidemic in the last 3 years (If yes specify date) Yes No

Q28. AWD was there an AWD epidemic in the last three years

(If yes specify date) _____ _no _____

Q29. Is there ongoing measles outbreak Yes No

Annex II: Drought Assessment Checklist for stakeholders (different sectors)

Role and response sector _____

Involvement in which drought response(s) _____

Q1. How reliable was the needs assessment data used for planning?

Q2. To what extent do the planning documents and priorities reflect the needs and priorities of affected people and vulnerable groups?

Q3. Agriculture Emergency livestock interventions (fodder, water, vaccination, destocking)

Disaster mitigation measures (irrigation, crop, and vegetable production, fodder production)

Q4. Education School feeding Activities to create a protective environment for school-age children and adolescents

Q5. Shelter / Provision of emergency shelter & materials Population movement tracking, registration, profiling Shelter resilience & disaster risk mitigation and Food distribution Preparedness measures

Q6. Health:-Provision of life-saving health services Detection and response to epidemic disease outbreaks

Nutrition SAM identification and treatment MAM identification and treatment

Caring and feeding practices for children and pregnant and lactating women Continuum of case integrated response with WASH, Health, Food / Cash

Q7. WASH Emergency water supply for human and livestock consumption Sanitation services Hygiene promotion Rehabilitation of non-functional WASH infrastructure

Q8. Were any geographical areas under- or over-served during the response? Why?

Q9. Based on your own and collective monitoring, did aid reach those most in need? If not, who was (likely) left out?

Q10. How were cross-cutting issues (gender, age, disability, and environment) integrated with the response? Was this adequate? What else could have been done?

Q11. What measures did your organization put in place to ensure that the response was conflict-sensitive? Were those issues discussed in coordination fora?

Q12. In your view, did the balance between different sectors and types of interventions adequately reflect needs? If not, which sectors were over-or under-served? Why?

Q13. Do you know of any unintended effects the response has had on drought-affected people and communities?

Q14. What kind of capacity strengthening measures for the government did your response include?

Q15. Do you have any evidence on whether government service delivery improved?

Q16. Did the response strengthen government service provision? How? Do you have any evidence on this?

Q17. What role did development actors play during the response? Was this appropriate/sufficient? If not, what other opportunities would there have been to link to development actors?

Q18. Did you participate in any way in the drought response?

Q19. Were you approached by any humanitarian actors and did you participate in relevant coordination for?

Q20. Would there have been other opportunities for involving or linking with development actors during the response?

Q21. Do your regular programs include disaster risk reduction, mitigation, or preparedness activities?

Q22. Do you have any crisis modifiers or similar ways to adapt your response in your organization?

Q23. Do you believe that the relationship between the humanitarian system and the Government was handled appropriately? Why / why not?

Q24. Did you work with national or local NGOs during the response? Why / why not? If yes: Did you include any capacity strengthening measures in your activities?

Q25. What was your role in the response?

Q26. Did the response strengthen your capacities? Why / why not? How?

Q27. Would there have been any other opportunities for involving national and local NGOs and strengthening their capacities?

Q28. How effective was coordination in your sector/cluster? Why?

Q29. Which other sectors/clusters did you (and your cluster) coordinate with?

Q30. How well did overall strategic coordination and inter-cluster coordination work? Why? Do you know of any examples where duplications were avoided through coordination?

Q31. Do you know of any gaps that could not be filled despite coordination?

Q32. Did your organization have funding available in time to start the response? If not, when did funding arrive for your biggest program, and when did you begin implementation? Were there any delays? Why?

Q33. Was there a strong collective effort to mobilize resources? If so, how successful was it? Did donor policies foster cooperation or engender competition among humanitarian agencies?

Q34. Were there any other factors that either enabled or hindered an effective response? Were there any that were not working or were missing? What are your top three recommendations for improving the way the humanitarian system in Borena functions, in order of priority?

Q35. What specific steps could be taken to achieve this?

Q36. Are there any documents we should read or any relevant data you could share?

Annex II: Checklist drought assessment at Community level

Name of Woreda: _____ Name of Kebele: _____ Mobile home other

Demographic Characteristics

Age of the person interviewed: _____

Sex of the person interviewed: Male Female

Q1. Does your HH own or rent your place of residence?

Own Rent Other-----

Q2. Including yourself, how many people live in your HH?

Q3. Including yourself, how many people living in your HH are Less than 2 years old? 2-17 years?
_____ 18-64 years? _____ 65+ years?

Communications

Q4. What is your HH's primary source of information about drought? (Check ONE)

Newspaper TV Friends Family members radio Work social media

Place of worship other,

Q5. What is your HHs most preferred method for receiving information about an emergency event? (Check ONE) TV Radio Cell phone social media Word of mouth other

Water Supplies

Where did your HH water come from before the drought hit last year? (Mark EACH as applicable.) canned water, a private, municipal, or local water system Private wells, surface water (lake, river, spring), and other

Q6a. If yes, has the amount of water produced at your HH lessened in the last 12 months? Yes No

Do you or anyone in your home use tap water for drinking or cooking?

Does your family know of any problems with the quality of your tap water?

avoiding using tap water, yes or no

Q8a. What kinds of problems, if any?

Q9. Has your HH noticed a change in the colour, clarity, flavour, or odour of the water? (Mark EACH as applicable.) None in terms of appearance, transparency, odour, or flavour. Preventing Drought and assistance practices.

Q10. Have water shortages caused you or your family members to reduce water use? NA, Yes, No,

Q11: Has your HH taken any further measures to conserve water? Yes No

Q12. If the drought extended this summer, will your HH be able to further reduce water use? Yes No

Q13. Is there anyone in your HH that needs help because of the drought? Yes, No, or NA.

Q13. If so, what kind of help did your HH require? (Mark EACH as applicable.)

drinking, medical, and well-drilling purposes Aid with finances, food assistance, job placement, wildfire suppression, energy or utility assistance, and financial relief. Additional,

Q14. What kind of assistance did your family receive throughout the droughts? None, Food, vaccines for animals, and animals

Health

Q15: How has the drought affected your family? One youngster (male or female) and at least one adult (male or female) died. At least one individual (male or female?) got sick. We moved; our livestock or crops died; we sold our property; other: _____

16. The state of one's health (including malnutrition, infectious, True /False

Q17. More animals have been seen in residential areas. True or False:

Q18. I saw more dead animals (like fish). True or false:

Q19. More mosquito breeding places have been spotted. True or false:

Q20. More ticks were seen in True or False

Q21. Feel uncomfortable swimming in public bodies of water due to "swimmers itch," algae, etc.

Q22. There have been noticeable changes to the landscape, such as fewer ponds and diseases, and other disorders) observation of the drought ----

