

**ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN
HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA**

by

DENG CHUOL YIECH

submitted in accordance with the requirements

for the degree

DOCTOR OF PHILOSOPHY

in the subject

PUBLIC HEALTH

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF ROSE MMUSI-PHETOE

DECEMBER 2020

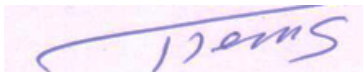
Student number: 6193-396-1

DECLARATION

I, **Deng Chuol Yiech**, declare that “**Assessment of the availability of public health services in humanitarian responses in Gambella, Ethiopia**”, is my own work and that all the sources that I have been used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the thesis to originality checking software and that it falls within accepted requirements for the originality.

I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution.



22 January 2021

SIGNATURE

Deng Chuol Yiech

DATE

DEDICATION

The thesis is dedicated to frontline health workers who save and sustain the lives of humanitarian-affected people during emergencies, with very limited resources for service provision.

The thesis is further dedicated to my wife and children for their love, and for standing firm with me during the writing of this study.

ACKNOWLEDGEMENTS

Always and now, I would like to thank GOD, the Father of all the earth and heaven, for caring and leading me during the study.

I would like to acknowledge the following people; without their support, this thesis would not have been possible:

- Prof Rose Mmusi-Phetoe, my supervisor, for her courteous coaching, close mentoring and follow-ups, her patience and consistent encouragement. Her constant motivation, timely response to my work with solid feedback and direction from beginning to end motivated me to complete this thesis. It is with great honour and privilege that I recognise her wisdom and am very grateful to her.
- My relatives, friends, and colleagues for their support and encouragement during the difficult days when the PhD journey became difficult. I thank them for being there during those unforgettable days, where I felt like walking alone in the bush.
- The University of South Africa (UNISA) and Gambella Regional Health Bureau for allowing me to conduct the study. I am honoured to have been part of these institutions.
- The study participants, for their willingness to provide information and contribute to the study in different ways.
- My wife, Mrs Nyandech Tut Deng, for her unwavering support and understanding, and for taking care of the home responsibilities and children so that I could focus on the study. My sincere thanks to my children for their patience, unreserved support, and love during the study period. I will forever be grateful to my family.
- My deceased mother, Nyapal Jock Deng, and my deceased father, Chuol Yiech Wal, who raised, taught and ensured that I attend school; hence moulding the product that I am today. They were the best parents to me, and I acknowledge their supports.

Once again, thank you Almighty God, the mission is successfully accomplished!

**ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN
HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA**

STUDENT NUMBER: 6193-396-1
STUDENT: DENG CHUOL YIECH
DEGREE: DOCTOR OF PHILOSOPHY (PhD)
DEPARTMENT: PUBLIC HEALTH, UNIVERSITY OF SOUTH AFRICA
SUPERVISOR: PROF ROSE MMUSI-PHETOE

ABSTRACT

The purpose of the research was to assess the availability of public health services in response to humanitarian crises in Gambella, Ethiopia. This informed the development of a public health service protocol for humanitarian emergency responses in Ethiopia. The objectives of the study were explored and identify current humanitarian health emergency needs and responses, describe the availability of public health services required for humanitarian emergency responses, study and critically analyse different humanitarian responses in respect of health care services and related protocols in other countries, develop a context-specific and needs-based protocol for humanitarian emergency responses in Gambella, Ethiopia, clarify the policy and programme implications of such a protocol.

A mixed-method research design was used to conduct the study. Data were collected from 32 health facilities to assess the availability of required resources and public health services. A checklist and in-depth interview guide were used to collect the data.

The quantitative data were analysed using simple descriptive statistics using frequency distribution tables and graphs. Thematic analysis was employed to analyse the qualitative data.

The study revealed a lack of resources which threatened the availability of public health services in humanitarian emergencies. The ever-increasing number of refugees overstretched the limited resources, leading to stockouts of medicines, other health commodities and equipment. The absence of emergency preparedness, poor

coordination of services, coupled with a lack of integration of services exacerbated public health service delivery.

The study findings informed the development of a public health service protocol for humanitarian responses in Ethiopia. The study further recommended further research on other factors that might affect humanitarian responses and coordination.

Key terms: Assessment; availability; emergency; Gambella; health services; health systems strengthening; humanitarian responses; public health; refugees; required resources.

TABLE OF CONTENTS

DECLARATION.....	I
DEDICATION	II
ACKNOWLEDGEMENTS	III
ABSTRACT	IV

CHAPTER 1

STUDY ORIENTATION	1
1.1 INTRODUCTION	1
1.2 CONTEXTUAL INFORMATION OF THE STUDY PROBLEM.....	1
1.2.1 Public health services in Ethiopia	1
1.2.2 History of the problem.....	4
1.2.3 Humanitarian information in Gambella	5
1.2.4 Humanitarian situations and health services at global and national levels	6
1.2.4.1 Maternal health and child health situation	7
1.2.4.2 Communicable disease prevention and control.....	11
1.2.5 Global and national humanitarian situations.....	15
1.2.6 Health system and humanitarian situation in Gambella Region	18
1.3 PROBLEM STATEMENT	20
1.4 PURPOSE AND OBJECTIVES OF THE STUDY	22
1.4.1 Purpose of the research	22
1.4.2 Objectives	22
1.4.3 Questions.....	22
1.5 SIGNIFICANCE OF THE RESEARCH	23
1.6 KEY TERM DEFINITIONS.....	24
1.6.1 Key concept definitions.....	24
1.6.2 Operational definitions	26
1.7 THEORETICAL FOUNDATIONS OF THE STUDY	28
1.8 RESEARCH DESIGN AND METHODS	28
1.9 LIMITATIONS AND SCOPE OF THE STUDY	29
1.10 ORGANISATION OF THE STUDY	29
1.11 CONCLUSION.....	30

CHAPTER 2

LITERATURE REVIEW	31
2.1 INTRODUCTION AND BACKGROUND.....	31

VII

2.2	CONCEPTUAL FRAMEWORK	36
2.2.1	Socio-economic and political contexts of the study area	40
2.2.2	Human resources in a conceptual framework	41
2.2.3	Availability of drugs, reagents, infrastructure, guidelines and other supplies	42
2.2.4	Health service delivery in a conceptual framework.....	44
2.2.5	Data for decision-making and interventions.....	45
2.2.6	Finance in a conceptual framework	48
2.2.7	Leadership and governance in a conceptual framework	50
2.2.8	Improved humanitarian health responses in emergencies – conceptual framework	53
2.2.9	Increased level of awareness and a resilient health system.....	55
2.3	PUBLIC HEALTH SERVICES IN ETHIOPIA	56
2.4	SERVICE AVAILABILITY	59
2.4.1	Infrastructure availability	60
2.4.2	Health workforces	60
2.4.3	Utilisation of services	61
2.5	GENERAL SERVICE AVAILABILITY	61
2.6	SPECIFIC SERVICE AVAILABILITY	63
2.7	PUBLIC HEALTH IMPORTANCE IN HUMANITARIAN RESPONSE	64
2.8	CONCLUSION.....	66
 CHAPTER 3		
RESEARCH DESIGN AND METHODOLOGY		68
3.1	INTRODUCTION	68
3.2	RESEARCH SETTING	68
3.3	RESEARCH DESIGN	69
3.3.1	Rationale for the mixed-method approach.....	70
3.3.1.1	Quantitative phase	72
3.3.1.2	Qualitative phase	72
3.3.2	The research paradigm.....	73
3.4	RESEARCH METHODS	74
3.4.1	Study population	74
3.4.2	The target population.....	74
3.4.3	Eligibility criteria	76
3.4.4	Sample size	76
3.4.5	Sampling techniques	77
3.4.6	Data collection	78
3.4.6.1	Data collection approach and methods	78
3.4.6.2	Development and piloting of the data collection instruments.....	78

3.4.6.2.1	Development of instruments for data collection	78
3.4.6.2.2	Piloting of research instruments	79
3.4.6.3	Characteristics of data collection instruments	80
3.4.6.4	Process of data collection	80
3.4.7	Data analysis	81
3.5	TRUSTWORTHINESS	84
3.5.1	Authenticity	84
3.5.2	Credibility	84
3.5.3	Confirmability	85
3.5.4	Dependability	85
3.5.5	Transferability	85
3.6	ETHICAL CONSIDERATIONS	86
3.7	CONCLUSION.....	87

CHAPTER 4

ANALYSIS, PRESENTATION AND DISCUSSION OF THE RESEARCH FINDINGS		88
4.1	INTRODUCTION	88
4.2	DATA MANAGEMENT AND ANALYSIS	89
4.2.1	Data management	89
4.2.2	Data analysis	89
4.2.2.1	Data analysis quantitative phase	89
4.2.2.2	Data analysis qualitative phase	90
4.3	RESEARCH FINDINGS.....	90
4.3.1	Sample demographics	90
4.3.1.1	Characteristics of respondents and participants	90
4.3.1.2	Types of assessed health facilities	91
4.3.2	Availability of public health services in humanitarian responses in Ethiopia.....	92
4.3.2.1	Availability of public health services and required resources.....	92
4.3.2.1.1	Availability of maternal, new-born, child and adolescent health services	93
4.3.2.1.2	Communicable disease prevention and control and the available services.....	106
4.3.2.1.3	Availability of data sources observed during the document reviews	126
4.3.2.2	Humanitarian emergency health needs and responses	132
4.3.2.2.1	Theme 1: Public health needs during humanitarian emergencies	132
4.3.2.2.2	Theme 2: Availability of public health services in humanitarian responses	147
4.3.2.2.3	Theme 3: Potential causes of humanitarian crises	154
4.3.2.2.4	Theme 4: Challenges during humanitarian responses	161
4.3.2.2.5	Theme 5: Emerging issues as lessons learned	185
4.3.2.2.6	Theme 6: Role and responsibilities during humanitarian responses	207

4.3.3	Overview of key research findings	212
4.4	CONCLUSION	213

CHAPTER 5

PROPOSING A PUBLIC HEALTH SERVICE PROTOCOL FOR HUMANITARIAN

EMERGENCY RESPONSES IN GAMBELLA, ETHIOPIA.....215

5.1	INTRODUCTION	215
5.2	MAIN FINDINGS.....	216
5.2.1	The current humanitarian emergency needs and responses	216
5.2.1.1	The current humanitarian emergency needs	216
5.2.1.2	The current humanitarian emergency response	218
5.3	PUBLIC HEALTH SERVICE PROTOCOL FOR HUMANITARIAN EMERGENCY RESPONSES IN GAMBELLA REGION	219
5.3.1	The elements of a public health service protocol for humanitarian emergency responses	222
5.3.1.1	Problem identification	222
5.3.1.2	Context	222
5.3.1.3	Programme cycle.....	222
5.3.1.3.1	Input.....	223
5.3.1.3.2	Activities.....	223
5.3.1.3.3	Output	225
5.3.1.3.4	Outcomes	226
5.3.1.3.5	Impact.....	226
5.4	POLICY AND PROGRAMME IMPLICATIONS IN RESPECT OF THE DEVELOPED PROTOCOL.....	227
5.5	RECOMMENDATIONS FOR FUTURE RESEARCH	227
5.6	LIMITATIONS, STRENGTHS AND CONTRIBUTION OF THE STUDY	228
5.6.1	Limitations of study	228
5.6.2	Strengths and contributions of the study	229
5.6.2.1	Strength of the study in relation to the protocol	229
5.6.2.2	Strength of the study in relation to the system's strengthening	229
5.6.2.3	Strength of the study in relation to the methodology	230
5.6.3	The overall contribution of the study	230
5.6.4	Strengths of the study in relation to its contribution at policy level	231
5.7	CONCLUSION.....	231
5.8	OVERALL CONCLUSION	232

LIST OF REFERENCES	235
--------------------------	-----

APPENDICES271

APPENDIX A: ETHICAL CLEARANCE CERTIFICATE FROM UNISA272

APPENDIX B: PERMISSION LETTER TO CONDUCT RESEARCH274

APPENDIX C: APPROVAL LETTER TO CONDUCT RESEARCH275

APPENDIX D: RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM.....276

APPENDIX E: DATA COLLECTION TOOLS279

APPENDIX F: LANGUAGE EDITING CERTIFICATE292

APPENDIX G: ORIGINALITY TURNITIN REPORT293

LIST OF TABLES

Table 3.1	Public health facilities in Anywaa Zone	75
Table 3.2	Public health facilities in Majang and Nuer Zones	75
Table 3.3	Public health facilities included in Itang special district and Gambella town	76
Table 3.4	Type of public health facilities included in the survey	77
Table 4.1	Profile of health workers in the assessed health facilities in Gambella, Ethiopia (N=32)	90
Table 4.2	Types of assessed health facilities across the districts of Gambella, Ethiopia (N=32)	91
Table 4.3	Percentage distribution and number of facilities with required resources for family planning services in Gambella, Ethiopia (N=32)	94
Table 4.4	Percentage and number of health facilities providing adolescent health services in Gambella, Ethiopia (N=32)	103
Table 4.5	Percentage distribution and number of available medicines for adolescent health services in health facilities in Gambella, Ethiopia (N=32)	105
Table 4.6	Percentage availability and number of malaria services in health facilities in Gambella, Ethiopia (N=32).....	106
Table 4.7	Percentage and number of reported stockouts of medicines and commodities in health facilities in Gambella, Ethiopia (N=32)	114
Table 4.8	Percentage availability and number of infrastructure items in health facilities in Gambella, Ethiopia (N=32).....	121
Table 4.9	Percentage distribution of basic amenities in health facilities in Gambella, Ethiopia (N=32)	122
Table 4.10	Percentage distribution of the availability of diagnostic capacity in health facilities in Gambella, Ethiopia (N=32)	126
Table 4.11	Theme 1: Public health needs during humanitarian emergencies	133
Table 4.12	Theme 2: Availability of public services in humanitarian responses	147
Table 4.13	Theme 3: Potential causes of humanitarian crises	155
Table 4.14	Theme 4: Challenges during humanitarian responses.....	162
Table 4.15	Theme 5: Emerging issues as lessons learned	185
Table 4.16	Theme 6: Roles and responsibilities during humanitarian responses.....	207

LIST OF FIGURES

Figure 2.1	Conceptual framework for public health service availability for humanitarian responses.....	38
Figure 2.2	Public health care system in Ethiopia	58
Figure 3.1	Concurrent steps followed in the data analysis process	83
Figure 4.1	Percentage distribution of health facilities that offer antenatal care services in Gambella, Ethiopia (N=32).....	96
Figure 4.2	Percentage distribution of services offered in delivery care in health facilities in Gambella, Ethiopia (N=32).....	97
Figure 4.3	Percentage distribution of hospitals and lower-level facilities offering obstetric care services in Gambella, Ethiopia (N=32).....	99
Figure 4.4	Percentage distribution of available immunisation services in health facilities in Gambella, Ethiopia (N=32).....	100
Figure 4.5	Percentage distribution of availability of commodities and services provided to children in health facilities in Gambella, Ethiopia (N=32).....	102
Figure 4.6	Percentage distribution of health facilities' capacity to offer adolescent health services in Gambella, Ethiopia (N=32).....	104
Figure 4.7	Percentage distribution of health facilities offering tuberculosis diagnosis and treatment in Gambella, Ethiopia (N=32).....	107
Figure 4.8	Percentage distribution of health facilities with guidelines and trained health workers on the tuberculosis program in Gambella, Ethiopia (N=32).....	108
Figure 4.9	Percentage distribution of HIV services available in health facilities in Gambella, Ethiopia (N=32)	110
Figure 4.10	Percentage distribution of health facilities implementing PMTCT interventions in Gambella, Ethiopia (N=32).....	112
Figure 4.11	Percentage and number of health facilities offering sti services in Gambella, Ethiopia (N=32)	113
Figure 4.12	Percentage and number of health facilities offering basic surgical services in Gambella, Ethiopia (N=32).....	115
Figure 4.13	Percentage of health facilities offering blood transfusion services in Gambella, Ethiopia (N=32)	116
Figure 4.14	Percentage distribution of essential medicines in health facilities in Gambella, Ethiopia (N=32)	118
Figure 4.15	Percentage of facilities that received supervision during the survey of health facilities in Gambella, Ethiopia (N=32)	119
Figure 4.16	Percentage of basic amenities in health facilities in Gambella, Ethiopia (N=32)	123
Figure 4.17	Percentage of available and functional basic equipment in health facilities in Gambella, Ethiopia (N=32).....	124
Figure 4.18	Percentage distribution of availability of infection control items in health facilities in Gambella, Ethiopia (N=32)	125
Figure 4.19	Percentage of health facilities with ANC reports as a document source in Gambella, Ethiopia (N=32).....	127
Figure 4.20	Percentage of health facilities with institutional delivery source documents in Gambella, Ethiopia (N=32).....	128
Figure 4.21	Percentage of health facilities with source documents for pregnant mothers who received HCT, prophylaxis, ART coverage ART services in Gambella, Ethiopia (N=32)	129

Figure 4.22	Percentage distribution of availability of immunisation data sources in health facilities in Gambella, Ethiopia (N=32)	130
Figure 4.23	Percentage distribution of availability of tuberculosis data sources in health facilities in Gambella, Ethiopia (N=32)	131
Figure 4.24	Percentage distribution of availability of malaria data sources in health facilities in Gambella, Ethiopia (N=32).....	132
Figure 5.1	A needs-based public health service protocol for humanitarian emergency responses in Gambella Regional State, Ethiopia.....	221

LIST OF ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
ALNAP	Active learning network for accountability and performance
ANC	Antenatal care
ARRA	Administration for refugee and returnees affairs
ART	Antiretroviral therapy
ARV	Antiretroviral
AU	African Union
CARE	Christian Action Research and Education
CDC	Centre for Disease Control
CDC	Communicable diseases control and prevention
CEmOC	Comprehensive obstetric care
CHS	Core Humanitarian Standard
CSA	Central Statistical Agency
DI	Development Initiatives
ECDC	European Centre for Disease Prevention and Control
ECHO	European Commission.
EDHS	Ethiopian demographic and health survey
EPHI	Ethiopian Public Health Institute
EPI	Expanded programme on immunisation
FDRE	Federal Democratic Republic of Ethiopia
FHAPCO	Federal HIV/AIDS Prevention and Control Office
FMHACA	Food Medicine and Health Care Administration and Control Authority of Ethiopia
FMOH	Federal Ministry of Health
FP	Family planning
GF	Global fund
GoSLMoHS	Government of Sierra Leone's Ministry of Health and Sanitation
GRHB	Gambella Regional Health Bureau
HIV	Human immunodeficiency virus
HSDP	Health sector development plan
IASC	Inter-Agency Standing Committee
ICCM	Integrated community case management
ICF	International classification of functioning, disability and health
IDMC	Internal Displacement Monitoring Centre
IDP	Internally displaced person
IMATS	Development of the Inventory Management and Tracking System
IMNCI	Integrated management of new-borns and childhood illnesses

IOM	Institute on Medicine
IPCC	Intergovernmental Panel on Climatic Change
ISs	Information systems
MNCH	Maternal new-born and child health
MOH	Ministry of Health
NDRC	National Disaster and Risk Management Commission
NRC	Norwegian Refugee Council
OHA	Oregon Health Authority
ORS	Oral rehydration salt
PMTCT	Prevention of mother-to-child transmission of HIV/AIDS
RHB	Regional health bureau
SARAM	Service availability and readiness assessment mapping
SDGs	Sustainable development goals
SPSS	Statistical Package for Social Sciences
STIs	Sexually transmitted infections
TB	Tuberculosis
UN	United Nations
U5MR	Under 5 mortality rate
UNAIDS	United Nations Programme on HIV/AIDS
UNDP	United Nations Programme Development
UNFPA	United Nations Population Fund
UNHCR	United Nations Higher Commissioner for Refugee
UNICEF	United Nations Children's Emergency Fund
UNISA	University of South Africa
UNOCHA	United Nations Office for Coordination of Humanitarian Affairs
VCT	Voluntary counselling and testing
WASH	Water, sanitation and hygiene
WB	World Bank
WHCA	World Health Communication Associates
WHO	World Health Organization

CHAPTER 1

STUDY ORIENTATION

1.1 INTRODUCTION

This chapter begins by outlining the background to the research problem, the aim of the study, the significance of the study, and definition of terms. The theoretical foundations of the study, the research design and method, and the scope and limitations of the study are then detailed, and finally, the structure of the dissertation is outlined.

1.2 CONTEXTUAL INFORMATION OF THE STUDY PROBLEM

This section examines the context of the problem. The humanitarian information and health situation specific to Gambella Region, and at global and national levels, are explored.

1.2.1 Public health services in Ethiopia

Health services in Ethiopia are structured according to a three-tier public health system composed of tertiary health care services, the secondary health care system, and primary health care units (PHCUs) (Federal Democratic Republic of Ethiopia Ministry of Health [FMOH] 2015:142).

At the tertiary level of health services, each specialised hospital provides health services to 3.5 million to 5 million people in its catchment area. Tertiary hospitals serve as referral facilities from the secondary level and are used as teaching hospitals (FMOH 2015:142). The secondary level health tier comprises general hospitals with the objective of serving 1 million to 1.5 million people. These general hospitals receive referral cases from PHCUs.

The lowest health service level consists of PHCUs, which are frontline health facilities that are the initial contact for community members as a point of entry to health service provision. Each PHCU has five satellite health posts, and provides health services to between 60,000 and 100,000 people. Health centres and health posts aim to provide

various health programme interventions: the former to between 15,000 and 25,000 people, and the latter to between 3,000 and 5,000 people (FMOH 2015:142). The primary health care services provided in the health posts include the promotion of sanitation and hygiene to prevent and control communicable diseases.

According to the FMOH (2016:4), all satellite health posts each employ two female staff members. These community health workers are recruited from the villages' female students who have completed high school education. Those who are recruited receive training for one year on 16 packages of the health extension programme and receive a basic monthly salary. Some health extension workers' work can be done at the community level, either by conducting home visits as part of the maternal and child health outreach programme, or by assessing gaps in community members' knowledge on selected health topics and then increasing their awareness of those topics. They also work as a bridge between the health facilities and communities in referring sick clients to health facilities. Health extension workers are also mandated to assist patients with chronic diseases, such as tuberculosis (TB), so that they can continue their treatment at home.

Health centres are staffed by about 20 mid-level health professionals who can provide basic curative and preventive services. They also provide referral services from health posts to the next level of health facilities, and technical, logistical and administrative support to health posts. Regarding bed occupancy, they have up to five beds for inpatient health services (FMOH 2016:4).

Primary health care hospitals offer case management through outpatient and inpatient departments, including rehabilitation services. They also provide admission services for medical, surgical, paediatric, obstetric and gynaecological cases. The primary level of health care services also has referral linkages with health centres, offers services such as blood transfusions, and clinics for ophthalmic and mental health patients. The facilities serve as practice centres for junior health science students.

Primary hospitals have a capacity of 25 to 50 beds for inpatient services and are staffed by over 50 health professionals in distinct categories. In addition, the Health Sector Transformation Plan of 2015 (FMOH 2015:142) also recommends that general hospitals should provide comprehensive primary health care services to the catchment area, typically 1 million people. On average, each general hospital has a total of 234 health

workers with different specialisms. These hospitals also serve as training institutions for health workers at the bachelor's degree level, for instance, the baccalaureate degree in nursing and specialised degree of master's in emergency surgery to those who have either a health officer first degree (equivalent to a medical officer in some countries) or a first degree in nursing. Each tertiary hospital serves an estimated population of 5 million in its catchment area and has 440 staff members to perform different functions based on their specialised areas. These hospitals receive referral cases from general hospitals under their catchment population (FMOH 2015:142).

Many social, political and development reforms were introduced to all sectors after a change in regime in 1991, including the development of a first national health policy in 1997, with more focus on rural and public participation (FMOH 2013a:3), and the long-term strategic Health Sector Development Plan (HSDP) (FMOH 2013a:3). The Ethiopia Mini Demographic and Health Survey conducted in 2014 (Central Statistical Agency (Ethiopia) [CSA] 2014:1) recognised the need to develop a health policy that would reduce health problems and contribute to the country's economic growth. Such a policy would consider and prioritise public health preventive measures, including the need for health service provision to the rural and disadvantaged populations of the country. The policy addresses issues related to food insecurity and housing conditions that can have a negative effect on the population.

Efforts to establish inclusive councils for health services, with the participation of community representatives at various levels, was a critical step for the democratisation of the health system in Ethiopia. The identification of health needs also helped the health sector to mobilise resources, propose interventions based on prioritised health programmes, and address the challenges identified. Though the public health system still has unfinished business in terms of capacity, the implementation of the interventions, and monitoring and evaluation of the health programmes, were further recognised as core elements of the HSDP (International Classification of Functioning, Disability and Health [ICF] 2013:2). Ethiopia's HSDP emphasised services and interventions that improve the health of women, new-borns, children and adolescents. Strategies were thus implemented with the objective of reducing mortality among children, including deaths caused by vaccine-preventable diseases. The prevention and control of TB, Human immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS) and malaria were among the remaining challenges after the Millennium Development Goal (MDG)

era, as these diseases were still public health threats. Kumar and Boke (2015:3617) state that the decentralisation of health services in Ethiopia has improved the delivery of health services through expanded health infrastructure and stakeholders' involvement. However, despite the progress in the delivery of services, the country is currently facing humanitarian emergencies in addition to its chronic emergency conditions related to drought, hazards, and flood, and others that are exclusively man-made.

1.2.2 History of the problem

Ethiopia ranks among the largest refugee-hosting countries in Africa and, according to the United Nations Refugee Agency, has chosen to keep its doors open to asylum seekers from neighbouring countries (United Nations High Commissioner for Refugee [UNHCR] 2017c:9). Currently, Ethiopia hosts a total of 894,000 refugees in 26 camps across five of its nine regional states. These refugees are from 18 nationalities and 24 African countries (UNHCR 2016b:33). Among the asylum seekers entering Ethiopia, South Sudan, its western neighbour, is the major source of evacuees, with over 50% of the total numbers of refugees hosted in Gambella, which is the second smallest regional state in the country (UNHCR 2017c:9). As of 2017, Ethiopia hosted 253,800 refugees from Somalia in Somali Region, which makes Somalia the second-largest source of refugees after South Sudan, followed by Eritrea, with 164,600 refugees (UNHCR 2018a:18).

There is a weak health system in Gambella (UNHCR 2016b:34), yet the massive influx of refugees into the region has meant the local health system provides emergency health responses at refugee entry points before relocating entrants to refugee camps. However, the refugee burden should not be underestimated. According to UNHCR (2017c:10), in addition to those refugees living in the refugee camps, others live in almost all locations in the country, including Addis Ababa. And while the country has shown a generous reception of refugees year after year, the conditions caused by this influx – such as poor infrastructure, elevated levels of poverty, adverse weather conditions, poor human resource capacity – might be contributing to Gambella's poor health service indicators (UNHCR 2017c:10). The burden might also be fuelled by the absence of protocols for humanitarian responses.

In addition, the UNHCR (2017a:10) notes that with the complexity of conflicts in neighbouring countries, the refugee emergency in Ethiopia has a protracted nature. Some refugees have been living in the country for decades, and many might continue living in Ethiopia for years to come (UNHCR 2017c:11). Looking for long-term strategies that could address the health needs of both the host and refugee communities is therefore critical, as refugees compete with the vulnerable host communities over limited resources (UNHCR 2016b:10).

Ethiopia participated in the 1951 Refugee Convention, took part in the refugee protocol developed in 1967, and joined the refugee convention led by the Organization of Africa Unity in 1969 (UNHCR 2016b:33), and to date, Ethiopia has been following an age-old tradition of hosting refugees (Government of Ethiopia 2017:6). According to the UNHCR (2017c:11), refugees seek asylum in Ethiopia for various reasons, including conflicts due to insecurity, political instability, military offensives, famine, and other problems in their home country. Thus, maintaining an open-door policy for incoming asylum seekers, and allowing humanitarian access to meet their needs, are principles the country follows in providing refugees protection.

1.2.3 Humanitarian information in Gambella

The UNHCR (2016b:34) reveals that refugees hosted in six different camps in Gambella reached a total of 285,657 in 2016, of whom 230,434 arrived after the eruptions of war in December 2015 in the national capital of South Sudan. The war later escalated to other parts of the country, reaching the Ethiopian border where the asylum seekers sought safety and humanitarian assistance in Gambella. Gambella has maintained a long history of hosting South Sudanese refugees, even during the previous government regimes in Ethiopia, and has an open-door policy for evacuees. Moreover, a few refugees have been living in Gambella for more than 20 years, many of whom arrived during the Sudanese civil war in the 1980s (Carver & Nigusie 2019:4). With a host population of 435,135 in Gambella (CSA 2013:117), the number of South Sudanese refugees (426,550 in 82,763 households) in the region equalled that of the host community population in July 2018 (UNHCR 2018b:1).

Gambella is among the least developed regions in Ethiopia, where the disparity in basic social services is still wide, irrespective of its history of hosting refugees and extending

the hand of hospitality. Women and children account for 88% of the registered refugees in Gambella; 64% of children are under the age of 18 years; 30,180 are separated children; and 11,074 are people with specific needs (UNHCR 2018b:1).

In effect, Gambella has been overwhelmed due to the influx of refugees. The local population shares similarities with the refugee communities in terms of cultures and languages, making it difficult to distinguish the different groups from each other. With these similarities, authorised refugees receive health services at the nearest health facilities of host communities, resulting in resources and public health services being overstretched; doubling the population of Gambella means doubling the need for public health services. The local health system needs improvement in terms of its preparedness to fully contain emergency public health matters.

The local health system can be strengthened through the development of resilience and a needs-based protocol that is equipped for humanitarian responses.

1.2.4 Humanitarian situations and health services at global and national levels

According to the United Nations Population Fund (UNFPA) (2015:63), more than 80% of countries in need of humanitarian assistance due to conflicts, natural disasters or both did not meet the MDGs stated for women and children; namely, in terms of gaining access to women and children in disadvantaged areas affected by man-made and natural disasters. For this study, maternal and child health situations, both globally and nationally, are discussed.

De Cock, Davison, Simone and Slutsker (2013:1194) state that 76% of deaths in Africa are attributed to communicable diseases, maternal, neonatal or nutritional-related causes. This compares with 25% across the globe. The African Union (AU) (2016:4) also reports that Africa still confronts the world's most acute public health threats. Consequently, an African child dies almost every minute from malaria, while TB response is needed for approximately 1.3 million people in Africa (AU 2016).

Communicable diseases related to malaria, HIV/AIDS and TB pose a threat to public health by claiming close to 3 million people's lives every year (World Health Organization [WHO] 2015a:V). Additionally, the World Health Organization (WHO), Public Health

England and the United Nation's (UN's) Office for Disaster Risk Management (2013:1) recognise that communicable diseases have the potential to overrun existing health systems. The prevention and control of communicable diseases related to TB, HIV/AIDS and malaria, as well as epidemics and pandemics, require resilience and sustained health system presence at all levels for the timely response to public health threats. These desired goals can be achieved through strong health systems equipped with a well-resourced health workforce. Providing health services to children and women during emergency responses, including targeted and integrated communicable disease prevention and control measures during humanitarian crises, are the focus of this study.

1.2.4.1 *Maternal health and child health situation*

Maternal health situation: The United Nations (UN) 'Every Woman Every Child' initiative states that the health outcome indicators relating to women and children are deteriorating in many countries and the poorest countries are most affected (UN 2015b:25). Sadly, more than one woman loses her life every two minutes, and there is a global need to think differently about how the world can address women's health needs. Meanwhile, 28% of maternal deaths are related to non-obstetric causes such as malaria, AIDS, diabetes, and other chronic illnesses; unsafe abortions alone account for 8% of total deaths (UN 2015b:25). The UN also reports that cervical cancer accounts for the death of 270,000 women a year, and one in every three women in the reproductive age group of 15 to 49 experience violence; either physical or sexual (UN 2015b:25). Additionally, sepsis, pregnancy-related hypertension and bleeding-related complications account for a significant loss of life among women.

Approximately 7,700 neonates and 800 women are losing their lives every day because of gestation, labour and postpartum-related complications (WHO 2016d:5). Regrettably, family planning services, which could play a significant role in improving women's health, are largely unavailable to the world's 225 million mothers (UN 2015b:25).

Despite the significant loss of mothers and many children from maternity-related complications, the WHO and other UN agencies (WHO, UNICEF, UNFPA, UNDP and World Bank Group 2014:25) estimate that there have been significant reductions in mortality in some areas between 1990 and 2013. These declines were mostly observed in Eastern Asia, where it was reported to be 65%, followed by Southern Asia with a 64%

reduction, while the sub-Saharan Africa region had a 61% reduction in total deaths. Conversely, maternal mortality declined by only 44% between 1990 and 2015 in Africa (WHO 2015d:82), causing the WHO (2015d:82) to realise that despite remarkable progress on maternal mortality reductions in other parts of the world, maternal health improvement is unfinished business in the African region.

Of an estimated 303,000 maternal deaths worldwide in 2014, the majority were caused by maternity-related complications that could have been prevented through maternal health services being made available to pregnant and lactating mothers. Consequently, one in 180 women in the reproductive age group has a higher risk of death due to the unavailability or poor quality of maternal health services (WHO 2015d:82). Ethiopia ranks fourth in the world in terms of maternal mortality deaths, reporting 11,000 deaths annually; Nigeria ranks first, with 58,000 deaths, followed by India (45,000 deaths) and the Democratic Republic of Congo (22,000 deaths) (WHO, UNICEF, UNFPA, UNDP and World Bank Group 2015:19).

Globally, maternal deaths decreased from 385/100,000 to 216/100,000 live births between 1990 and 2015 (WHO et al 2015:21). Still, despite this reduction, the UN admitted that the MDG target of reducing maternal deaths by 75% had not been met by 2015, especially in developing countries (UN 2015c:5). The current target under the 'Sustainable Development' agenda is to reduce the global maternal death rate to below 70/100,000 live births by 2030 (UN 2015c:13). Furthermore, the WHO et al (2015:24) recommend the acceleration of progress to reduce the maternal mortality ratio by 7.5% each year between 2016 and 2030 to reach this target.

Between 1990 and 1995, Ethiopia had a progressive decrease in the maternal mortality rate from 1,250/100,000 live births to 1,080/100,000 live births. There was a similar decline between 2000 to 2005 and between 2010 to 2015, from 897/100,000 to 743/100,000, and from 523/100,000 to 353/100,000, respectively (WHO et al 2015:72). The participation of community members in the implementation of maternal health intervention programmes might have contributed to these reductions (FDRE 2016:43). Yet despite the decline in maternal mortality and progress that has been made in women and children's health services in Ethiopia, the data indicate that many women are still dying due to poor maternal health services in the country (WHO et al 2015:19).

The availability of antenatal care for pregnant mothers, delivery services, and assistance in the post-delivery period are equally essential to the reduction of maternal, neonatal and child health-related deaths. According to the ICF (2013:55), despite the WHO's recommendation for all pregnant women to receive regular antenatal care services to manage and detect pregnancy-related complications, antenatal care service utilisation in Ethiopia is low; in fact, it is lower compared to any other country in sub-Saharan Africa. The Central Statistical Agency and ICF International (CSA and ICF) (2016a:134) similarly found that antenatal care coverage in Ethiopia was a mere 28%, 34% and 62% in 2005, 2011 and 2016, respectively.

Child health situation: Getahun, Tadeg, Ejigu, and Kora (2015:1) point out that Ethiopia accounts for more than 4% of the world's maternal deaths, and 44% of under-five deaths in Ethiopia are attributed to new-born deaths. In support, the Italian Development Cooperation (2016:45) notes that neonatal mortality remained unchanged at 28 deaths per 1,000 live births between 2013 and 2015. While the infant mortality reduced by only 3%, the overall deaths of children reduced to 59 deaths per 1,000 live births in 2016, from 64 deaths per 1,000 live births in 2016.

It should, however, be noted that Ethiopia has shown remarkable progress in reducing under-five mortality rates. Between 1990 and 2016, the rate declined by 60% – from 166 child deaths per 1,000 live births to 67 deaths per 1,000 live births (CSA & ICF 2016a:124). The infant mortality rate also declined by 50% – 48 deaths per 1,000 live births in 2016 from 97 deaths per 1,000 live births in 1990. As for the neonatal mortality rate, in 2011 there were 49 deaths per 1,000 live births, and by 2016, this number had reduced to 29 deaths per 1,000 live births (CSA & ICF 2016a:124). All under-five mortality rates, including the neonatal and infant mortality rates, can be reduced through routine immunisation of all targeted children against the six most vaccine-preventable diseases: measles; polio; diphtheria, tetanus and pertussis, and TB (ICF 2013:41).

Furthermore, CSA and ICF (2016b:27) note that children are considered fully protected against vaccine-preventable diseases when receiving Bacillus Calmette-Guérin (BCG) for the prevention of TB, which is given at birth or at the first contact with health services. The other three doses are pentavalent, for the prevention of diphtheria, hepatitis B and others, which is given at six weeks, followed by a second dose of pentavalent vaccine at 10 weeks, and the last (third) dose at 14 weeks, together with vaccination against polio

(CSA & ICF 2016b:27). The last dose of the measles vaccine is usually given at or soon after nine months of age. However, many children are still unimmunised on the African continent, and while the global under-five mortality rate has shown good progress, declining by 53% (43 deaths per 1,000 live births in 2015, from 91 deaths per 1,000 births in 1990), an increase in under-five mortality deaths has been reported in many countries in Africa (WHO 2015d:87).

The United Nations Inter-Agency Group, which compiles statistics on a different basis to the World Bank and UN, documents that one child in 13 dies before reaching the age of five in sub-Saharan Africa, compared to one child in 189 in high-income countries. Also, according to United Nations Children's Fund (UNICEF), one child in 36 children in sub-Saharan Africa dies in the first year of life, compared to one child in 333 in high-income countries (UNICEF 2017c:1).

The UN Sustainable Development Goal agenda further quantified that sub-Saharan Africa reported the highest child deaths among the world's children under-five years in 2015, and this rate continues to double the mortalities among the children in the world (UN 2017:20). The SDGs also revealed that in the same year, sub-Saharan Africa and countries in the Asian region reported the highest neonatal mortality rate of 29/1,000 live births, making the share of neonatal deaths in all under-five mortalities grow from 40% to 45% between 2000 and 2015.

Conflict and wars in fragile states impose different challenges on health systems and communities, and arguably, the high mortality rate of children under five years of age on the African continent might be related to these factors (WHO 2015d:87). Accordingly, strengthening local health systems could be a solution to reduce this rate. Conflicts might result in people finding it difficult to access public health services, while shortages of a budget for the procurement and distribution of health commodities might also challenge health service availability. Other factors include inadequate human resources for health, poor coordination, and disruption of health commodities and routine health programmes (WHO 2015d:87). In addition, UNICEF (2017a:4) documents that poor people face inequality in terms of access to health services. A child's chance of survival is therefore profoundly influenced by the wealth of its family, yet developing child survival strategies that extend to hard-to-reach communities could increase the chance of child survival.

A 2017 UNICEF study on child mortality (UNICEF 2017c:7) suggests there is a need to accelerate the implementation of child survival strategies in all countries to reduce and achieve the SDG targets for children. If this does not happen, 13 countries in sub-Saharan Africa will likely not achieve the under-five mortality reductions until 2050, and more than 75% of sub-Saharan African countries will fail to reach the stated target reduction in child deaths by 2030 (UNICEF 2017c:7).

Data from 2005 to 2015 (UN 2017:23) indicate that for more than 40% of health facilities in the world, there is less than one general practitioner per 1,000 people. Moreover, nearly 50% of health facilities across the world have fewer than three professional midwives and nurses for every 1,000 individuals. Accordingly, the SDG report realises that achieving the SDG3 for health requires greater investment in human resource development for health in order to have sustainable systems in place for the provision of health services

1.2.4.2 Communicable disease prevention and control

Prevention and control of HIV/AIDS programme: Despite investors and stakeholders working on prevention and control as a priority health programme, HIV/AIDS is still a severe public health issue. Between 2000 and 2015, the rate of new HIV infections reduced by 62% in sub-Saharan African countries, yet Africa as a whole continues to be the continent with the highest incidence of new cases of infections, with 1.5 per 1,000 uninfected individuals, compared to a global new infection rate of 0.3 per 1,000 uninfected persons (UN 2017:21).

According to United Nations Programme on HIV/AIDS (UNAIDS) (2017:13), HIV/AIDS is still a globally prioritised public health threat, with 36.7 million estimated individuals living with HIV, 1.8 million newly affected people, and 1.6 million deaths in 2016. Moreover, the WHO estimates that about 5,000 individuals are infected with HIV every day, and sub-Saharan Africa accounts for 64% of infection, with young women from 15 to 24 years old accounting for 43% of all cases (UNAIDS 2017:13).

The disease imposes various burdens on individuals, families, communities and countries because of the need to allocate resources for its prevention, exacerbating the socio-economic burden on the Africa continent. The disease affects large areas of Ethiopia's development because there is a need to target limited resources to behavioural risk factor

modifications; scale-up reproductive health services for adolescents and youths; create demand for the uptake of HIV/AIDS services and reducing stigma; build capacity among health workers; ensure supply-side fulfilment; expand and scale-up antiretroviral therapy (ART) sites in the country to support HIV/AIDS patients; and strengthen the linkage between HIV/AIDS programmes with other health programmes. This highlights the fact that managing the HIV/AIDS programme alone could never be a life-saving strategy; for example, HIV patients can die of TB or other diseases. Perhaps the better approach would be to monitor prevention and control measures so that HIV/AIDS patients remain free from opportunistic infections. Accordingly, Adefemi, Awolaran, Yates and Bokare (2017:165) urge that the HIV programme should not be a stand-alone programme, but instead should be linked with other health programmes so that it can strengthen the health care system and better utilise limited resources. The WHO (2015b:2) similarly recommends that functioning health facilities should offer voluntary counselling and testing (VCT) as an entry point for the prevention and control of HIV/AIDS. This helps to inform the HIV-positive individual of their status and further protections or service packages available as part of the HIV/AIDS programme, including care and support. It also helps couples to get tested for the same protections and available services.

From the early days of the epidemic, HIV/AIDS exposed weakness and dysfunction in societies across the world (WHO 2017g:85). Two million people are infected every year, and a sizeable proportion of those infected individuals remain undiagnosed, with three out of five HIV-positive people not receiving treatment. As a result, HIV remains a public health threat, and if prevention and treatment are not intensified and fast-tracked, the HIV spread will increase and the death toll – from the current 1.5 million deaths per year – could start to rise anew (WHO 2017g:83).

The CSA and ICF (2016c:35) note that HIV prevalence has been characterised by heterogeneity – differing from state to state, within states, from district to district, and between genders and localities. HIV prevalence among the reproductive age group of 15 to 49 years old account for 0.9%, with the observed higher prevalence of 1.2% among females, and 0.6% among males. By residence, the prevalence of HIV in rural parts of Ethiopia is lower than in urban settings, at 0.4% and 2.9%, respectively. Regionally, HIV prevalence is highest in Gambella, at 4.8%, and lowest in the Somali Region, at 0.1%. Young women also have a higher prevalence than young men (0.3% versus 0.1%) among those aged 15-24 (CSA & ICF 2016c:35).

Ethiopia began its response to HIV/AIDS after cases of the disease were first identified in 1986. The HIV/AIDS department was set up under the FMOH, though with no formal policy in place. Eventually, in 1998, an HIV/AIDS-related policy was developed and endorsed to establish the Federal HIV/AIDS Prevention and Control Office (FHAPCO) to coordinate HIV/AIDS response interventions. The policy enables the sector to respond to epidemics using a multisectoral approach (FHAPCO 2014:2). Accordingly, the WHO (2016a:82) recommended the provision of ART services to all pregnant women testing positive for HIV for the benefit of families, as it can improve mothers' health, prevent transmission to children, and reduce transmission to sexual partners.

Yet despite the implementation of the WHO recommendations, over 90% of new HIV infections among children are caused by mother-to-child vertical transmission, either while pregnant, at birth, or during the lactating period (FMOH 2017a:1). The number of pregnant mothers screened for HIV through VCT service provisions increased to 53% among those who received maternal health services at health facilities, but low institutional delivery, poor antenatal care follow-up, interruption of HIV/AIDS-related supplies (including reagents, ART drugs, and drugs for opportunistic infections), as well as access to behavioural change programmes, remain challenges to prevention of mother-to-child transmission (PMTCT) and HIV/AIDS services in Ethiopia (FMOH 2015:27). Importantly, the availability of HIV/AIDS services in public health facilities is included in the scope of this study, based on its public health importance.

TB prevention and control: The WHO states that even though TB can be treated and cured, the disease is still among the top public health problems in the world. In 2014 alone, 9.6 million new cases were reported, along with 1.5 million TB-related deaths. In the same year, 0.4 million deaths were reported of HIV-positive TB patients. According to FMOH (2014a:57), TB remains a seasonal public health problem, and although it is a curable and preventable disease, it is yet to be eradicated. In fact, globally, the disease is positioned as the second leading cause of mortality after AIDS. Further, TB has been recognised as a fatal contagion that affects primarily the lungs (pulmonary TB), but the disease can also affect any part of the human body outside the lungs (FMOH 2014a:57).

TB is a communicable disease mainly caused by *Mycobacterium TB* (WHO 2017f:4). The risk of pulmonary TB is quite high, as it is spread when an infected individual coughs and

others breathe in the bacteria. Despite the high risk of the disease, only 5% to 15% of infected individuals have a chance of developing signs and symptoms of the disease. Moreover, HIV-positive TB patients have a greater chance of developing active TB than non-HIV-positive TB patients. Malnourished children, those with diabetes, smokers and individuals who consume alcohol also have higher risks of developing active TB (WHO 2017f:4).

Kuyinu, Mohammed, Adeyeye, Odugbeni, Goodman and Odusanya (2016:1) note that the prevention and control of TB is important because of the ease with which it spreads. These authors explain that at the onset of the disease, the symptoms are often non-specific, and the disease will continue affecting healthy people if there are no available services and resources, including health workers trained in TB diagnosis and treatment guidelines.

The WHO notes that the high morbidity and mortality associated with TB could be due to the unavailability of the required resources for diagnosis and treatment. It recommends facility-based routine testing by initiating providers' initiation for testing and counselling of HIV (PITC) to all functioning health facilities. However, the services should be offered by medical practitioners working at TB clinics and public institutions (WHO 2016a:26). Accordingly, an assessment of the availability of TB services and required resources for diagnosis and treatment in functional health facilities forms part of this study.

Authorities and functional facilities are urged to make TB services available free of charge (WHO 2017d:8). TB drugs are so expensive that many poor people find them difficult to afford, which poses a danger by increasing the risk to the public if TB is not properly managed, and it represents a double burden to immuno-compromised individuals. According to the WHO (2018b:2), HIV-positive clients with symptoms such as fever, coughing, sweating during the nights or weight loss, need an evaluation for active TB.

Ethiopia ranks third on the African continent for its high burden of TB and ranks seventh globally (WHO 2013f:20). However, Ethiopia also achieved a greater than 50% decline in mortality related to TB during the MDG era (Assefa, Damme, Williams & Hill 2017:5).

Malaria prevention and control: Malaria remains a global public health problem, with nearly half of the world's population living in malaria risk areas (WHO 2015d:116).

Approximately 89% of global malaria cases, and 91% of deaths caused by malaria, occur in sub-Saharan Africa (WHO 2015d:116). MEASURE Evaluation (2014:8) observed that after a decade of increased efforts in malaria prevention and control, the burden remains unacceptably high. Despite the existence of effective tools for control and proven prevention strategies, the failure of the malaria eradication programme in the 1950s reduced public interest in malaria control as a communal goal, and funding and resources languished globally. Consequently, malaria poses a tremendous public health threat to people living in malaria risk areas (MEASURE Evaluation 2013:1). Of the 216 million estimated malaria cases in 2016 worldwide, 90% of the total cases were in the African region, while the remaining cases were shared across South-East Asia and Eastern Mediterranean regions at 7% and 2%, respectively (WHO 2017m:34).

The FMOH of Ethiopia (WHO 2013f:7) notes that 75% of the geographic area in the country is malarious, and about 68% of Ethiopia's population are at risk of contracting malaria. On average, *Plasmodium falciparum* accounts for 77% of the total cases of malaria in Ethiopia, up to 22% are due to *Plasmodium vivax*, while *P. ovale* and *P. malariae* account for less than 15% of total malaria cases (FMOH 2014b:5). Notwithstanding the high risks across the country, there are seasonal variations in various parts of Ethiopia. In most parts, the malaria incidence is highest during the rainy season, between June to December, and from March to May in other parts of the country (FMOH 2014b:5).

The WHO (2013f:7) recommends malaria prevention and control interventions at various levels. Some interventions can be implemented at the community or facility level, including case management in terms of early diagnosis and prompt treatment, epidemic prevention and investigation. Environmental management includes the provision of long-lasting insecticide nets and indoor residual sprays.

1.2.5 Global and national humanitarian situations

UNHCR (2016a:15) states that, globally, none of the top refugee-hosting countries in 2015 were developed countries. The largest refugee population of nearly 2.5 million was hosted in Turkey, followed by 1.6 million and 1.1 million refugees hosted in Pakistan and Lebanon, respectively. Iran hosted nearly 1 million refugees, Ethiopia was fifth, hosting a population of over 736,000 refugees. The top 10 refugee-hosting countries contained an

estimated 9.3 million refugees, which represents more than half (58%) of the total refugee population in the developing world. Surprisingly, in 2015, half of the largest refugee-hosting countries were in sub-Saharan Africa (UNHCR 2016a:16).

Conflicts worsen the humanitarian situation in many parts of the world. United Nations Office for Coordination of Humanitarian Affairs (UNOCHA) documents that 38% of the 402 recorded conflicts in 2016 resulted in displacements, including wars in Syria and Yemen (UNOCHA 2017a:30). Forced displacement due to man-made conflicts increased to 65.6 million people in 2016, compared to around 39.5 million in 2006 (UNOCHA 2017a:31). Displaced people are in dire need of humanitarian assistance and health services, and a well-articulated protocol could go some way to ease their suffering.

UNOCHA (2016:20) notes that an estimated 4.42 million South Sudanese individuals needed humanitarian emergency health services. However, the economic difficulties that the country experienced, the budget shortfall for infrastructure, and the shortage of drugs and medical supplies, inadequate immunisation and disruption of other chronic health services, such as for HIV, remained challenges in the existing health facilities. Moreover, the Internal Displacement Monitoring Centre and Norwegian Refugee Council (IDMC and NRC) (2017a:13) identified that communities' movement can be a result of the complex situations that go beyond the control of family members or communities at large, and seeking support elsewhere might be their only option. Population movement can also occur because of war; a lack of access to humanitarian assistance, including basic social services; food insecurity; and natural disasters. According to Sahar, Faler, Hristov, Hughes, Lee, Westnedge, Ericson and Nichols (2015:2), in humanitarian emergencies, public health authorities in the affected communities, and health partners at all levels, bear the primary responsibility to mobilise the necessary resources to meet individuals' primary health care needs.

The burdens that the largest refugee movements place on the national resources of host populations fall mostly on developing countries. In response, on 19 September 2016, 193 UN member States committed to supporting host countries by sharing the responsibilities of global refugee operations internationally and strengthening existing structures in terms of capacities and resources (UNHCR 2017a:4).

According to UNHCR (2017c:18), with the unavailability of a humanitarian response protocol in the region, the Gambella Regional Health Bureau (RHB) has been providing vaccination and clinical consultation services for refugees. In addition, the Agency for Refugee and Returnee Affairs (ARRA) and UNHCR also prioritise health services for refugees. These actors strive to incorporate targeted children from refugee camps into Ethiopia's national immunisation programme to reduce illnesses and deaths among these children. Moreover, Gambella RHB has been providing antigens to refugee health facilities through *woreda* (district) health offices (UNHCR 2017). With the establishment of immunisation and other public health services in the camps, and overall coordination and management by ARRA, Gambella RHB provides capacity building on immunisation and supplies to ensure that all targeted children receive vaccinations as per the immunisation schedule. The RHB, through health facilities in the emergency-affected areas, provides vaccinations to all targeted children, from 6 months to 15 years of age, at the South Sudanese entry points to Ethiopia. The services are also provided to host community children in these areas (UNHCR 2017c:18).

The WHO (2014b:4) acknowledges that the health care system in most parts of South Sudan provided little help to people in need of health services. Civil war not only displaced vast numbers of people into neighbouring countries, but also had a negative impact on the health of the affected families. It is also worth mentioning that South Sudan has some of the poorest health service indicators in the world. For example, it has an infant death rate of 102 per 1,000 live births; a maternal mortality rate of 2,054 per 100,000 live births; only 13% of children are fully immunised with routine immunisations; and less than 50% of children are vaccinated against measles, a coverage significantly below the WHO's recommended 95%. The low coverage of routine immunisation is a likely cause for the endemicity of measles in most parts of South Sudan (WHO 2014b:5).

Concerning the humanitarian services provided to newly arrived asylum seekers (UNICEF 2017b:3), a UNICEF situation report revealed that between January and November 2017, the number of children under 15 years of age who were vaccinated against polio increased to 110,683, followed by the vaccination of 52,200 children during supplementary immunisation activities in Gambella in October and November to complement the humanitarian emergency services. UNHCR (2017b:2) identified 889,671 people received medical consultations in health centres in all refugee camps, of which 8.9% were from the host communities. The report also stated that the health facility

utilisation rate of 1.2 consultations for each refugee a year meets the current standard. The mortality rate in children under five also remained at the expected rate of 0.2 deaths per 1,000/month in all refugee camps.

Furthermore, UNICEF (2017b:3) notes that the national health system has been supportive of other humanitarian responses. For example, between January and October 2017, Somalia RHB assigned mobile health and nutrition teams to provide nutrition and health emergency services to conflict- and drought-affected populations. As a result, 411,338 people received primary health care through outreach services – 35% and 39% of the total cases were women and children, respectively. Additionally, the Health Sector Transformation Plan of Ethiopia (FMOH 2015:43) acknowledges the need to strengthen emergency preparedness and responses by proposing interventions that can have positive long-term results, and establish strong monitoring, high-quality diagnosis and treatment services, medical supplies, and infrastructure that ensures referral linkages are in place.

1.2.6 Health system and humanitarian situation in Gambella Region

Gambella is one of the regions in Ethiopia classified as ‘developing’ in terms of low achievement in development indicators. The region did not achieve the MDGs with its under-five mortality rate (U5MR), which was 88/1,000 in 2016, and above the national level. In addition, Gambella is among the lowest-performing regions in the country in terms of infant and neonatal mortality rates – at 56/1,000 and 36/1,000, respectively (CSA & ICF 2016a:128). Though the country has shown improvements concerning the coverage of institutional delivery (79% among urban pregnant mothers), institutional delivery at 45% remains low in Gambella (CSA & ICF 2016a:137). Moreover, despite the implementation of a multi-prong approach to reduce morbidity and mortality among children, new-borns, and women during pregnancy and after delivery, Gambella Region has a low routine immunisation coverage of 62% for measles, and a mere 41.1% of children in the region are fully immunised (CSA & ICF 2016a:172).

UNHCR (2016a:18) acknowledges that refugee-hosting countries need assessments of their existing capacities in terms of socio-economic conditions, population dynamics, political situation and the status of their developmental indicators. However, the majority of these refugee-hosting countries were not meeting international targets for their own

populations, let alone being able to provide health in emergency responses to refugees (UNHCR 2016a:18).

It is also essential that refugees should not be separated from their host communities (UNHCR 2017c:16). They need to be included in the planning for emergency preparedness and response, and it is also critical to collaborate in strengthening health services and ensuring good coordination between state health authorities in terms of humanitarian responses.

UNHCR (2016a:34) notes that the arrival of new influxes of refugees into the weak health system in Gambella Region has posed many challenges to its local health services. Conversely, it could also be an opportunity to advocate for strengthening the health system so that it can respond to future humanitarian situations. Despite its weak capacity, the regional government's health system actively provides public health in emergency responses to all refugees entering the country via Gambella. The RHB also responds to displaced people as a result of floods. In fact, Gambella Region is a flood-front area where annual flood displacement has become endemic. Conflicts and tensions among ethnic groups in the region add to the number of displaced people who migrate to Gambella from time to time. For any emergency or emergency occurring within an emergency, the same state health bureau responds by providing primary health care services, malaria case management, including prevention through long-lasting insecticide nets, and addressing communicable diseases in general (UNHCR 2017c:18).

The humanitarian health responses to displacements in emergencies caused by floods, inter-ethnic conflict or war requires a strong health system with the capacity to timely respond to health emergencies. Also, in any humanitarian situation, the risk of communicable diseases among asylum seekers and host community members is high, since pathogens do not respect borders. The provision of basic curative and preventive services and non-selective measles vaccinations are therefore recommended to all individuals from 6 months to 15 years of age (WHO 2013e:39). The WHO (2013b:85) also advises that the provision of oral polio vaccine to children between 0-15 years of age can reduce the risk of the spread of polio beyond international borders. The oral polio vaccine should thus be part of humanitarian public health responses in emergencies in a conflict situation (WHO 2015c:17).

Considering the complexities experienced in emergencies, the existing sub-national health system needs a contextualised protocol and capacity to provide public health services to emergency-affected populations, and this should be done by considering and respecting the existing regular health services provided to catchment populations. This view is supported by Nandi, Etsano, Uba, Ohuabunwo, Melton, Nganda, Esapa, Bolu, Mahoney, Vertefeuille, Wiesen and Durry (2017:S369), who note that there is a need to develop and refine methods for reaching vulnerable and targeted children for screening and vaccinations against vaccine-preventable diseases.

During the acute influxes of South Sudanese refugees to Ethiopia in 2014, the ARRA and RHB were the first government organisations on the scene (UNHCR 2017c:15). They immediately established their presence on the ground to control and prevent communicable disease transmission to the host communities and newly arrived asylum seekers. Gambella RHB, with technical support from UNICEF, established health and nutrition services at the host community entry points, including vaccinating targeted children against measles and polio, providing vitamin A supplements, and rehabilitating public health facilities in the host communities (UNICEF 2015:44).

The same year, Gambella RHB, supported by UNICEF, conducted house-to-house polio and measles vaccination campaigns for newly arrived South Sudanese children under 15 years of age at refugee entry points in Pagak, Raad, Buribiey and Akobo, and also at Mater refugee reception centre (UNHCR 2017c:15). Two years later, Gambella RHB, with overall coordination by ARRA and UNHCR, vaccinated 55,000 targeted South Sudanese refugee children between 0-15 years of age against measles and polio (UNHCR 2017c:15). The above-mentioned stakeholders worked without any protocol, framework or guideline to inform their activities. It is for this reason that the researcher identified a need to assess the availability of existing public health services in humanitarian responses in Ethiopia to inform the development of a protocol.

1.3 PROBLEM STATEMENT

Gambella Region hosts 423,105 new and existing refugees who have fled civil war in Sudan (UNHCR 2018d:1). With ongoing conflicts in the neighbouring country of South Sudan, ethnic conflicts within the state, and annual displacements due to natural disasters such as floods, Gambella Region is subject to a continuous influx of refugees. Hosting

vast numbers of refugees has not only doubled the population, but also increased the demand for humanitarian emergency health responses.

Refugees compete for limited health resources with the host community. According to UNHCR (2016b:7), around 55,400 South Sudanese refugees have been living in Gambella Region for more than five years and are likely to continue to live in those camps for years to come. Moreover, political instability in neighbouring countries means that Ethiopia, especially the Gambella Region, continues to be refugees' choice of destination, putting pressure on an overwhelmed national health system in the host communities. Hence, UNHCR has called on refugee humanitarian response partners to extend the provision of basic social services to the host communities and build the local health systems' capacity so that they can respond to any future refugee needs. UNHCR further acknowledges that improving host communities' basic services could reduce the likelihood of conflict that might occur between the host community and asylum seekers (UNHCR 2016b:14).

In 2017, UNHCR (2017d:37) revised a response plan in which Gambella Region was identified as one of the least developed remote states in Ethiopia, with very limited public facilities and infrastructure. The revised plan suggests that the infrastructure and facilities for the provision of basic minimum services for refugees are inadequate and need to be improved with assistance from refugee response partners (UNHCR 2017d:37).

The overall humanitarian situation needs strong public health systems in place to ensure the timely and appropriate humanitarian response to prevent negative health impacts on people in need (UNHCR 2017c:20). The current Ethiopian public health emergency management guideline, which was developed in 2012, does not address what the country's response should be in humanitarian situations. The guideline is further silent on emergency health responses; that is, the provision of health services either to internally displaced people or refugees.

The central research problem that guided this study was: Are public health services available during humanitarian responses in Gambella Region, Ethiopia, and what guides the provision of health services during humanitarian crises?

1.4 PURPOSE AND OBJECTIVES OF THE STUDY

1.4.1 Purpose of the research

The purpose of the research was to assess the availability of public health services in response to humanitarian crises in Gambella, Ethiopia. This informed the development of a public health service protocol for humanitarian emergency responses in Ethiopia.

1.4.2 Objectives

For the realisation of the study purpose, the following objectives were addressed:

- Explore and describe the availability of public health services and resources required for humanitarian emergency responses.
- Explore and identify current humanitarian emergency health needs and responses.
- Study and critically analyse different humanitarian responses in respect of health care services and the related protocols.
- Develop a public health service protocol for humanitarian emergency responses in Ethiopia – such a protocol must be context- and needs-based.
- Clarify the policy and programme implications of such a protocol.

1.4.3 Questions

The following research questions were raised:

- What are the existing needs for public health services during humanitarian emergencies?
- What have been the responses in relation to the need for public health services during humanitarian emergencies?
- Were resources and services available when required at public health facilities during humanitarian emergencies?

1.5 SIGNIFICANCE OF THE RESEARCH

This research will contribute to integrated humanitarian public health responses in emergencies in Ethiopia's national health system. It will also contribute to advocacy and capacity building in the existing public health system in Gambella Region, to ensure that refugees gain access to public health services in host communities within existing government structures. Despite the presence of different donors – international and national agencies working on humanitarian operations – the provision of public health services is not adequate. Emergency-affected districts offer public health services with inadequate capacities and insufficient resources. This might be because health support in emergencies is not linked to the local health system. Weak coordination among the health stakeholders in mobilising resources, and the unavailability of a needs-based protocol, might be additional reasons for the lack of health resources and services in emergency responses.

It was anticipated that this study would provide evidence to inform the development of a needs-based protocol that will serve as a working document for mobilising required resources and preparing health facilities to offer services to people in need. It will also strengthen the link between humanitarian and development programming through systems thinking; that is, supporting the system by strengthening activities with resources gained from humanitarian responses. This will also reduce refugees' negative feelings regarding their relative lack of access to public health facilities by improving existing sub-national health systems so that they respond to everyone who seeks medical services. Improving the public health system in Gambella will establish ownership and build local government's capacity; without which sustainable solutions would be impossible. Through comprehensive interventions within the area of health, and in close collaboration with all stakeholders, the resilience of the health system can be enhanced for both refugees and vulnerable host communities by restoring and expanding basic health services.

1.6 KEY TERM DEFINITIONS

1.6.1 Key concept definitions

Assessment: The WHO recommends the brief assessment as a mechanism to understand the services offered and the availability of required resources. These include trained health workers; key drugs and equipment; diagnostic facilities for the provision of key services to address the likes of HIV/AIDS, TB, and malaria; services for children and adolescents; and reproductive health services (WHO 2010:4). The WHO (2012b:7) also recognises assessment as a cornerstone of public health strategy development, to identify the gaps between the need for services and the services available. In agreement, Savoia, Lin, Bernard, Klein, James and Guicciardi (2017:e5) state that assessments of public health emergency responses can measure population needs in preparation for and in response to an emergency.

Availability: The WHO (2016e:23) defines 'availability' in terms of sufficient quantities of public health facilities and enough capacity to offer health programmes. Functional health facilities should be assessed on the availability of core functional capacities and specialised services (WHO 2010:5). Functional capacities include infrastructure and basic amenities, trained human workforces, guidelines, essential drugs, infection prevention and control, diagnostic tests and other medical equipment, as well as the availability of services relating to family planning, antenatal care, neonatal and child health, immunisation, TB, malaria and HIV/AIDS. Availability refers to the type of services offered, whether human or other resources, to meet the demand for services (Scheffler, Visagie & Schneider 2015:4).

Emergency response refers to public health interventions that are proposed to address prioritised public health concerns in emergency programmes based on existing public health problems (WHO 2013a:14).

Public health: Public health aims to prevent and control diseases in a community. Services include the implementation of health promotion activities, primarily early diagnosis and prompt treatment based on scientific investigations, clinicians' judgements, and rehabilitation services to prolong life. The fundamental objective is to save lives. Stakeholders include families, communities, institutions, and donors (Winslow 1920:30).

Public health is multisectoral, requiring strong coordination and technical expertise to identify clear responsibilities and accountabilities for each partner, including beneficiaries, to play their roles in health promotion and disease prevention. Public health can also be considered as part of the development agenda, as actors can contribute socially, economically, and to the policies of a country, and reduce inequity across populations (Oregon Health Authority [OHA] 2014:18).

White (2015:105) defines 'public health' as a collective effort in responding to the threat to citizens' health. Conversely, Leinhos, Johnson and Qari (2014:9) conceptualise 'public health' as a complicated system containing networks of people and institutions with significant roles in bringing about positive health outcomes. However, although public health is everybody's business, saving the lives of human beings requires human resources with specialised knowledge (House of Commons Health Committee 2011:142). Accordingly, Jarris and Sellers (2013:95) state that improving community health outcomes depends on health systems that have functional components that require collaboration and integration among different stakeholders. Public health is described differently by different member states depending on the available capacity and required services, and variations in public health services due to differences in political priorities and organisational models of public health services; including accountabilities among various levels of administrations (WHO 2012a:3-4).

Even though there is no single set of standards for public health services in every community or across jurisdictions, the Institute of Medicine (IOM) (2012b:2-11, 14) developed a minimum package of public health services which includes foundational capabilities, the input or resources required for service provision, and an array of basic services that everyone, no matter where they live, should reasonably expect to receive. These services include maternal-related health services, new-born care, child and adolescent health services, and services targeted to address communicable diseases. The OHA (2014:20) also defines 'public health services' as programmes or activities designed to address public health problems. To function well, these require resources and capabilities to ensure emergency preparedness and responses.

1.6.2 Operational definitions

General service readiness: Denotes the availability of required resources for the provision of quality health services. This includes the availability of essential medicines, equipment and infrastructure in public health facilities (WHO 2013d:12).

Health system capacity: Describes the ability of the system to respond to various threats and identify gaps (WHO 2012b:3).

Service availability: The availability of various health programmes delivered at functional health facilities (WHO 2013d:12).

Service-specific readiness: The capabilities of public health systems to provide specific health services with available trained health workers regarding diagnosis and case management, based on updated guidelines and with medical and other supplies available for service provision (WHO 2013d:12). Anselmi, Lagarde and Hanson (2015:11) define 'readiness' in this context as the availability of specific services and required resources for humanitarian emergency responses, including human resources, funds, IEC/BCC material on critical public health emergency messages, infrastructure, medical equipment, health facilities, and referral linkages. Oyekale (2017:1) states that required resources include skilled health workers for the provision of diagnostic and treatment services, and well-organised infrastructure that can determine the availability of high-quality health services.

Health systems: The WHO (2015h:25) defines a 'health system' as a set of hardware structures and complex software components that together inform the system's functioning. The six health system functions are reviewed here in relation to public health service provision to emergency-affected people. The six building blocks are more convergent than divergent. For instance, the delivery of an integrated package of public health services during humanitarian responses requires the availability of adequately skilled human resources. Similarly, the provision of public health services in functional facilities depends on uninterrupted supplies of essential medicines, medical equipment and other commodities, and the presence of infrastructures. In fact, the availability of health data could inform the decision-making process in mobilising resources, planning and implementing proposed public health interventions.

Similarly, for health systems to offer public health services, substantial investment is required in allocating budgets for system operations and in making the required resources available. Moreover, strong leadership and good governance are required for multisectoral coordination, stakeholder engagement, commitment and accountability. The WHO (2007:3) states that people have understood the concept of health systems blocks – services delivery, human resources, finance, information, supplies, and governance and leadership – but struggle to know how to strengthen the health system itself. As a result, the WHO (2009:32) attempted to modify these building blocks using the systems-thinking approach. To its credit, the approach put people at the centre and interconnects the building blocks. However, it does not outline how the unpacked building blocks could reach the expected results as a goal. The approach also remained unused by the intended users.

UNICEF (2016:5) acknowledges the presence of the WHO's health system building blocks and, by assuming the existence of the system, recognises the need to determine who is missing from which services. It sees the provision of health services like the provision of water; the water cannot reach people if the system is blocked. UNICEF's health systems strengthening approach starts by identifying marginalised populations, the major causes of morbidity and mortality, prioritising interventions to address those causes, and then identifying bottlenecks (supply and demand-side and quality) using the modified Tanahashi (1978:300) model for enabling environments. Health systems strengthening is further defined as established actions to sustain improvement in the quality of health provision, increased utilisation and curative care, as well as the resilience of systems (UNICEF 2016:5). Chee, Pierlemeier, Lion and Connor (2013:87) recognise health systems strengthening as not simply filling a gap but making permanent strong health systems that can function to produce long-term results.

Humanitarian response: The World Health Communication Associates (WHCA) (2017:152) recommends that building the capacity of local health systems could contribute to future, immediate and long-term solutions during humanitarian responses. Humanitarian responses must also be context-specific. Disease outbreaks are the greatest immediate threat to life during humanitarian emergencies, making immunisation and other preventable measures a critical priority for all age groups. For example, immunising all targeted children can protect them from the measles virus. However, a

measles outbreak could still happen, either because of vaccine failure or failure to vaccinate all targeted children against measles.

1.7 THEORETICAL FOUNDATIONS OF THE STUDY

The conceptual framework is defined as an interrelated concept that communicates as a networking system, and dependently provides complete representation to understand the whole phenomenon (Jabareen 2009:51). The conceptual framework used in this research is discussed in detail in the next chapter.

1.8 RESEARCH DESIGN AND METHODS

The mixed-methods approach is a technique designed to collect quantitative and qualitative data in a research study. The integration of quantitative and qualitative data can be done by using the theoretical framework of the study. Importantly, combining the two forms of data can provide more detailed information to answer the research questions than using a single method (Creswell 2014:4). Creswell also notes that mixed methods follow pragmatic philosophical world views, where mixed-methods researchers have the right to pick the data collection and analysis techniques that fit the purpose of the research and how best to answers the proposed research questions (Creswell 2014:11). In this study, the use of a mixed-methods approach helped the researcher to gain an understanding of the availability of programme interventions and existing gaps by collecting quantitative results and qualitative findings, respectively. During data collection, the quantitative data were collected in parallel with qualitative data. The two forms of data were separately analysed and mixed during the interpretation phase of the study.

The quantitative results determined the availability of services and required resources for the public health system to provide humanitarian health responses in emergencies. The qualitative findings explored and described the community health needs and health system availability during emergency health responses. Quantitative data and qualitative information were collected to address the issue of the availability of public health services in humanitarian responses in Ethiopia.

1.9 LIMITATIONS AND SCOPE OF THE STUDY

The study has several limitations. Generalisations are not a concern of the study, but any available generalisation will apply to public health facilities with similar settings and with related research problems. In addition, the data collection method for document review may have failed to capture all the necessary information because of incomplete and inconsistent recording and reporting. Furthermore, since the assessment of the intervention used a limited number of dimensions, this might not have revealed the full picture of the public health services available in response to humanitarian needs.

1.10 ORGANISATION OF THE STUDY

This research is presented in five chapters.

Chapter 1. Study orientation: The introduction and background were discussed, and included an overview of the public health services of Ethiopia and Gambella Region. The health systems and humanitarian situation in Gambella were also addressed. A statement of the research problem was provided, and the researcher described the conceptual framework of this study. The chapter concluded by defining the key concepts underpinning the study.

Chapter 2. Literature review: This chapter discusses the literature review of related topics. It explores the availability of health services in emergency response-related literature in relation to Gambella, Ethiopia.

Chapter 3. Research design and methodology: The researcher discusses the research methodology, approach, design, setting and population of the study. The researcher also explains the data reliability and validity, sample and selection methods, data collection and analysis techniques. The chapter ultimately addresses the ethical considerations adhered to in the study.

Chapter 4. Analysis, presentation and discussion of the research findings: This chapter covers the availability of public health services for humanitarian responses. It also presents information on humanitarian health needs in emergencies at the time of data

collection. The chapter mixes the quantitative and qualitative results that informed the development of the needs-based protocol.

Chapter 5. Proposing a public health service protocol for humanitarian emergency responses in Gambella, Ethiopia: Conclusions and recommendations are made to the concerned bodies for further actions.

1.11 CONCLUSION

In this chapter, the researcher presented an overview of the study and started the chapter with an introduction. Thereafter, the background to the research problem, the research problem, aim and the significance of the study, and the definitions of terms were discussed. The theoretical foundations of the study were introduced, along with the research design and method, and the scope and limitations of the study. Finally, the thesis structure was outlined.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION AND BACKGROUND

Literature reviews refer to assessments of documents published about a particular subject. Boell and Cecez-Kecmanovic (2014:161) note that a literature review is a critical component of understanding and synthesising a research topic, while Schryen and colleagues note that a literature review provides better understanding and knowledge to interpret specific subjects of interest (Schryen, Wagner & Berlian 2015:3). Similarly, Rowe (2014:243) claims that a literature review familiarises the researcher with knowledge about previous studies, helps the researcher to identify gaps in the literature, and points towards further areas for research. Reviewing literature is an essential phase, helping the researcher to explore and recognise existing knowledge gaps in the subject matter, which they can then address (Zurynski 2014:1). A systematic review of literature helps the researcher to develop the competency to critically review documents and acquire a deep understanding of the research topic (Boell & Cecez-Kecmanovic 2014:161).

Published literature on humanitarian situations and the assessment of the availability of public health services in humanitarian responses are covered in this study. Journals, reports, books and articles, and relevant UN agencies' and international organisations' websites, were sources of information that were reviewed.

This chapter discusses the historical background of humanitarian situations and the conceptual frameworks used to deal with them. The capacity of health facilities to offer public health services in humanitarian responses is also considered.

Geopolitically, conflicts happen because of disagreements (often over land or resources), leading to the displacement of innocent people who, in turn, face poverty, hunger and other hardships. The UN (2017:12) identifies conflict as an insurmountable barrier to poverty eradication and an impediment to countries achieving Sustainable Development Goal (SDG) targets. Development Initiatives (DI) (2017:21) agrees with the UN's assertion that conflicts, fragility and environmental vulnerability jeopardise the anticipated end of poverty and may cause many people to be left behind, and thus thwart the

objectives of the SDGs. Furthermore, the UN's Every Woman Every Child initiative notes that although there is no specific goal to address conflict-affected populations, it recognises that SDGs cannot be realised without applying systems thinking to different contexts (UN 2015b:29).

Emergency-affected communities and areas with weak basic social services require a mitigation strategy that addresses health systems strengthening. It has also been noted that around 60%, 53% and 45% of deaths related to women, children younger than five, and neonates, respectively, happen in areas during times of emergencies. As a result, the international community has suggested to better support affected countries through a humanitarian response, as, on average, a refugee could spend 25 years in their host country before they return to non-refugee status (UN 2015b:29).

According to the UN Refugee Agency, around 68.5 million people were forcibly displaced from their homes worldwide in 2017 (UNHCR 2018a:2). Of those, 19.9 million were refugees under the protection of the UNHCR, and a large proportion of these (5.4 million) were refugees from Palestine, who are managed under the UN Relief and Works Agency (UNRWA) (UNHCR 2018a:2).

There are also around 16.8 million internally displaced people in Africa (displaced within their own countries), making the Africa region account for 40% of the total internally displaced persons across the globe. To illustrate, UNHCR (2016a:54) describes refugees according to the 1951 resolution passed by the world body, the developed protocol in 1967, and the Organization of Africa Unity Convention on Africa's Refugees in 1969. In addition, it also defines internally displaced persons as individuals or groups of people/households who, because of a situation beyond their control, have to flee their homes because they fear for their lives (UNHCR 2018a:61). According to Silbermann, Daher, Kebuti, Nimri, Al-Jadiry and Baider (2016:436), conflicts force more people to leave their homes than other causes of emergencies. Consequently, the IDMC and the NRC claim that the international community's failure to resolve conflicts in South Sudan, Sudan, Democratic Republic of Congo, Nigeria, Syria and Yemen has resulted in millions of people being displaced (IDMC & NRC 2017a:26). Moreover, beyond the right to health services for forcibly displaced people, these individuals have fled from their homes to escape violence and save their lives. Upon arriving in their host country, the UN (2017:12) notes that the refugees are then confronted with the unavailability of public health

services, safe clean water, and poor shelter; this can make emergencies complex, with repercussions relating to mental health and health in general, as well as morbidities and mortalities.

The causes of displacements in the horn of Africa are complex. Conflicts and flood emergencies are among the most common causes in many countries in the region. According to UNOCHA (2017a:36), conflicts alone displaced about 6.7 million people in the region, followed by more than half a million being displaced by floods. The availability of public health services is critical to saving the lives of vulnerable populations, mostly women and children affected by the geopolitical situations and multi-causes of displacements in the horn of Africa (UNOCHA 2017a:36).

The Centre for Disease Control and Prevention (CDC) (2016:14) notes that displacements due to conflict or natural disasters do not stop women from becoming pregnant or giving birth, therefore, humanitarian responses should consider pregnant mothers and babies during emergencies. It is worth noting that around 20% of women of reproductive age are estimated to get pregnant during emergencies, and around 60% of maternal deaths take place in humanitarian emergencies globally. It has also been determined that women and children account for 75% of the total humanitarian crisis-affected population. Every day, the world loses an estimated 500 women of reproductive age due to poor maternal health service provision during crises (UNOCHA 2017a:38), and 60% of female deaths and 45% of new-born deaths happen in emergency-affected contexts. Reports also show that 67.2% (12.6 million) of the world's displacements happen in Africa, and about 32% (6.1 million) of the world's refugee population of 18.7 million is hosted in Africa (IDMC & NRC 2017b:18), which as a continent account for only 16% of the world's population. Furthermore, the UNHCR (2016a:15) claims that half of the host countries are located in the sub-Saharan Africa region, with the East Africa region accounting for the highest number (1.5 million) of Africa's new conflict displacements in 2016 (IDMC & NRC 2017b:20).

According to Corbet, Ambrosetti, Bayle and Labaze (2017:10), in 2016 the Ethiopian government registered a massive number of refugees, mainly from Somalia (hosted in Ethiopia's Somali regional state), Eritrea (where refugees were hosted in Tigray and Afar regional states) and Addis Ababa. A study conducted on South Sudanese influxes showed that more than one in four South Sudanese people was internally displaced or

seeking asylum outside South Sudan (IDMC & NRC 2017a:57). In 2016, more than 1.5 million South Sudanese refugees were hosted in four East African countries bordered by the country, namely Ethiopia, Kenya, Sudan and Uganda (IDMC & NRC 2017a:57). In addition, the majority of South Sudanese asylum seekers were held in refugee camps situated in Gambella and Benishangul-Gumuz regional states, and these regions faced the double burden of weak health systems and the effects of the ongoing civil war in nearby South Sudan. Nevertheless, the European Commission (ECHO) identified that with the recent arrival of asylum seekers from South Sudan, Eritrea and Somalia, in addition to the existing refugees from Sudan, health services were overstretched, and as a result tensions between refugees and the host communities developed in certain regions (ECHO 2017:2).

Although addressing emergencies remains a humanitarian priority, longer-term support to boost resilience and food security of the poorest and most vulnerable communities is equally important (ECHO 2017:2). In agreement with the European Union, Puchner, Karamagioli, Pikouli, Tsiamis, Kalogeropoulos, Kakalow, Pavlidou and Pikoulis (2018:5) suggest to not only deal with the short-term needs of the newly arrived refugees and migrants, but also to integrate long-term solutions by strengthening existing public health services at all levels of care. Similarly, Brun (2016:406) recommends complementing humanitarian aid with more sustainable approaches to help cope with medium- and long-term refugees and host communities.

According to WHCA (2017:152), rapid and effective humanitarian responses in emergencies are essential to save lives and relieve suffering. The WHCA (2017) also emphasise the comparative advantages of initiating long-term planning as a more systematic development approach for ensuring a sustainable response during the early phase of a humanitarian emergency. However, priority should be given to existing systems so that the local health system's capacity is enhanced to address public health issues, such as communicable diseases.

According to Jones, Haeghebaert, Merlin, Antona, Simon, Elmouden, Battist, Jaseens, Wyndels and Chaud (2016:3), refugee populations might be at risk of certain communicable diseases because of disorganised health systems, low vaccine coverage in their country of origin, or overcrowding in the camp settings. As a result, the WHO (2014a:21) recommends that all children between six months and 15 years should be

vaccinated against measles and receive oral poliomyelitis, and children between six and 59 months should be targeted with vitamin A supplements.

Nnandi et al (2017:S369) similarly suggest there is a need to prevent disease among susceptible groups by rolling out immunisation services to all targeted children during a humanitarian crisis. This approach can reduce the significant risk of a communicable disease outbreak during already challenging circumstances. The CDC (2012:5) is in agreement, noting that as diseases know no borders, they are a public health problem in humanitarian situations. Therefore, one-time responses are often not adequate, and investments must be made to ensure the continued availability of public health services for better humanitarian responses in emergencies.

Of equal importance, Kotsiou, Kotsios, Srivastava, Kotsios, Gourgoulialis and Exadaktylos (2018:8) identify that refugees with health needs impose challenges on unprepared health systems by overstressing health service provision. Despite the health needs identified by Kotsiou et al (2018), in 2015, the WHO (2015d:45) revealed that the inaccessibility of health facilities, as well as the poor quality and low capacity of health systems at all levels, were major bottlenecks to service delivery. The WHO also noted that many countries lacked critical resources and resilience in their health systems to address humanitarian responses. The delivery of humanitarian responses to emergency-affected communities was suggested to demand capacity at the local level (Guraro 2016:23). Health systems require resilient health services; as noted by Béné, Frankenberger and Nelson (2015:9), resilience is how people or systems (or parts of a system) respond to shocks and stressors. In relation to health, resilience was identified as organisations' capacity and ability to respond to any shock or stressor, including capacity building for emergency responses (European Centre for Disease Prevention and Control [ECDC] 2017:2).

The current Ethiopian public health emergency management guideline, which was developed in 2012, focuses on WHO-reportable diseases, and does not address humanitarian situations or health requirements in emergency responses. There is thus a need to develop a contextualised protocol that conceptualises current needs, as well as a resilient health system that can respond to future humanitarian emergency situations. By not considering future and complex humanitarian emergencies, Ethiopia can cope only

with specific interventions to address chronic emergencies in the country, such as outbreak investigations, nutrition screenings, and flood and drought responses.

According to the FMOH (2015:44), in 2009, the Public Health Emergency Management Department was established under the Ethiopian Public Health Institute. The department was originally tasked with establishing various levels of government structures, but was ultimately only able to report on 20 diseases under surveillance, while humanitarian responses to refugees and internally displaced persons should also have been prioritised. Moreover, the influx of South Sudanese refugees fleeing renewed conflict in Maiwut, Mathiang and Pagak areas along the Ethiopian border have led to the establishment of new reception centres and the expansion of existing camps in Gambella and Benishangul-Gumuz regions (UNOCHA 2017b:7). The newly arrived refugees continue to compete with the vulnerable host communities over limited health resources, and a strong public health system is needed to ensure timely and appropriate humanitarian responses to prevent negative impacts during crises (UNHCR 2016b:9).

Many South Sudanese refugees are held in comparatively disadvantaged areas of Ethiopia with poor developmental indicators and weak health system capacities. The local host communities are therefore in need of support to improve socio-economic conditions (UNHCR 2017c:11). With such a complex situation, a needs-based public health service protocol for humanitarian emergency responses is required. Addressing the needs of both the refugee and host communities will mean attending to fundamental issues, including developmental and economic improvements, as well as enhancing peaceful coexistence between the host and refugee communities by ensuring equitable access to a host of health and social services.

2.2 CONCEPTUAL FRAMEWORK

The conceptual framework for the availability of public health services in humanitarian responses follows.

According to the WHO (2009:19), regardless of international consent on the need to strengthen health systems in low- and middle-income countries, no framework has been developed on how to do so due to a lack of capacity and understanding of health system components. The constraints on how different countries measure health systems

strengthening and the lack of understanding of what should be strengthened contribute to weak health systems in most developing countries. With such a poor understanding of health system concepts, interventions have often failed to achieve their intended goals and led to unpredictable outcomes.

Accordingly, the WHO (2009) states that it is critical to fully understand a system before deciding how to strengthen it. A full understanding of the contribution of each planned activity to the result is required, recognising that even the simplest interventions can contribute to the overall results. Jarvis (2017:10) adds that a poor understanding of how different sub-components of health systems affect health outcomes could be caused by difficulties in acknowledging the relationships between different conceptual frameworks.

The WHO clearly describes the components for functioning health systems, which include service delivery, health workforces, medical products, finance, information, and stewardship. The WHO's conceptual framework is important for any public health service provision. Its building blocks on the supply side can be quantitatively considered as inputs for health system functions; qualitatively, they can be considered as the means (demand creation) of achieving the overall long-term result of health outcomes and impacts (WHO 2007:3). However, the WHO's (2007) building blocks vertically ended up with unpacked linkages on how each subcomponent supports one another. The linkage and contribution of each block to the overall outcome and impact was unclear, despite the suggested systems thinking and its essential components.

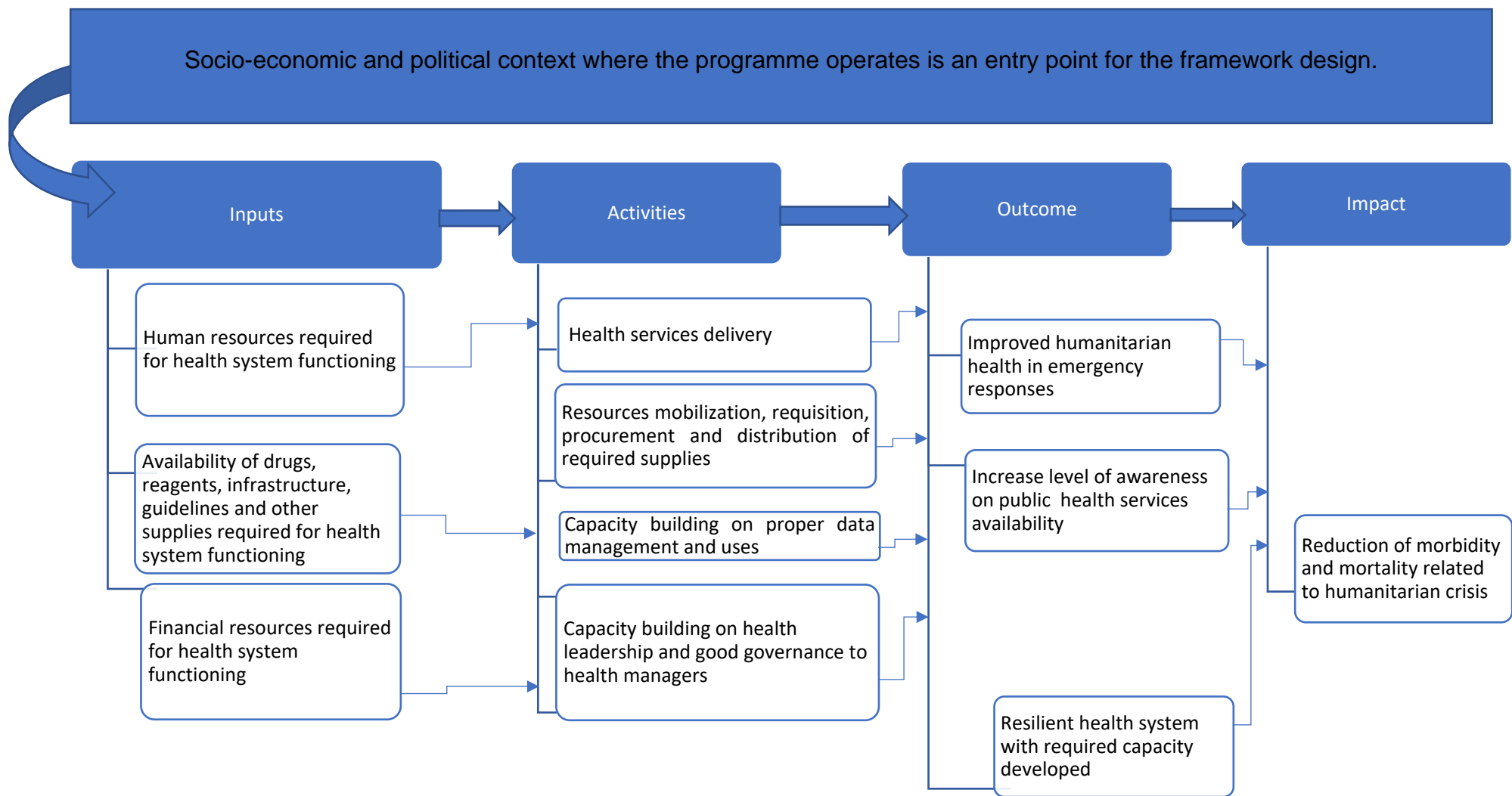


Figure 2.1 Conceptual framework for public health service availability for humanitarian responses

(Adapted from WHO 2007:3, Donabedian cited in El Haji, Lamrini & Rais 2013:20; IOM 2012b:C-2)

The WHO (2016e:229) stated that the achievement of results could be obtained based on the consideration of different dimensions. Besides, context was identified as a composition of social, economic and political conditions that may alter the relationship between the programme and the expected result. However, although the WHO's health systems framework lacks clear expression on how its building blocks contribute to the results – including the relationship between resources, interventions and results – its framework has been used by many countries and was deemed appropriate for this study.

The literature review found that despite the presence of health systems frameworks, gaps in the contributions of health system components to achieve the intended results – after the provision of services and utilisation of required resources – were not well-articulated. Conceptual frameworks have thus been proposed by different authors. For instance, Donabedian (cited in El Haj et al 2013:20) developed a well-accepted health systems framework in the 1960s that draws on structure (human resources, finance and equipment, facilities and formation), process and outcome models as its components. However, the framework is limited to the quality of care, with little description on the process and outcome components and, unlike the WHO, the framework was developed with no recognition of the influence of each component on each other in achieving results. With this deficiency, the framework was not put into practice.

The IOM (2012b:2-12) similarly found no standardised public health service interventions that were uniformly available in every community. Importantly, the provision of public health services depends on context, jurisdiction and the existing public health problems. The IOM developed fundamental elements that were important beyond health care delivery, but these were not accepted, hence the proposed components operate differently in the absence of indicated linkages among the identified elements.

According to the OHA (2014:18), a conceptual framework for a government public health system is a narrative and graphic description of the core components that aim to monitor and improve the health of everyone. In agreement, Imenda (2014:189) notes that the term 'conceptual framework' is derived from the basic word 'concept' and is defined as an end result that brings together several related concepts, with explanations of the system components. In addition, the WHO (2016c:16) highlight the prime importance of context

for a country to strengthen its health system. Accordingly, conceptualising programme interventions in specific contexts can help in achieving the expected long-term results.

Furthermore, Rajan, Adam, ElHusseiny, Porignon, Ghaffar and Schmets (2015:6) note that a framework is a tool that bridges the gap between programme objectives and outcome results. Thus, the researcher found different components in various reviewed conceptual frameworks based on their contexts. The conceptual framework to determine the availability of public health services in humanitarian responses adapted for this study was taken from the WHO conceptual framework, with some co-opted dimensions from the literature, as described below.

2.2.1 Socio-economic and political contexts of the study area

The socio-economic and political contexts in which programmes are implemented are critical elements of the framework. As a result, the neighbouring countries of Ethiopia with poor governance and failed states suffering from acute conflicts are inextricably linked to humanitarian emergencies (Christian Action Research and Education (CARE) 2012:4). Importantly, the WHO (2016e:11) recommends the consideration of social, political and economic conditions of the given population to create an enabling environment where interventions will be implemented. The WHO (2018a:31) further suggests that public health problems should be addressed holistically, as ill-health cannot be separated from other societal issues such as climate change, inadequate housing, gender issues, economic hardships and even peace. With regard to peace, its absence has driven millions of people to abandon their homes in the past several years, and it therefore falls within the SDGs' expected targets, which can be achieved by linking emergency health responses and the development of health programmes with peace-building.

Similarly, Pyone, Dickinson, Kerr, Boschi-Pinto, Mathai and Van den Broek (2015:648) highlight the need to contextualise humanitarian responses based on context, which includes the culture, climate, the existing health infrastructure, the presence and commitment of stakeholders, and the identification of targeted groups with specific needs. These aspects all determine the types of humanitarian responses required based on needs. Chee et al (2013:87) similarly agree that health outcomes can be affected if the contribution of social, behavioural and political commitments are not recognised. They call on improving the WHO's six functions of a health system (service delivery, health

workforces, medical product, finance, information, and stewardship), and examining other enabling contextual factors for systems strengthening, recognising the complexity of the health system.

The Catholic Relief Services (CRS) (2013:7) claim that an understanding of the context of humanitarian response will help to prevent duplication of efforts among response partners. Moreover, Clarke, Rajan and Schmets (2016:482) recommend that countries analyse and assess the compatibility of their local framework with internationally adopted frameworks, with the aim of ensuring that the developed framework strengthens the existing health system. In this study, the influence of context in various conceptual frameworks was reviewed while developing a needs-based public health service protocol for humanitarian emergency responses in Gambella, Ethiopia.

2.2.2 Human resources in a conceptual framework

The researcher redesigned the conceptual framework for public health service availability by incorporating inputs, activities, outcomes and impacts as expected results. Though the availability of human resources itself cannot guarantee the availability of all the required resources, human resources are vital in systematically developing solutions to solve human health problems. According to Tripathy (2014:156), the workforce has prime responsibility for delivering health services.

Similarly, Giedion, Alfonso and Diaz (2013:6) identify the availability of sufficiently qualified personnel and adequate technology as critical components in addressing the health needs of clients. Importantly, having trained health workers in place might help the systems to request and procure supplies that can be used for health service provision, including drugs and reagents. Those procured medicines should also be prescribed by people who have technical expertise in public health programmes. Therefore, the presence of skilled professionals might strengthen other public health services by collecting and allocating the required funds for the procurement, planning, and distribution of supplies. The human workforce can ensure that the required budget is available for health workers' salaries, overtime payments, and other required resources, so that health facilities can function 24/7. The availability of a skilled human workforce could also generate timely and high-quality data for use during the decision-making and planning phases. The WHO (2011b:23) supports the view that health workforces are a fundamental

resource for health systems to function and claims that it is a basic requirement for health facilities to build health workers' capacity through training. The WHO (2011) also notes that a knowledgeable health worker can support decision-making with scientific evidence. Health leaders are also part of the human workforce for health, and a skilled manager can capacitate workers under their charge to offer health services beyond single interventions in the facility.

The shortage of health workers is not the only problem health systems face. How to utilise existing health workers and resources during humanitarian responses might be another challenge in the absence of a locally adapted protocol. Therefore, there is a need for a well-articulated humanitarian protocol in line with international standards, and with a greater focus on system strengthening activities that have long-term rather than short-term implications. Filling gaps to provide short-term support might also be essential. Linking the human workforce with long-term results is important, and training is not a goal in itself. It is therefore essential to consider capacity-building interventions that contribute to results. After all, a well-functioning health facility has the required human resources with the capacity to provide public health services holistically.

Bjegovic-Mikanovic and Otok (2017:5) note that a lack of infrastructure and low capacity has negative effects on people's health. They recommend that governments invest in the public health workforce so that it can generate high returns in saving human lives. The aim of the research in this area is not merely to study the presence of health workers, but to assess the different capacity-building training received by health workers to provide specific health services according to the available guidelines at the health facility.

2.2.3 Availability of drugs, reagents, infrastructure, guidelines and other supplies

According to Prinja, Bahuguna, Tripathy and Kumar (2015:11), strengthening public health facilities with essential drugs might be a long-term and sustainable method to ensure public health service provision. The WHO (2016e:23) concurs and recommends that every functioning health facility requires a water supply and storage facility. Facilities need electric power, drugs, infection prevention items and other health commodities. The provision of life-saving interventions to both individuals and communities depends on the availability of medical supplies, including diagnosis and treatment guidelines, plus cross-

cutting communication for the development of materials in public health and public health emergency contexts.

In addition, Olu (2017:4) suggests that the uninterrupted provision of public health services to the affected population during an emergency should be ensured by the availability of sufficient supplies, such as essential medicines, health facilities, and adequate numbers of well-trained health workers. However, without a protocol in place, different humanitarian partners could procure and keep supplies in their warehouses without considering who requires each of the procured supplies, where they are located, and how to reach the end-users. In addition, identifying beneficiaries could be problematic after all the resources have been used for procurement. Therefore, a procurement plan, a distribution plan, and a means of distribution to the periphery need to be defined during the planning phase. Supply needs across the different programmes must be integrated and should also consider end-users. If there is no well-developed supply chain management system, the supplies procured by different partners will neither help the system nor the emergency responses; rather, managing those supplies will be a problem in itself. Supplies could remain in the store, or stores may have no space to receive additional supplies. Poor supply system management in facilities could result not only in there being no or insufficient supplies of a particular commodity, but could also result in the unavailability of a public health service, causing suffering on the part of those who will be unable to access the service, and reducing utilisation of the service.

To make a public health system resilient, the protocol should clearly state the management of supply logistics, the allocation of funds for the procurement of supplies by the existing health system, and the capacity and responsibility of health facility managers. The availability of required supplies also has a connection with the availability of skilled personnel who are knowledgeable about quantifying needs based on the uptake of health programmes offered in the facilities. Knowledge of existing public health problems and health needs in emergencies could inform the allocation of resources required for procurement, distribution and monitoring of the supply, through to an end-user monitoring mechanism that ensures all supplies reach the intended beneficiaries. Good supply chain management requires proper documentation and reporting of the supplies used and needed in all public health programmes to reduce supply interruptions.

There is a need to acknowledge the fact that no health outcome can be achieved without supplies, and there are no programme functions without the supply function. Supplies are the core elements of a functioning public health system. As stated by Phalkey, Dash, Mukhopadhyay, Rung-Ranzinger and Marx (2012:8), medical products and supplies, including basic emergency drug kits containing all medications, should be maintained in stock for early and timely public health responses during humanitarian situations. The unavailability of health commodities, equipment and service providers could undermine facilities' capacity to provide services to people in need (Scheffler et al 2015:5).

Assessing the availability of medicines, other medical supplies and infrastructure in health facilities is therefore critical. Of equal importance is assessing the quality of the enabling environment of health facilities. The enabling environment comprises basic amenities, standard precautions for infection prevention, and diagnostic capacity.

2.2.4 Health service delivery in a conceptual framework

Lomazzi (2016:210) states that a functioning health system should not only make services available, but also identify gaps so that sufficient public health services can be provided to people in need. Interestingly, Cheechi, Warsame, Treacy-Wong, Polonsky, Van Ommeren and Prudhon (2017:7) state that the impact of public health services can be quantified by assessing the availability of services, whether services exist and their functionality, and whether services are operated with recommended guidelines, trained health workers, drugs and equipment for humanitarian responses. The WHO (2017:8) also explains that strengthening a health system requires coordinated approaches. Improving health governance as a result of strong coordination might not only contribute to the improvement of the health workforce, but also increase the availability of drugs and other health commodities that enable the provision of health interventions at the individual and community level.

In the literature, the link between service delivery and other health system components is recognised, along with the required inputs for humanitarian responses. The input component should not stand alone but should consist of an array of feedback that directs the contribution of each resource to different health services to achieve desired health outcomes and, of course, long-term results. Chee et al (2013:89) argue that training health workers is not a positive result in and of itself, unless there is a link between the

input received and service delivery, with a measurable contribution of capacity building to long-term results.

As stated, Chee et al (2013:89) highlight that supporting health facilities with supplies alone does not strengthen the system unless it is linked with different activities. Activities could be considered as strengthening health systems if they address more than a single disease or more than one health problem. Similarly, Scheffler et al (2015:5) report that the availability of health services in each facility is measured through the services offered, the presence of enough trained human resources, and health commodities and equipment to meet the demands of beneficiaries. Likewise, the WHO (2011a:14) describes public health services as being targeted at the entire population based on a health situation analysis, the presence of health surveillance systems with all required guidelines and case definitions, health service delivery, and preventive treatment in emergency services.

The WHO (2017a:4) acknowledges that essential public health systems must be strengthened to ensure their functioning and capacity to carry out humanitarian responses. In addition, the United Nations Development Programme (UNDP) (2015:7) notes that local institutions are at the forefront of crises, providing basic services to populations in need and maintaining routine, basic social services to host communities. In agreement, Wright and Holtz (2017:1) suggest that governments should employ different mechanisms to define priority services, design their essential packages of health services, and ensure that those services are available to all who need them.

Of equal importance, MEASURE Evaluation (2015:4) recognises that the availability of essential public health service packages at the local level can save the lives of vulnerable people. The availability of public health services in health facilities in Gambella was therefore assessed as a focus area to determine their capacity to offer humanitarian responses in health emergencies.

2.2.5 Data for decision-making and interventions

New health system techniques are predominantly mathematical in nature, which requires reliable quantitative data and a well-defined problem context. In addition, information helps to bolster support for humanitarian responses based on evidence. It is also

recognised that public health data are critical to the timely identification, prioritisation and development of realistic response plans that are workable and can solve societal public health problems (Cheechi et al 2017:4).

In agreement with Thunhurst (2013:4), data are critical for informed decision-making on public health services in humanitarian situations. Therefore, there is a strong relationship between data and other sub-components of the conceptual framework, such as the human workforce, service delivery and medical supplies. According to the WHO's 70th World Health Assembly (WHCA 2017:109), the unavailability of required data, limited information on data management from the source, or the total absence of systems to manage high-quality and reliable data, could result in disruptions of medicines, vaccines and other supplies required for service delivery. Furthermore, the Humanitarian Actions for Active Learning Network for Accountability and Performance (ALNAP) identified that there are limited capacities on data management in health facilities in emergency-affected areas; therefore, there is too little information on the availability of public health services for vulnerable people who need it the most (ALNAP 2015:100). In support, the WHO (2013d:19) suggests that information on public health services should include data on the availability of services targeted at women, as well as immunisation and other child health curative and preventive services. Interventions targeted at preventing and controlling communicable diseases, diagnosis and prompt treatment, and data on basic and emergency surgery (including blood transfusion), should be collected to determine health care provisions. To execute the exercise, the WHO (2013d:11) designed a tool that can be used in assessing and monitoring health service availability and health facilities' capacity to offer services by generating enough data about the facility. The information tracks how the health system would respond to health needs by identifying the required input for the implementation of programme interventions (process); meanwhile, the input and process contribute to positive outcome results. Therefore, the availability of data-capturing tools with proper recording and reporting systems, as per the national health information systems protocol, can not only improve disease surveillance systems, but also produce better health outcomes.

For any humanitarian response, flow and use of data should be planned at the beginning of service provision. Accordingly, Parmar and Greenough (2017:609) recommend sharing programme information on areas of greatest need. Further, data could be shared with all concerned stakeholders to identify major bottlenecks. However, all issues may still not be

addressed at the same time, considering the scarcity of resources, as well as public health problems existing alongside other societal problems. Health managers and decision-makers should make critical decisions on the target population that require priority measures and propose and implement workable interventions that fit the identified problems. By the same token, Dejong, Ghatas, Bahour, Akik, Mourtada, and Reese-Materson (2017:10) note the comparative advantage of contributions that each institution could make during a crisis, and suggest that data must be shared between humanitarian and government institutions for more effective response and accountability on who should do what. A workable programme intervention can then be established based on the identified gaps from data, reflecting responsible persons and required resources.

Similarly, the WHO and World Bank (WB) call on all countries to strengthen their national health information system by capacitating the human workforce with the required skills on data management, review, adherence to standards of data protection, using and sharing data, acknowledging the availability of data, and evidence. This practice will serve as a means to ensure the implementation of health services so that health programmes are strengthened, and services reach marginalised groups (WHO & WB 2017:18, 22). Equally, the WHO (2012c:85) states that the decision on which public health diseases are included under priority disease prevention strategies should be based on the availability of evidence that justifies its importance. For this reason, the WHO (2017c:4) highlights the availability of routine data on health services as a critical element, hence health data could widely be used for health sector performance reviews, in planning health interventions, and for programme monitoring and quality improvement.

Baytun, Rockenschaub and Murray (2012:7) suggest the need to improve health information systems by increasing the range of data sources and improving surveillance systems for use during emergency planning and response. The UN 'Every Woman Every Child' initiative identifies that the use of health data depends on the health actors' capacity to properly manage, analyse and communicate the data to the intended users to inform the decision-making process or improve health programmes (UN 2016a:17). The UN recommends capacity building for public health institutions in each country to improve the data management systems and uses of the data. The DI (2017:25) similarly notes that host communities' and refugees' demands become increasingly intertwined, and both societies are vulnerable to the same demographic, economic and climate-related pressures on overstretched resources.

The London School of Hygiene and Tropical Medicine, Harvard School of Public Health, and the Overseas Development Institute (2015:169) state that in areas where local health systems are involved in humanitarian responses, there is a need to collect information on the business continuity plan to ensure routine health systems are not affected by specific responses. The need to collect information in the present to address future needs is essential, and planning for long-term exit strategies is recommended so systems do not collapse at the end of specific emergency responses. Moreover, Ovesen and Heiselberg (2016:24) suggest that vast knowledge could better guide humanitarian responses. Improving and merging collected data is thus critical in planning, implementing, and monitoring a coherent response. Interestingly, on 19 September 2016, UN member states (UN 2016b:18) called for states, the UNHCR, and other relevant partners to implement impact assessments to address the needs of host communities and refugees holistically. In response to this call, the UNHCR (2017a:5) sought to build on and strengthen existing coordinating activities and build synergies between humanitarian and development programmes to address gaps and potential duplications in a targeted manner.

Public health responses to humanitarian situations would not be possible without health information systems in place, and therefore, the present study reviewed documents on public health services provided in health facilities.

2.2.6 Finance in a conceptual framework

Financial resources are an essential element for public health service provision. The World Health Organization and World Bank (WHO and WB) (2017:16) note that health financing is the key determinant for the capacity of the entire health system to address health needs. Finance interlinks with other health system functions, and the procurement of medical commodities, including prepositioned supplies, emergency health supplies, and the distribution of services, which all require financial resources. Equally, the development of information and communication materials for public health key messages on disease prevention, and increasing the uptake of such services, also require budget. In addition, the availability of financial resources could enable the system to recruit and provide training to new and existing health workers on health programmes that should be provided during humanitarian responses. Finance can also enable systems to improve access by making the health infrastructure available for all the required services.

Accordingly, the WHO (2016f:13) recognises health financing as an essential enabling function in strengthening the public health system.

According to Kurzin, Witter, Joweet and Bayarsaikhan (2017:5), health financing cannot simply be imported from one country to another, given the unique context of each country. For well-functioning national and sub-national health systems, concerned bodies should have the means to finance their health care system for meaningful results. One of the main causes of unfinished business after the implementation of the MDGs might be related to the priority that was given to vertical health programmes instead of focusing on health systems thinking. The fund was allocated to specific health programmes, forgetting the system components that could holistically contribute to the expected results should the health programme be integrated.

Surprisingly, Hafner and Shiffman (2013:46) state that a number of organisations involved in global health were initially convinced that some MDGs could not be achieved without consideration of health systems strengthening. Donor interests, unclear knowledge, and directives from member states were additional motives for the approval of MDGs, despite the limitations of specific health programmes. Consequently, significant funds that could have strengthened entire systems were wasted on vertical programmes. The board members of the Global Fund were thus criticised for not modifying the mandate and the name to a more general term such as 'Global Fund for health systems strengthening' (Hafner & Shiffman 2013:45).

It is worth mentioning that the share of the health system budget was reduced globally, from 63.5% to 27.6% as attention shifted from health systems strengthening to infectious diseases (Hafner & Shiffman 2013:47). In agreement with Hafner and Shiffman, the action agenda developed during the third international conference held in Addis Ababa identified partnerships as an effective instrument for mobilising human and financial resources. World leaders thus recommended that aid agencies should use existing systems, and build local actors' capacity as a way of using resources during humanitarian responses to crises (UN 2015a:16-18).

Chee et al (2013:86) expressed interest in broad health system strengthening by noting that disease-specific interventions implemented in a vertical approach are not sustainable. Therefore, low- and middle-income countries should renew emphasis on

improved horizontal health systems strengthening rather than vertical disease-oriented programming (Nickerson, Adams, Attaran, Hatcher-Roberts & Tugwell 2014:676).

In addition, Kruk, Myers, Varpilah and Dahn (2015:1911) call on the improvement of interaction between the proponents of the WHO to ensure sustainable improvement. Similarly, in mobilising resources and its uses for emergency responses, it is vital to consider long-term recovery, without threatening the viability of routine health systems; as happened in West Africa during the Ebola disease outbreak (WHO & WB 2017:17). In like manner, the WHO (2016f:14) highlights the availability of funds and removal of financial barriers as efforts that could address the health needs of marginalised populations.

The provision of public health services and other essential services require funds to meet the operational costs of preparedness, implementation and monitoring. Increasing budget allocations for the public health sector is one component of health systems strengthening that might enable the system to identify and fix the observed gaps. Health service provision also requires cash to improve access to disadvantaged groups (WHO 2016f:14).

2.2.7 Leadership and governance in a conceptual framework

To make public health services available for humanitarian response, strong leadership and governance are critical. Strong leaders might have an emergency and contingency plan in place, and be able to mobilise and allocate the required budget for the procurement of prepositioned supplies during humanitarian emergency responses. Prabhakaran and colleagues report that while leadership and governance seem critical for health systems' functioning, there is a lack of evidence and understanding of how governance can influence health system performance and outcome results (Prabhakaran, Dutta, Saxena, Stromberg, Clarke and Sharma 2017:1). The OHA Authority (2014:23) argues that, despite insufficient evidence, achieving public health goals depends on the competency of organisational leadership and governance, which can provide executive decision-making and direction, and align and lead internal and external stakeholders with defined goals and strategic direction.

Similarly, Jarris and Sellers (2013:95) note that improving the health of populations requires strong coordination, collaboration and integration among different stakeholders. This stance is supported by what happened in West African countries during the Ebola disease outbreak, where health was not given priority until the outbreak deteriorated beyond the control affected countries due to insufficiently trained health workers and a weak health leadership (Olu 2017:4). In the case of leadership and governance, Terwindt, Rajan and Soucat (2016:7) also affirm the necessity of priority setting, as resources are always limited, and strong leaders can define targets and indicators based on the data, and coordinate and make leadership decisions, including on matters relating to accountability (i.e. who does what).

Moreover, humanitarian operations need a well-developed, contextualised, needs-based protocol in place; in its absence, intended results might be impossible to register. Without this protocol, the relationship between programme or humanitarian interventions and expected health outcomes might not be met, as noted by Neil (cited in Phalkey et al 2012:9). Thus, in the absence of a clear line of command during humanitarian situations, even with the best resources at hand, results may be unachievable.

According to the WHO (2016f:14), a clear chain of command is required for effective coordination, with responsibilities plainly identified and, crucially, using the agreed-upon developed protocol for successful humanitarian operations. This is important in avoiding managerial confusion, duplication of work, wastage of resources, and delays or failures to provide care for those in need. Similarly, the Inter-Agency Standing Committee (IASC) (2015:14) notes that good coordination can help to prioritise humanitarian responses. It can also assist in addressing issues of duplication among partners by directing the allocation of limited resources to results-based priority interventions.

Akl, El-Jardali, Karroum, El-Eid, Brax, Akik, Osman, Itani, Farha, Pottie and Oliver (2015:2) state that limited coordination between national and international non-governmental organisations, UN agencies, and government bodies that provide humanitarian services, can lead to wastage of resources that could have been used to improve service delivery to targeted populations. Additionally, Nickerson, Hatcher-Roberts, Adams, Attaran and Tugwell (2015:6) suggest that expanding public health service provisions need to consider the context in which the programme is implemented. Key stakeholders, including community members, should also conduct a needs

assessment and identify the availability of existing service and the absence or presence of required health services.

At the 9th Global Conference on Health Promotion, conducted in Shanghai on November 21-24, 2016, participants recognised good governance as being crucial for health if the world is to 'leave no one behind' (WHO 2017e:8). The conference called on good governance, local actions and community empowerment to be prioritised, and for health to be considered as a political choice that needs shared responsibility. Such actions will ensure health promotion and wellbeing among different stakeholders in removing barriers (such as low awareness), and create an enabling environment for both health-demand and supply sides (WHO 2017i:24).

It is through strong leadership and governance that resources can be productive. Political commitment is the most important factor for the success or failure of a health system to offer services. The commitment of public health authorities should start from the ownership of public health responses and involvement of all stakeholders. Strong leadership and good governances should also ensure ownership of health programmes to solve societal health problems. Ownership can contribute to systems strengthening by making public health programmes available. Strong leadership can also maximise the use of limited resources allocated to public health programmes. In support, the UN states that strengthening the capacity of local institutions to take ownership and leadership in any response should be a priority in conflict-affected areas (UN 2015c:14). Furthermore, Greer, Figueras and Wismar (2016:4) note that good governance in health systems shapes the ability of health systems to respond to the challenges they are facing.

The WHO Regional Office for Africa reported that weak managerial capacity and a shortage of skilled human resources in Ethiopia remain a health system constraint that undermines efforts that are responsive to public health needs (WHO 2013f:32). Van Berlaer (2017:18) notes that good intentions alone are not enough to make sure victims receive the best quality of care possible, even in difficult circumstances. By the same token, the World Health Organization and United Nations Children's Emergency Fund (WHO and UNICEF) (2014:21) acknowledge that it is the primary responsibility of any country to develop ownership and establish strong health administration at all levels, with the capacity to offer public health programmes based on communities' health needs. Furthermore, Lomazzi, Boris and Jenkin (2016:5) recognise the need to have political

skills, imagination, initiative and courage to face and solve different health-related conditions. Interestingly, the head of the UNDP stresses that developing a resilient health system requires a committed leader at all levels. It also needs institutional capacity, systems thinking for long-term strategies, multisectoral responses, and accountability to the poorest and most vulnerable communities (UNDP 2015:2).

The availability of public health programmes, and fully capacitated health facilities is an attentive area connected to strong leadership and good governance. These factors are vital in coordinating public health services during humanitarian responses.

2.2.8 Improved humanitarian health responses in emergencies – conceptual framework

Public health emergency services that are provided during humanitarian responses should be improved to meet the needs of emergency-affected populations. Accordingly, public health facilities should be equipped with all the necessary resources to provide appropriate services.

Pyone et al (2015:648) note that humanitarian emergencies due to conflicts, flooding, drought or epidemics affect health outcomes. During humanitarian emergencies, it is common for basic health services to collapse if the type of crisis is not understood and the response misjudged. Furthermore, Tittala, Tuomisto, Puumalainen, Lyttikainen, Ollgren, Snellman and Helve (2018:1) state that refugees may have an increased risk of certain diseases, including TB and HIV, depending on the prevalence of the disease, their living conditions, and potential health care service disruptions in their country of origin and during transit to the entry point.

The overpopulation of people in a small area, living in unhygienic environments, with limited health service provisions, inadequate clean drinking water and insufficient food, are major factors that help spread preventable illnesses (WHO 2013e:4). It is also clear that the provision of health services during a humanitarian response is different from that of emergency health responses, where the disease outbreak occurs in the regular population setting. An emergency crisis might put people at increased risk of contracting communicable diseases, which might directly or indirectly cause another health emergency – an emergency within an emergency. This highlights the need for public

health systems with the required capacity to timely respond to the public health needs of emergency-affected populations.

According to the IOM (2012a:2-10), local health departments are often considered the frontline of public health agencies that generally provide direct health services to the communities and populations they serve. Therefore, the existing health system should be functional and able to respond fully to the health needs of refugees, or indeed anyone in humanitarian need. The unavailability of public health services could result in large disease outbreaks that might easily spread to host populations. While different humanitarian organisations could support humanitarian health needs during emergency responses over the short term, long-term planning for future responses should also be considered. This could be through systems thinking that helps to develop interventions to support and strengthen the existing public health system in responding to any public health problem in the short and long run.

Chee et al (2013:86) highlight that supporting and strengthening activities during humanitarian situations is crucial. They emphasise looking for interventions that have long-term effects for systems strengthening, while continuing to support interventions for short-term, life-saving public health service provision. Evidence suggests that not distinguishing supportive activities from system strengthening activities could lead to ineffective and inefficient use of resources on interventions that cannot address health systems strengthening components (Chee et al 2013:86). This could happen when some actors are interested in supporting specific interventions over the short term and ignoring those interventions that can support the health system in the future. Or it could be due to a lack of understanding and limited capacity to apply systems thinking to critical health system strengthening activities (Chee et al 2013:92).

It is worth noting that lessons learned from the humanitarian response during the recent displacement of people in Syria could inform broader discussions on how to build responses that better support resilience (Pearce & Lee 2018:31). According to Gonzalez (2016:27), the response to the Syrian crisis was not fit for purpose. Instead, humanitarian response was criticised as fragmented, with no integration between humanitarian and development interventions among the population affected by the situation. The Sphere Project (2011:11) states that appropriate humanitarian responses are informed by assessed situations, a needs-based approach, and taking the contexts where the

responses will be implemented into consideration. The existing capacity and gaps in each context are also determined, and a response plan is adapted accordingly.

To summarise, a public health facility with the required resources could improve the provision of health services in emergency response situations. Humanitarian responses are vital to save the lives of people from killer diseases that could occur as a result of humanitarian crises.

2.2.9 Increased level of awareness and a resilient health system

Crisis-affected populations should be aware of public health problems that present risks based on where the emergency occurs. The process might require locally developed public health emergency messages for health promotion and disease prevention packages to be disseminated among emergency-affected communities. Key messages should be delivered either through the community or volunteer health workers who respect the culture and who might know the contexts. Emergency-affected communities should also be informed about where to get public health services when the demand for health-seeking behaviour develops. In addition, public health systems should be resilient, prepared, and able to address any health concerns.

Lomazzi (2016:210) recommends resilient public health systems at all levels – locally, nationally and globally – in every country. Moreover, the WHO's (2012a:11) action plan for strengthening public health strategies also acknowledged socio-economic influences. Accordingly, the contexts, beliefs, norms, and behavioural and demand creation activities should be factored into systems strengthening. As per Baytun et al (2012:8), the dissemination of key public health messages not only has the benefit of making the larger community aware of public health issues, but is also important among the communities that might lack resilient health systems. Therefore, the awareness created through communication dialogues or social mobilisation should increase the uptake of health services and knowledge about health promotion and disease prevention by increasing health-seeking behaviour.

Seaman, McNeice, Yates and McLean (2014:3) regard resilience in public health as going beyond preparing institutions and organisations to respond to known public health problems. For them, resilience in public health is a population's capacity to accept

changes, think of the future, and prepare to respond to unpredictable public health problems, such as epidemics and pandemics. Maxwell, Conostas, Frankenberger, Klaus and Mock (2015:6) regard resilience as a systematic process that must be analysed based on distinct perspectives of the affected people. Resilience also requires clear and complex interactions between system components and includes a feedback loop from the people involved to measure whether it meets their expected outcomes through the use of data (Maxwell et al 2015:6).

This point is echoed by the Intergovernmental Panel on Climatic Change (IPCC), which defines resilience in terms of the system's abilities to absorb, accommodate, anticipate or recover from shocks, and ensure the strong structural and functional mechanisms of the systems are restored (IPCC 2012:5). Furthermore, the WHO (2016c:7) considers resilience as a dynamic objective, captured over time as systems progressively build capacities for effective responses to future shocks. Moreover, the WHO (2017a:4) recommends that health system resilience includes essential public health functions and the capacity for emergency response, as the emergency might disrupt routine health service provision in the absence of strengthened health systems.

While key partners should ensure the availability of health services to emergency-affected communities, Lam, Diaz, Maina, and Brennan (2016:2) suggest social mobilisation and communication as interventions that could increase demand for health services utilisation. Importantly, the availability of public health emergency messages should not only increase demand for the uptake of health services, particularly those related to maternal, new-born, child, and adolescent health services, but create a resilient system with the required capacity to respond to humanitarian situations.

2.3 PUBLIC HEALTH SERVICES IN ETHIOPIA

The WHO (2012a:3) notes that public health services are described differently by different members of states. Despite different descriptions, public health services have more common principles than differences. The nature of concern for 'the public' rather than the individual, and a focus on the health of the public as a whole, are the most common and uniting principles of public health (WHO 2013c:109). According to Ethiopia's FMOH (2013b:4), the country's public health care system is structured around a health network model that uses a three-tiered health care delivery system. Thus, the model uses the

education terminology of primary, secondary and tertiary levels, depending on the geographical location of the given health facilities and total population served (FMOH 2013b:6).

The primary level consists of single networking health centres linked to five satellite health posts in the rural setting, where each health post serves a catchment population of up to 5,000 people. The catchment population of 25,000 people in rural areas is equivalent to five villages served in one rural health centre. Each urban health centre provides primary health care services to populations of about 40,000 people (WHO 2017h:5).

While public health facilities in Ethiopia account for about 89% of health care service providers, the primary hospital offers preventive and curative services to between 60,000 to 100,000 beneficiaries (WHO 2013f:15). Multidisciplinary staff working in general hospitals at the secondary level provide services to 1 to 1.5 million people, and the general hospital can receive referred cases from health centres. Besides the provision of curative and rehabilitation services, general hospitals can serve as practice centres for health professionals. The highest level of institution, the tertiary level, can provide services to a catchment population of between 3.5 and 5 million people. These hospitals employ medical staff with different specialisms and receive referral cases from general hospitals. Referral hospitals are equipped with different specialities and are centres for medical researchers, in addition to being service providers (WHO 2017h:5).

Regarding the staffing and some specific services, health centres are staffed by about 20 mixed mid-level health professionals who can provide basic curative and preventive services (FMOH 2016:4). The health centre provides referral, technical, administrative and logistic support to health posts under its catchment. One health centre may offer up to five inpatient beds to emergency or critical cases. The primary hospital also provides ambulatory and inpatient services, such as emergency surgical services, including caesarean sections, and serves as a referral centre for nearby health centres. It has 25 to 50 beds for inpatients and is staffed by over 53 categories of health professionals (FMOH 2015:142).

Despite the presence of health system structures and health facilities at all levels, public health services in Ethiopia have inadequate capacity. The health system in Gambella is far below the required standards for full functioning, and requires substantial work to

become a resilient health system that can respond to emergencies. According to Pundhir and Boke (2015:3614), although the current federal constitution of Ethiopia decentralised governance systems into regions (or states), zones, districts (locally called *woredas*) and villages (*kebeles*), implementing capacity might not be uniform.

Fusheini and Eyles (2016:7) highlight that there is room to improve local administrative and health managers' capacity for successful decentralisation and implementation of tasks. Accordingly, crucial steps have been taken by the government of Ethiopia in improving decentralisation in the health sector. In the process of decision-making, district (*woreda*) health offices are mandated to develop realistic plans and implement and monitor progress based on stated baselines and targets. Furthermore, RHBs supervise, play monitoring roles, and mobilise resources for priority programmes. They also collate planned activities and send all regional plans to the FMOH. In turn, the FMOH compiles the collected plans in a single national document. The FMOH also has a guidance role at all levels to ensure that planned activities are performed according to national targets and objectives (FMOH 2013b:21).

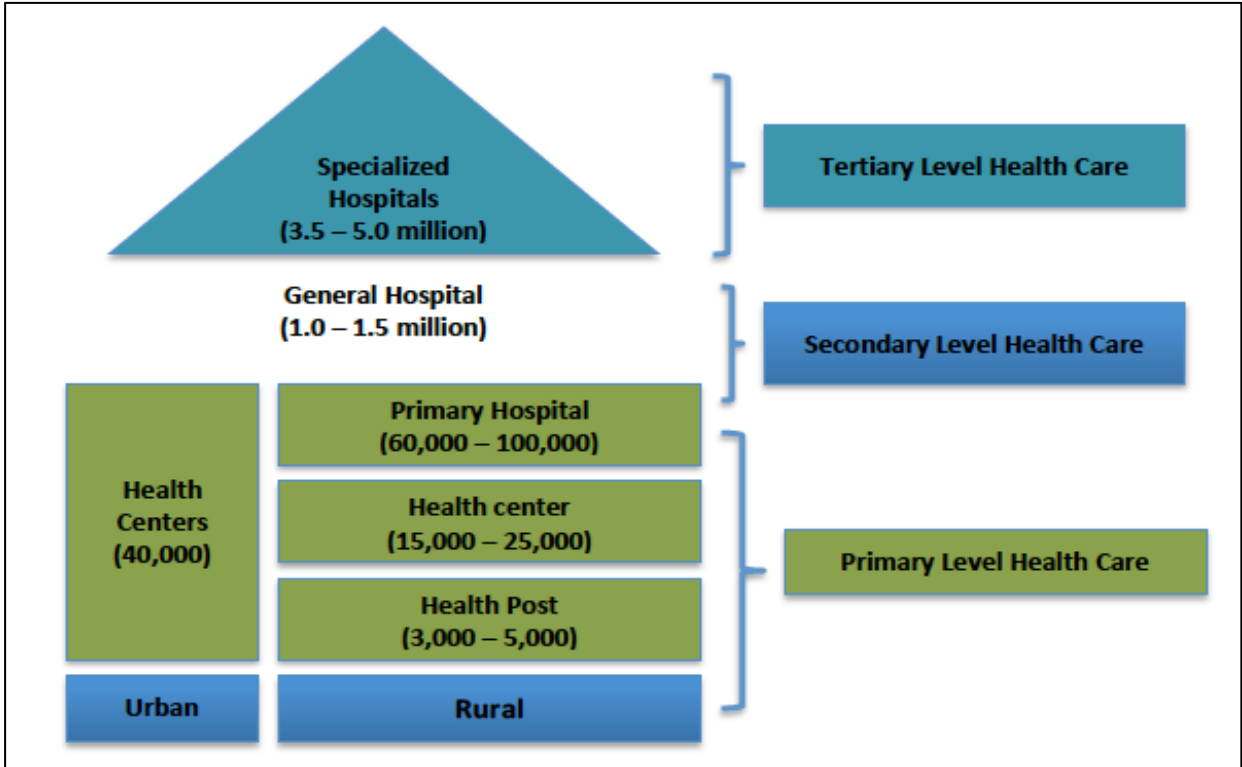


Figure 2.2 Public health care system in Ethiopia

(Source: FMOH 2013b:6; FMOH 2016:4)

Furthermore, the FMOH (2015:63) was mandated to set policy and regulations for service provision and deploy highly qualified professionals to regional states based on the needs justified by the RHBs. The literature thus identifies the government as the responsible body for public health service provisions, including to emergency-affected populations. Health facilities offer health programmes for outpatients, including services targeted at mothers, children and adolescents, and inpatients services are provided to admitted patients, including for the treatment of chronic diseases. Further, the services comprise treatment for preventable childhood diseases and communicable diseases that threaten the lives of the population. Despite the absence of the internationally adapted WHO protocol into the national health system for humanitarian response, the National Disaster Risk Management Commission (2018:30) identified the FMOH and RHBs as the main actors in the delivery of humanitarian health services through permanent and temporary health facilities.

2.4 SERVICE AVAILABILITY

According to the WHO (2013d:9,12), health facilities should have a trained staff member available, diagnosis and treatment guidelines, infrastructure, basic equipment, essential medicines, diagnostic test capacity, and standard precautions for infection prevention. Additionally, the WHO (2015g:9) recommends that facilities should have the capacity to offer women's health services – gestational, intrapartum and postpartum – for instance, antenatal care (ANC), family planning (FP), basic emergency obstetric and new-born care, immunisations, and child health preventive and curative care. Moreover, the health facility should provide adolescent health services, including for sexually transmitted diseases, malaria diagnostic and treatment services, and TB and HIV/AIDS prevention and control services. In addition, specialised services should include blood transfusion, laboratory capacity and other life-saving interventions.

Assessing the availability of core functional capacities and the presence of specific services in health facilities, as noted above, is critical. This is required not only to identify the gaps from key findings, but also to recommend and propose a needs-based protocol for better health outcomes for emergency-affected and host communities. This study followed the WHO recommendation in assessing the availability of public health services in order to develop a needs-based public health service protocol for humanitarian emergency responses.

2.4.1 Infrastructure availability

Although access to health services in some hard-to-reach areas is a problem, the literature shows that Ethiopia has a good health policy in terms of health infrastructure (Ministry of Health Ethiopia, Partnership for Maternal, New-born and Child Health, Action Health Policy and Systems Research and World Health Organization (MOH, PMNCH, AHPSR & WHO) 2015:10). Health facilities have been expanded and prioritised as part of a strategy to develop and rehabilitate government health facilities in the country (FMOH 2015:12).

The Ethiopian FMOH's health-related indicators show the country has a total of 281 functional government hospitals – one for every 335,334 people. It also has 3,622 health centres – one for every 26,016 people (FMOH 2017b:50). Across the sub-Saharan African region, O'Neill, Takane, Sheffel, Abou-Zahr and Boerma (2013:924) note that the distribution of health facilities ranges from 1.2 to 2.2/10,000 population. In Ethiopia, the Health Sector Transformation Plan of 2015 indicates the number of health service personnel increased to 1.3/1,000 people in 2013, from 0.84/1,000 population in 2008 (FMOH 2015:47).

2.4.2 Health workforces

Public health workers are the primary resources most needed during health crises. It is essential to assess the availability of trained professionals, as services should be available and offered by people with functional competency in implementing health programmes. According to the WHO (2016f:12), the health workforce providing health care to migrants or emergency-affected people ought to have the required skills in dealing with emergencies. In agreement, the WHO (2017a:4) states that emergency health preparedness requires that a health facility has adequate staff, with mixed skills and competency to carry out duties routinely and during emergencies to address the needs of the people. It explains that public health authorities are responsible for strengthening and monitoring needs, and providing enough human resources to ensure sufficient health services (WHO 2017a:5).

The WHO's strategy to end preventable maternal mortality (WHO 2015h:26) recommends that health care workers must be prepared to not only provide specific

health care services but address the community's health and medical-related conditions. It also identifies the necessity of each country ensuring optimal recruitment, distribution and retention of health professionals, strong mentoring, and capacitated frontline health workers to improve access to remote areas. Elias and Accorsi (2014:24) note that Ethiopia started a task shift programme by training health professionals at BSc level, those with first degrees in nursing, and health officers, in emergency surgery so that they are able to perform caesarean sections and basic surgery at the general hospital and health centre levels, when no highly skilled surgeons or gynaecologists are available.

In another attempt to address some gaps identified in relation to the human workforce, Ethiopia tried to increase public universities from eight to 57 higher institutions, of which 34 universities are teaching hospitals offering different programmes and specialities. However, despite the expansion of higher institutions, the lack of human resources, such as midwives, anaesthesiologists, obstetric surgeons and other high-end specialists, still exists in all public health facilities (WHO 2015f:7).

2.4.3 Utilisation of services

The WHO (2015g:10) rates the utilisation of health services according to the visits registered at outpatient departments within a year, and the discharge records from the hospital per 100 individuals per annum. There are significant disparities in admission rates among the regions of Ethiopia, with the highest admission rate being 72% in Harari Region, and the lowest 4.9% in Afar Region. Meanwhile, the highest average length of stay is six days in Addis Ababa, followed by three days in Gambella Region (FMOH 2017b:42).

2.5 GENERAL SERVICE AVAILABILITY

This study assesses health facilities' capacity in terms of the availability of standard precautions to prevent infections, the presence of laboratory services, the availability of essential drugs, equipment and other infrastructure components, all of which are essential inputs for health service delivery. The WHO (2015h:25) conceptualises a health system as a system with a hardware component that comprises health workforces, supply including infrastructure for service provision, data systems, and funding, which is the cross-cutting issue of other components, and health leadership and good governance at

all levels. The software component of a health system is the enabling environment, which creates demand for the utilisation of available health services. It comprises desires, values and social norms, as well as the role of communities, including religious institutions (WHO 2015h:25).

Of equal importance, the WHO (2018d:20) states that functioning health facilities require safe and reliable water supplies, electricity for various purposes, including diagnosis, sanitation components, and other types of infrastructure. Hence, the WHO recommends assessing the availability of these factors in the facilities. Elsewhere on the continent, the Government of Kenya Ministry of Health (2014:94) stated that while facilities may have the required infrastructure and staff, high-quality health services cannot be provided when there are no medical supplies. Equally, a facility can be equipped with health workers and required supplies, but if staff members do not have up-to-date skills to provide specific services, such as those relating to child health, the facility will not be able to provide these services. Furthermore, Oyekale (2017) notes that the capacities of health facilities are determined by the accessibility of resources that match required services. Moreover, health workers trained in public health programmes can anticipate the availability of public health services and the required resources.

The Ethiopian Public Health Institute, Ministry of Health and World Health Organization (EPHI, MOH and WHO) (2017:33) recognise that even in the absence of separate buildings for diagnostic services, functional health facilities should make test kits available for diagnostic purposes. For example, health service provisions are incomplete in a situation where laboratory services are non-functional. Having laboratories with trained personnel in the health facilities guarantees the complete availability of services. According to the Ethiopian Public Health Institute, Federal Ministry of Health and International Classification of Functioning, Disability and Health (EPHI, FMOH and ICF) (2014:27), health facility' ability to perform diagnostic assessments using laboratory tests determines the facility's ability to address the health needs of the public.

The provision of complete health care services by health facilities requires the availability of safe, effective and affordable medicines, in adequate quantities, at all times (Food Medicine and Health Care Administration and Control Authority of Ethiopia [FMHACA] 2014:IX). Moreover, the WHO (2018c:14) notes that increasing access to affordable medicines requires an investment in health systems strengthening. The WHO further

suggests that African governments should invest in and allocate adequate resources to strengthen the medicine and supply chain so that it extends to rural areas.

In addition, health systems should be enabled to monitor all health products in routine and emergency settings, with data systems in place on how products are used, to improve the services (WHO 2017k:8). In agreement, Haider and Islam (2018:36) note that health facilities should make required resources available, including infection prevention items, test kits for diagnostic services, and medicines.

This study considered the recommendations posed for assessing the availability of resources and infrastructure in health facilities so that they can provide necessary services. Public health facilities' readiness in terms of the availability of enabling environments, the availability of standard precautions for the safety of staff and clients, and the availability of laboratory services, essential drugs and equipment, are therefore included in the scope of this study.

2.6 SPECIFIC SERVICE AVAILABILITY

This study assessed public health service availability, with a focus on specific types of public health services and required resources in functional health facilities for the provision of humanitarian responses. According to the WHO (2013d:13), the readiness of each public health facility to offer specific services depends on the availability of trained health workers, laboratory tests, drugs, and other supplies in the facilities. Specific services include public health programmes that cater for pregnant mothers (e.g. ANC visits, birth control and spacing through provisions of family methods, intrapartum and postpartum care, new-born and child health interventions, and routine immunisation programmes); reproductive health services for adolescents; HIV prevention and control (including HIV counselling and testing); TB and malaria prevention and control interventions; basic and comprehensive surgery; and blood transfusions (WHO 2015e:11 and O'Neill et al 2013 924). Nickerson et al (2015:10) also suggest that even during crises, the availability of public health services and required resources must be assessed in all functional health facilities.

This study assessed public health facilities' capacity, including the presence of trained staff, guidelines, infrastructure, equipment, essential medicines and diagnostic tests

required to provide the specific health services mentioned above. The study also explored the gaps and the capacity of health facilities to provide public health services during humanitarian situations.

2.7 PUBLIC HEALTH IMPORTANCE IN HUMANITARIAN RESPONSE

In this study, the existing public health system's capacity for humanitarian responses and challenges in Gambella, Ethiopia were assessed. According to the World Health Organization and United Nations Higher Commissioner for Refugee (WHO and UNHCR) (2015:1), humanitarian crises, with huge displacements either inside or outside territories, can overwhelm a health system's capacity to respond when needed. With an increase in the population size as a result of a crisis, the demand for health services will also increase, exerting pressure on the already overstretched local health system.

According to the CDC, millions of people worldwide have been affected by complex humanitarian crises, both man-made and as a result of natural causes (CDC 2017:196). The DI (2017:13) reports that over 164 million people from 47 countries were in need of humanitarian assistance in 2017. According to Verwimp and Stadt (2015:9), about a third of the world's refugee population lives in sub-Saharan Africa. Even though refugee populations have dropped in many African countries, the burden of refugees on local health systems should not be underestimated. The African countries with reductions in the number of refugees include Angola and Mozambique in the south, and Senegal and Sierra Leone in the west. In contrast, the number of refugees is increasing in the East Africa region.

According to the UNOCHA (2017c:1-2), Ethiopia has become the second-largest refugee-hosting country in Africa next to Uganda, hosting 890,000 people from Eritrea, Somalia, South Sudan and other African countries. As emergencies continue to threaten public health, the WHO (2017c:1) recognises the need for health systems to be ready to respond to emergencies and reduce the societal, economic, and health-related consequences of such crises. In support, Rull, Peyraud, Dorion, Cigleneki, Luquero, Masson, Uzzeni and Ventura (2018:2) found that the risk of transmitting communicable diseases can increase during humanitarian crises where the provision of primary health care services is not initiated. Moreover, poor living conditions among displaced people, inadequate clean drinking water, poor hygiene conditions, open defecation due to a lack of latrines, and low

awareness of the use of communal toilets can fuel the risk of respiratory tract infections and diarrheal-related symptoms, including cholera outbreaks. Preventable diseases can therefore easily spread in humanitarian crises, which can result in increased sicknesses and fatalities. It has also been determined that overcrowding, poor accommodation, unclean water for drinking can all increase the transmission of vector- and water-borne diseases, and there is a risk of measles outbreaks and other infectious diseases among crisis-affected populations (Sphere Association (SA) 2018:311).

From the literature, humanitarian situations were found to have severe negative consequences on the host country. Routine health systems might be dysfunctional; patients being treated for chronic conditions may have their treatment interrupted; and poor living conditions among the emergency-affected population may be an opportunity for pathogens to rapidly spread causing an 'emergency within an emergency'.

UNOCHA (2017a:39) suggests that the provision of health care services to crisis-affected populations is essential in any humanitarian response. Consequently, it was noted that the burden of diseases and the mortalities faced in emergency-affected countries are high: worldwide, about 50% of the deaths to children under five years of age, and a third of the maternal deaths occur in fragile states.

An assessment conducted in Cameroon showed that over 50% of public health facilities in refugee-hosting villages have no essential items for service provision. The unavailability of the required resources has not only affected the host communities, but also refugees due to unavailability of primary health care and nutrition interventions which are life-saving to humanitarian-affected communities. The WHO (2015) also explains that government health facilities in refugee-hosting areas offer limited services to mothers. ANC services were unavailable in most facilities, and women give birth at home, assisted by unskilled birth attendants (WHO 2015e:6). The overall capacities of health facilities were found to be limited, and the lack of availability of medicines and skilled health workers were common bottlenecks in the facilities.

Health service planning and objective setting can determine the level of investments that can be made to reach the long-term results (WHO 2016c:352). Thus, all functional health facilities should be equipped with skilled human workforces, infrastructure for high-quality health service provision, essential drugs and other health commodities, and data

management for evidence-based generation and use (WHO 2016c:352). A well-functioning health system requires the allocation of budget for its operations and programme implementation, strong leadership at all levels for coordination, and needs the capacity to manage health emergencies that threaten public health.

McGoldrick (2015:1195) notes that humanitarian needs overwhelm and will continue to challenge health systems. However, the existing gaps in humanitarian needs can only be met through the collective efforts of all actors, including donors, to bridge the gap between the available resources and needs that can strengthen the systems. This entails a focus on developing resilient health systems at all levels of care, with proper attention to quality, and the full integration of core public health services (WHO 2016b:13).

As health is a fundamental right, life-saving should remain a core objective of humanitarian responses (Core Humanitarian Standard (CHS) Alliance, Sphere Project, Group URD 2014:8). Furthermore, the WHO (2015e:7) highlights the need to consider health systems strengthening to ensure better and timely response to meet the health needs of hosts and incoming refugees. Many refugee-hosting countries, including Ethiopia, therefore offer health services to refugees and host communities for the mutual benefit of protecting both communities from communicable diseases and other causes of ill-health. However, a needs-based protocol is required that can address the humanitarian situations of hosts and refugees. Ethiopia's National Disaster and Risk Management Commission (NDRC) (2018:30) acknowledges the gaps in the national health system and recommends health actors to support and capacitate health staff to complement the FMOH and RHB's response efforts. As noted above, critical interventions for humanitarian response include the provision of training in public health services during humanitarian situations – for both health managers and health providers – the procurement of reproductive medical supplies and kits, and the availability of required resources and services.

2.8 CONCLUSION

This chapter discussed different frameworks for redesigning a conceptual framework appropriate for public health services in humanitarian responses by assessing the impact context has on public health systems strengthening. The chapter also discussed the public health service structure of Ethiopia's health care delivery system.

The section concluded by discussing the importance of public health service provision in humanitarian responses, as offered by different reports and studies published by the WHO, UNHCR, UNICEF and UNOCHA. In addition, published reports, updates and studies carried out on resilient health systems in humanitarian-affected areas in sub-Saharan African countries were reviewed, along with studies conducted on service availability, including general and specific services offered in functional health facilities. This chapter lays the groundwork for developing a public health service protocol for humanitarian emergency responses.

The next chapter presents the research methodology used to collect and analyse data for this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the research methodology, which is composed of the research approach and design, the target population, sampling design, the process of data collection and analysis, and ethical considerations. The objectives of the research were to:

- Explore and describe the availability of public health services and resources required for humanitarian emergency responses.
- Explore and identify current humanitarian emergency health needs and responses.
- Study and critically analyse different humanitarian responses in respect of health care services and the related protocols.
- Develop a public health service protocol for humanitarian emergency responses in Ethiopia – such a protocol must be context- and needs-based.
- Clarify the policy and programme implications of such a protocol.

3.2 RESEARCH SETTING

Polit and Beck (2012:49) define research settings as specific places where the information required for research is gathered. The setting for the current study was the functional public health facilities in the Gambella Region. Ethiopia's federal structure comprises nine regions and two city administrations. Gambella is officially known as Gambella Peoples' National and Regional State. Located in Western Ethiopia, Gambella is one of four emerging and less-developed regions in the country. The regional state is divided into three administrative zones, named after the largest indigenous ethnic groups in the region: Nuer, Anywaa and Majang. The region is further divided into 13 districts and Gambella City administrative, also named Gambella. The state comprises 263 *kebeles* (lower administrative units).

Gambella is one of the most remote regions in Ethiopia, located around 777 km from Addis Ababa, the capital city. Agro-ecologically, the region is predominantly lowland with

a few midlands (*weyna dega*). The average annual rainfall is between 900 to 1,500mm at elevations of 450 to 600 metres above sea level, and 1,900 to 2,100mm per annum at elevations 2,000 metres above sea level. The annual average temperature ranges from 17.3°C to 38.3°C, depending on the topography, with a maximum of 45°C at certain times of the year. Gambella has a long rainy season that spans April to November. This is due to the tropical monsoon from the Indian Ocean that has a significant impact on the regional state's climate.

Gambella's land is a combination of arid, semi-arid and humid, and is generally suitable for agriculture. According to the 2007 census, the region's population was 306,918. The latest projection for 2017/18 shows an increase to 453,442, of which about 231,255 are males, and 222,187 are females. According to the 2016 Welfare Monitoring Survey conducted by the (CSA) 2016:32-34), 34% of Gambella's population live in urban areas, which is the highest proportion among the regions in the country. Displacements are rife due to phenomena such as droughts, floods, and clan tensions, and as of November 2018, Gambella was host to 404,748 refugees in seven camps, almost doubling the population (UNHCR 2018b:1). Gambella has two major rivers that allow flood retreat cultivation. Flooding occurs mostly during the rainy season, when the Baro and Gillo rivers rise.

Gambella is rich in resources and arable land. People mostly depend on farming, pasture, beekeeping and hunting to make a living. The main crops grown are maize and sorghum, followed by mango, banana, coffee, papaya and cotton. Moreover, fishing takes place in three main rivers (Akobo, Baro and Gillo). Lakes are also a source of income for many people. The region is attractive to national and foreign investors due to the suitability of its land for agricultural irrigation and gold mining. The population increase in Gambella put pressure on the region, overstressing the delivery of health services. Urbanisation and natural hazards also threaten public health service provision in less prepared public health institutions.

3.3 RESEARCH DESIGN

In the current study, a **convergent mixed-method** approach using a case study design was employed to study the availability of public health services for humanitarian responses. As noted by Lorenizini (2017:1556), proper attention to the mixture of

quantitative data with qualitative findings in a mixed-method design can generate rigorous and important evidence to improve health care services and systems.

A research design is a systematic process that the researcher follows as an action plan, which, when implemented, achieves the expected purpose of the study. It is an action plan that stretches from the research purposes to the conclusions of the research recommendations, serving as a blueprint that connects questions on the research problems to the conclusions of research (Yin 2014:28-9). It also serves as a conceptual framework for organising, conducting and communicating quantitative and qualitative findings and analyses, and integrating the two strands (Plano-Clark, Anderson, Wertz, Zhou, Schumacher & Miaskowski 2014:3). It is essential that the methodology is appropriate to provide answers to the proposed research questions (Bwalya & Kalu 2017:43). Research designs promote value, theory, practices, and assumptions on the nature of reality, and scientific information on given research problems. Similarly, researchers suggest that the selection of the methodological approach in a given study depends on the researcher's paradigm, as an approach to thinking about and conducting research (Antwi & Hamza 2015:218).

3.3.1 Rationale for the mixed-method approach

The researcher used a mixed-method approach for data collection, in the sense that parallel methods of collecting quantitative data and qualitative information were deployed. The mixed-method design combines the comparative advantages of quantitative and qualitative research and is thus preferable to using quantitative or qualitative methods only. Leppink (2017:100) suggests that the mixed-method approach extracts the advantages and reduces the weaknesses that each approach has. A mixture of quantitative and qualitative data helps the researcher generate enough evidence to understand an issue that would otherwise be impossible to comprehend using a single approach (Halcomb & Hickman 2015:13).

In the current study, the quantitative data collected on the availability of public health services and required resources for service provision were mixed with qualitative information collected from health professionals regarding public health needs during emergencies, challenges, and lessons learned from previous humanitarian responses. The combination of the quantitative and qualitative data provided enough evidence to

identify bottlenecks to service provision and formed the basis on which to propose a needs-based protocol that could address them. The mixture of data enabled the researcher to describe, explore and explain the availability of public health services in humanitarian emergencies with the aim of developing a workable needs-based public health service protocol for humanitarian emergency responses in Gambella.

For the current study, a **convergent mixed-method** approach was used to combine the strengths and compensate for the limitations of using a quantitative or qualitative method alone. The systematic process of mixing the quantitative and qualitative findings is a unique characteristic of the mixed-method approach. The two data sets are mixed based on adopted principles on when and where findings should be combined. Critical thinking is required when conducting mixed-methods research to gain a better understanding of the concepts under investigation (Schoonenboom & Johnson 2017:115). Regarding data integration, some researchers contend that the integration of data can occur both during the data collection and analysis stages, while others propose that integration should take place at the interpretation and analysis stage. A true mixed-method approach should have at least one point of integration (Maxwell & Loomis 2003:244). In addition, a mixed-method approach remains not only mixed in terms of quantitative or qualitative data, but also produces synergy and a quality that is unique beyond its quantitative and qualitative components (Creamer 2016:12).

The mixed-method approach helps researchers to overcome complex works that would otherwise be unachievable using deductive, objective and general (quantitative) approaches only, or solely through the inductive, subjective and contextual (qualitative) approach (Morgan 2014:57-8). This approach is recognised not only as an appropriate design but is also regarded as an essential method to thoroughly investigate the effectiveness of programme implementations and produce complementary evidence needed to answer research questions (Lindsay 2013:96). Different authors define 'mixed methods' differently, with little consensus as to its links and connections with research questions and purposes. There is an agreement, however, that it is an approach that involves the collection, analysis and combination of quantitative and qualitative results (Creamer 2016:4).

According to Creswell (2014:219-220), the convergent design of a parallel mixed-method approach refers to the concurrent collection of two data sets, which are separately

analysed, and brought together during the interpretation phase. Furthermore, a convergent design, sometimes referred to as a 'concurrent design', is where the collection and analysis of mixed-method data are done separately within a given timeframe (Fetters, Curry & Creswell 2013:2137).

The use of the mixed-method approach in this study offered the researcher distinct comparative advantages to explore and examine the research topic (Wisdom & Creswell 2013:3). In this study, the concurrent mixed-method approach was employed, where the two data strands were collected in parallel over the specified data collection period. The analysis of both sets of data was done separately after the data were collected, then the quantitative and qualitative results were integrated at the interpretation stage, as illustrated in Figure 3.1.

3.3.1.1 Quantitative phase

Numerical data were collected on the availability of FP services, ANC, delivery services, immunisation and child health services. In addition, quantitative data were collected on disease profiles of public health importance, such as malaria, TB, HIV/AIDS, sexually transmitted infections (STIs) and basic surgical services.

Similar data collection methods were applied to health facilities' readiness to offer public health services. The quantitative data that were collected focused on the availability or absence of essential drugs, infrastructure, basic equipment, and the diagnostic capacities of health facilities. Public health facilities were also assessed in terms of integrated supportive supervision conducted in the last three months of the data collection period.

3.3.1.2 Qualitative phase

The data on the provision of public health services during emergency responses were collected from 17 participants via face-to-face interviews. The interviews were conducted as follows:

- One interview was conducted with the public health emergency expert of the regional health bureau at the regional level.

- Three interviews were conducted with health experts of the zonal health departments in Nuer, Majang and Anywaa.
- One interview was conducted with a health expert from the Gambella city health office.
- 12 interviews were conducted with district health experts.

All interviews were conducted as per arranged schedules through the heads of offices and facilities.

3.3.2 The research paradigm

From a thorough review of various philosophical approaches to assess health research, specifically the availability of public health services during humanitarian responses, critical realism was selected. This paradigm was chosen based on its dynamics, its consideration of the contexts, and its use of a variety of research approaches to adequately examine the topic under study. The historian and scientist, Thomas Kuhn, in his 1962 book, *The structure of scientific revolutions*, refers to a paradigm as a collection of interlinked philosophical assumptions (common to scientific communities) about the realities of the world (ontology) and conceptual frameworks of understanding the nature of the world (epistemology) (Maxwell 2012:224).

Paradigms refer to philosophical assumptions relating to principles, values, theories, beliefs and concepts that together can enable the researcher to gain a better understanding of the study topic (McEwen & Wills 2014:28). It is essential to ensure that the paradigm chosen fits one's assumptions, conceptual framework, research questions and methods (Maxwell 2012:224). Accordingly, the Research Council of Norway (2012:6) acknowledges the paradigm chosen as a direction that the researcher should follow as a principle to answer the research questions, while identifying workable solutions that could solve the research problems of the intended users of the findings. Apart from the descriptions of the nature of worldviews and the ways of knowing social realities, a paradigm provides methodological directions on how to investigate and find workable solutions to research problems based on the philosophical assumptions and the selected conceptual frameworks (McEwen & Wills 2014:500).

Critical realism emphasises contextual factors to better understand reality. For instance, public health services are complex, with multiple contextual factors that could easily

confuse the researcher's attempts to understand the topic under study if their interactions are not considered. For this study, the selected paradigm shaped the researcher's selection of the methodological approach. The paradigm helped the researcher to design an approach that appropriately addressed the research questions and aims. The findings informed the development of the needs-based public health service protocol for humanitarian emergency responses in Gambella, Ethiopia.

As Pawson, Greenhalgh, Harvey and Walshe (2004:4) note, the most obvious working principle of good science entails utilising methods that are appropriate to the subject matter under investigation. The strategy of critical realism was used as a guiding principle to understand public health service requirements in emergency responses. The researcher focused on how a mixture of quantitative and qualitative approaches could build their collective complementary strengths to get a full picture of complex public health services.

3.4 RESEARCH METHODS

3.4.1 Study population

According to the CDC, the population is defined as the elements or parts of research participants from whom the results of the study are generalised (2011:96). The study population refers as an essential component of the survey; it should be properly identified and defined in terms of population size, characteristics and categories, to avoid inclusion of non-relevant elements (Umar & Wadugu 2015:51). The population for this study was all functional health facilities providing public health services in Gambella Regional State.

3.4.2 The target population

For quantitative data collection phase, an assessment of the availability of public health services in humanitarian responses was conducted in all functional public health facilities in Gambella Regional State. Gambella RHB provided a comprehensive list of hospitals and public health centres that offer specific public health services in the districts of Anywaa, Majang and Nuer Zones, and in Gambella city administration. The regional, zonal and district health managers were the target population for the qualitative component of this study. Neuman (2014:252) concretely defines the target population as

the specific population of interest chosen from total cases or groups, from whom results are obtained to represent the largest groups or cases.

The details of the 28 health centres and four hospitals included in the assessment are listed in the tables below.

Table 3.1 Public health facilities in Anywaa Zone

Location	District	Name of health facility	Remark
Anywaa Zone	Abobo	Abobo health centre	One primary hospital and 12 health centres in five districts
		Ukuna health centre	
		Pukedi health centre	
		Mender 8/9 health centre	
	Gog	Gog Dipach health centre	
		Pinyudo primary hospital	
		Puchalla health centre	
	Gambella	Abol health centre	
		Bonga health centre	
	Dimma	Dimma town health centre	
		Koy health centre	
		Achanya health centre	
Jor	Ognogi health centre		
Total functional health facilities included in Anywaa Zone			13

Table 3.2 Public health facilities in Majang and Nuer Zones

Zone	District	Name of health facility	Remark
Majang Zone	Godere	Metti health centre	Four health centres and one primary hospital in two districts in Majang Zone
		Dunchay health centre	
	Mengeshi	Godere mission health centre	
		Kumi primary hospital	
		Fejeji health centre	
Total functional health facilities included in Majang Zone			5
Nuer Zone	Wanthoa	Yoakwuol health centre	Eight health centres and one primary hospital in four out five districts in Nuer Zone
		Matar health centre	
	Makuey	Nyinenyang primary hospital	
		Gier health centre	
		Koat-Gaar health centre	
	Jiokow	Kuachthiang health centre	
		Nguang-kea health centre	
	Lare	Kuergeng health centre	
Kuernyaguich health centre			
Total functional health facilities included in Nuer Zone			9

Table 3.3 Public health facilities included in Itang special district and Gambella town

Location	District/Town	Name of HF	Remark
Itang	Itang special district	Itang health centre	Three health centres in Itang special district
		Elia health centre	
		Baziel health centre	
Gambella	Gambella town	Gambella general hospital (referral hospital)	One general hospital and one health centre in Gambella town
		Gambella health centre	
Total functional health facilities included in Itang special district, and in Gambella town			5

3.4.3 Eligibility criteria

The study population was all functional health facilities providing public health services during humanitarian crises in Gambella Regional State.

Exclusion criteria: Since humanitarian health emergency services are provided at primary health care levels and above, health posts were not included in the study. Private clinics and pharmacies were also excluded from the study, since the public-private mix is not yet implemented in the region.

3.4.4 Sample size

For the quantitative phase, all functional health facilities providing public health services in Gambella Regional State were the included sample size. The sample size was a total of 32 **health facilities** as listed in Table 3.4.

For the qualitative phase, a non-probability sampling approach using purposive sampling was chosen. Seventeen health workers who were employed as service providers and at the programme level, were included. These workers were chosen so that they could answer questions regarding the availability of public health services for humanitarian responses in Ethiopia.

Table 3.4 Type of public health facilities included in the survey

Public health facility	Total number of health facilities	Included	Remark
Referral hospital	1	1	Existing only at the regional level
Primary hospitals	3	3	In all the three zones
Health centres	28	28	Across the 12 districts and Gambella town
Total	32	32	

3.4.5 Sampling techniques

According to Wisdom and Creswell (2013:1), sampling decisions for a mixed-method approach require proper planning, with detailed descriptions of the steps undertaken during the study process, and a complete explanation of the sampling used for quantitative and qualitative data collections. Many studies do not clearly identify or provide the rationale for sampling procedures, but this is vital when using a mixed-methods approach (Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood 2015:10).

Quantitative phase: The study employed a non-probability sampling approach using the convenience sampling technique to select functional health centres and hospitals in Gambella Regional State as a sample. All functional health centres were selected during the study period, mainly due to the availability of the small number of health facilities in Gambella. Etikan, Mussa and Alkasim (2016:2) refer to convenience sampling as non-random sampling methods, where the available target population meets certain practical criteria included for the purpose of the study.

Qualitative phase: Purposive sampling, also called the non-probability sampling approach, was used for the selection of study participants for the qualitative phase. The purposive sampling design depends on the researcher's thoughts on where and how best to collect the required data to answer the research questions and meet the study's purpose (Etikan & Bala 2017:1). Non-probability sampling, according to Etikan and Bala (2017:1), refers to a selection where parts of the study population have no equal chance of being selected for participation. The selection of the participants was based on their availability to participate during the data collection period.

Moreover, the researcher purposively selected the public health centres and hospitals in the Gambella region based on research questions and purposes. The selection was made to examine and determine the public health facilities' capacities to provide public health in emergency responses, especially during humanitarian crises during the study period.

3.4.6 Data collection

3.4.6.1 Data collection approach and methods

For this study, quantitative and qualitative data were collected in parallel. The data described and explored the capacity of health facilities to offer public health services in humanitarian responses. The parallel collection of quantitative and qualitative data helped the researcher not only to triangulate data, but also to compare different but complementary data. Creswell (2014:219) states that while quantitative results can be compared with qualitative findings for the purposes of justification and validation, the use of two data strands complements each other.

The public health facilities' capacities were assessed using health facility checklists adopted from WHO questionnaires. The researcher aimed to explore the presence or absence of required resources and public health services for humanitarian responses. Document reviews of the disease profiles that are of public health importance were also undertaken to examine the health facilities' capacity to properly manage recorded data and determine the presence of completed data sources. Moreover, face-to-face interviews were conducted from July 2018 to August 2018 – using a semi-structured questionnaire – concurrently with quantitative data collection. The participants were all health managers. The researcher intended to gain an understanding of the context and identify the humanitarian needs and responses to these needs that had taken place in the recent past.

3.4.6.2 Development and piloting of the data collection instruments

3.4.6.2.1 Development of instruments for data collection

The researcher prepared the health facility checklist and interview guide for the collection of research data using the mixed-method approach. The tools captured the required

information on general health service availability, and the need for health service provision in humanitarian responses in Gambella, Ethiopia. Document reviews of recording and reporting sources were also carried out to address the completeness and timeliness of the reports using the same data collection instruments. Likewise, face-to-face interviews were administered to collect public health service information regarding public health needs in emergencies and responses. The designed and adopted questionnaire from the WHO was used to gather data. The ECDC (2015:12) acknowledges the use of mixed methods as the best approach for data collection. It helps researchers to collect rich data on the study topic and allows more flexibility for researchers to collect data.

For quantitative data collection phase, health facility checklists were administered to assess the availability of required resources and public health services. Using the same checklists, document reviews were also undertaken through the selected respondents in the health facilities.

For qualitative data collection phase, face-to-face interviews using interview guide (Appendix E, 1.3) were conducted with health managers in the state, zonal health departments, and with district health managers who were identified as participants. The semi-structured interview is the most commonly used tool for data collection due to its usefulness and flexibility (Kallio, Pietilä, Johnson & Kangasniemi 2016:2).

3.4.6.2.2 Piloting of research instruments

Piloting the research instruments was done as a learning exercise to assess their efficacy for collecting accurate quantitative data and qualitative information. Piloting an instrument helps in refining questions. There were duplicate questions in both the health facility questionnaires and semi-structured questionnaires, and some questions were found to be difficult to answer. Duplicate questions and overly ambiguous ones were removed, as were leading questions and time-consuming ones. Based on the corrections made after piloting, the refined and improved tools were used consistently during the data collection periods.

3.4.6.3 Characteristics of data collection instruments

For the current study, a convergent mixed-method approach informed the selection procedures. Informed by literature, the researcher developed a data collection tool which had two parts. Part one was a questionnaire which was used to collect data from heads of facilities during the quantitative phase, and a part two was an interview guide used to collect data during the qualitative phase.

The questionnaire was used for data collection for the quantitative phase and focused on the assessment of the availability of required resources and services in four hospitals and 28 health centres in Gambella (Appendix E). While the researcher used observations, he also performed document reviews using the health facilities' checklist and protocols.

Qualitative data were collected through the use of an interview guide which formed of part two of the data collection tool (Appendix E). Face-to-face interviews were conducted with the health experts working on health programmes at different levels who were purposively selected for the qualitative phase. These included one expert from the Gambella RHB, three experts from three zonal health departments, and 12 participants from 12 districts, and the city administration of Gambella.

The participants/health experts gave their input on the challenges and lessons learned in the provision of health services in a humanitarian crisis. The participants were senior health workers working on different health programmes. All the interviews were conducted in English, both at the facilities and at the programme level. This was feasible because all the instructional media from junior to the university level are in English. While English is a second language in the country, it dominates the academics' teaching and learning processes. Furthermore, the researcher formulated and triangulated the questions into various themes, categories and sub-categories.

3.4.6.4 Process of data collection

Yin (2014:113) recommends that for case studies on the affairs and actions of human beings, interviews are a vital procedure for data collection. For this study, a total of 49 health managers and experts from different health institutions were interviewed to explore and describe the current health emergency responses in the region. The participants included: one public health emergency head of the RHB; three health department heads

from three zones; four medical directors from four hospitals; 12 district health managers, one from Gambella city health office; and 28 health centre heads.

Data on the availability of public health services and required resources were further sourced from heads of facilities via a facility questionnaire. Personal background questions, such as service experience and humanitarian emergency experience, qualifications, age, and gender were determined using data collection protocols, checklists and semi-structured questionnaires. The interviews and other data collection processes were started after obtaining ethical clearance from the Department Higher Degrees Committee at the University of South Africa (UNISA). For the current study, all the research participants were selected using a non-probability purposive approach.

As has been noted, data collection should include systematic reviews of relevant data to verify institutional capacity for data management (Yin 2014:107). For the current study, reviewed data included quarterly reports of health services delivered from January to June 2018. Reviews were also conducted of reports produced every six months in the health facilities, specifically health management information system reports on ANC, delivery, immunisation, HIV/AIDS, malaria, and TB prevention and controls.

3.4.7 Data analysis

The collected data were organised into codes, classified into different themes, categorised and sub-categorised. The data were then tabulated and summarised based on key findings observed during the study. According to the CDC (2011:75), data analysis is the systematic process of changing raw data into scientific evidence. In this study, the data analysis helped the researcher to not only better understand the results, but also relate the findings to similar studies conducted on the research topic. The data analysis is described below.

Analysis of quantitative data (Quantitative phase): SPSS version 24 was used to analyse the availability of public health services in humanitarian responses in Gambella, Ethiopia. The analysis of the collected data took place from October 2018 to December 2018. According to Rubin and Babbie (2016:505), the analysis of quantitative data refers to statistical techniques used by the researcher to translate raw data into numbers and percentages. In addition, Bhattacharjee (2012:119) refers to descriptive analysis as a

statistical description, aggregation, and presentation of the constructs of interest or associations between constructs. For this study, descriptive statistical analysis was done using frequency distribution tables and graphs that present the numbers and percentages of observations.

Analysis of qualitative information (Qualitative phase): The analysis centred on transcripts of qualitative evidence gathered during the face-to-face interviews with research participants. The analysis involved Colaizzi's seven steps: First, reading and revisiting the transcribed notes for a better understanding of the complete contents; second, extracting essential elements from participants' statements; third, formulating senses of ideas into meaningful concepts; fourth, organising the formulated statements into themes, categories and sub-categories; fifth, mixing the key findings into in-depth descriptions of situations; sixth, detailing descriptions of the important structures of the phenomenon; seventh, validating the research findings with the research participants (Shosha 2012:33). In this study, the researcher used ATLAS.ti, which entailed identifying and providing a comprehensive understanding of public health needs in emergencies and humanitarian responses in Gambella, Ethiopia.

The data analysis and interpretation of quantitative and qualitative information were done separately. The researcher followed the process framework, starting by creating common codes, themes, categories and sub-categories, as illustrated in Figure 3.1. The presentation of the research results included comparisons of the findings for quantitative and qualitative results to seek convergent results, with the aim of developing a needs-based public health service protocol for humanitarian emergency responses in Gambella, Ethiopia. The researcher abstracted the key findings from the quantitative and qualitative portions of the study. Then, moving from quantitative results to qualitative results, the related elements that both phases identified as having significant contributions to the availability of public health services were re-described.

Despite the complexity of conducting a mixed-method study, the collected data helped the researcher to analyse the availability of the required resources for public health service provision during humanitarian responses.

The participants were advised that should they wish to access the findings, these would be made available to them at the end of the study. Figure 3.1 illustrates how the researcher conducted the data analysis.

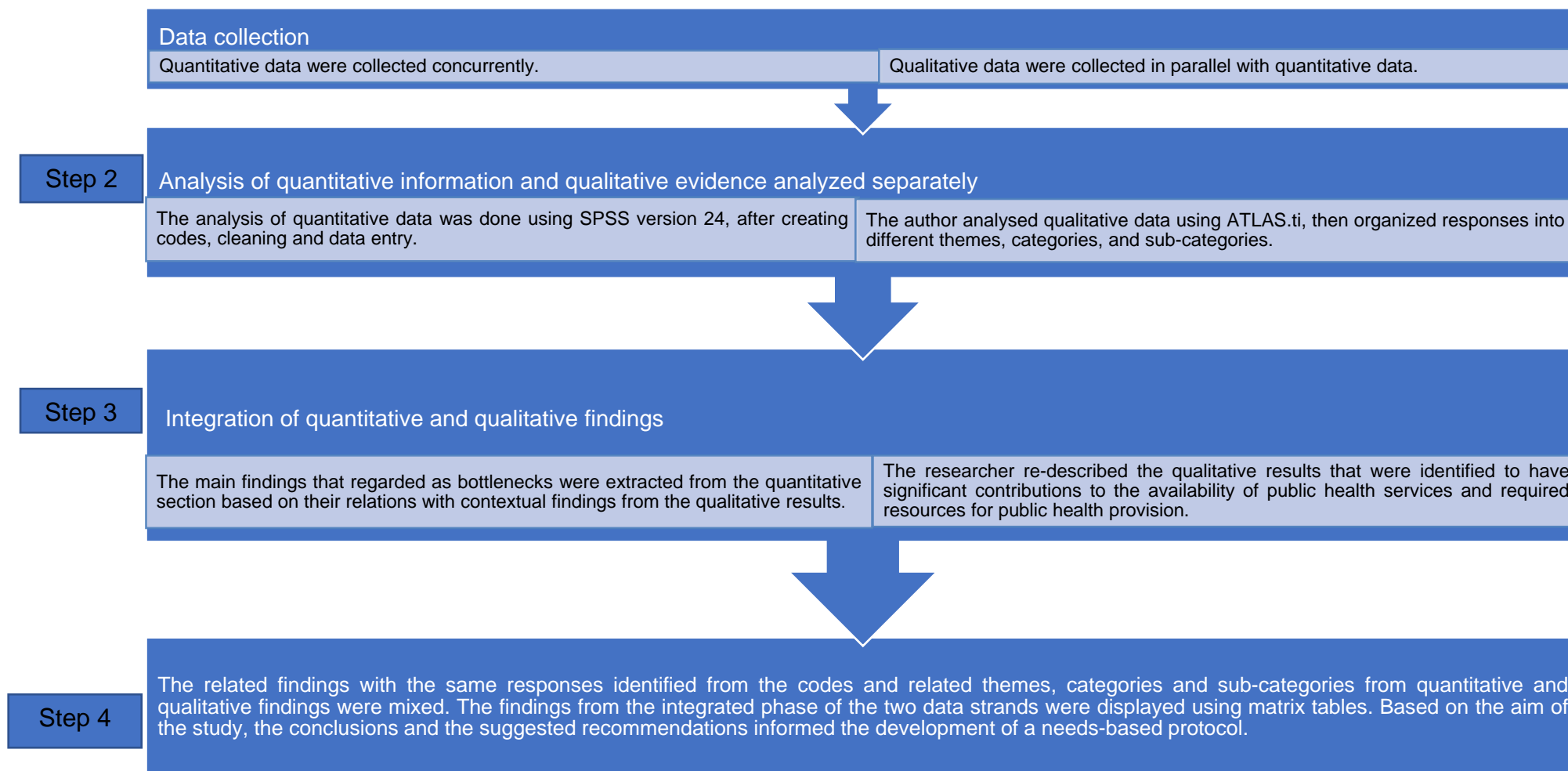


Figure 3.1 Concurrent steps followed in the data analysis process

3.5 TRUSTWORTHINESS

Athanasou, Elias, Gitchel, Difabio, Ferrera, McMahon, Malindi, Perry, Nieuwenhuis, Seabi, Pretorius, Watson, Theron and Sklar (2012:140) define 'trustworthiness' as a process that involves gathering, organising, sorting and categorising collected data. Further, Lincoln and Guba (1985) cite Du Plooy-Cilliers, Bezuidenhout and Davis (2012:258), describing trustworthiness in terms of confirmability, dependability, credibility and transferability. In addition, Polit and Beck (2012:584) refer to Lincoln and Guba (1994) who added a fifth criterion – authenticity. All these aspects are described next as they were applied in this study.

3.5.1 Authenticity

According to Polit and Beck (2012:585), authenticity explains the degree to which the investigator impartially and honestly demonstrates ranges of reality. The researcher strove to maintain authenticity by not translating some of the local words or slang words used into English. The researcher further espoused to capture all emotions as they were expressed.

3.5.2 Credibility

Credibility is described as the precise interpretation of collected data on the topic being studied (Du Plooy-Cilliers et al 2012:258). According to Holloway (2005:290), credibility entails a reality check where the author is convinced that the results of the research describe the research topic under study. In this study, the credibility of the findings was based on the use of purposive sampling to ensure that only those participants who had first-hand knowledge of the phenomenon under investigation became primary informants. In addition to recording, the researcher also took notes to enhance credibility. Note-taking reflects indications of non-verbal responses, such as shaking the head. Quotes accompanied the data analysis to further enhance the credibility of the research. The researcher is convinced that the mixed-method results in the interpretation phase addressed the research questions.

3.5.3 Confirmability

According to Brink, Van der Walt and Van Rensburg (2012:127), confirmability describes the process through which the collected and analysed data correspond to the research findings, are compatible with the proposed recommendations, and inform the research conclusions. Debriefing sessions were conducted during the data collection to ensure that the participants' responses were captured correctly. The researcher confirmed that the harmonisation of results from the data analysis portions consistently related to other parts of the study.

3.5.4 Dependability

According to Athanasou et al (2012:140), who cite Goetz and LeCompte (1984), dependability refers to the consistent use of research methods over the entire period of the study. The aims of the research informed the consistent use of the research questions, thus ensuring the dependability in the current study. For the quantitative phase, the case study protocol that was adopted and developed by the researcher was consistently employed for all health facilities in the study as a roadmap for the data collection procedure. Detailed notes and information about each health facility were maintained and analysed. Furthermore, the exercise offered the researcher an opportunity to interact with the participants to address research questions, as the process took between 2 to 3.5 hours to complete at each health facility.

For the qualitative phase, the researcher was constantly aware that his position could influence the responses given, and he therefore tried to practice reflexivity (striving to maintain objectivity). Some participants felt pressurised to give appropriate or correct answers; in response, the researcher kept reminding them that it was not a test but rather, what was most valuable, was their honest input. Participants' responses were captured without alterations.

3.5.5 Transferability

According to Polit and Beck (2012:585), transferability describes the potential for inference and utilisation of the study findings in other locations of similar contexts. In the current study, the researcher gave a clear exposition of the study to respondents and

participants. Thorough descriptions of the methodology and analysis of data were provided to enable transferability to other settings.

3.6 ETHICAL CONSIDERATIONS

To obtain clearance, the researcher submitted a research proposal to the UNISA Departmental Higher Degrees Committee, who subsequently issued the researcher an ethical clearance letter for data collection (Appendix A). After getting the letter of approval to carry out the proposed research at hospitals and health centres, the researcher applied to Gambella RHB for approval (Appendix B), who in turn granted an approval letter (Appendix C), and the data collection was cleared to take place. In the letter, the researcher stated his field of study, the research topic, the intended site of data collection, the purpose of research, and the data collection process (Appendix D). The researcher attached the research proposal and the UNISA ethical clearance to this letter.

The agreed inclusion criteria were observed during the selection and recruitment of the participants who took part in the research. Meetings were arranged with the relevant individuals involved in the study to explain that the purpose of the research was to assess the availability of public health services in humanitarian responses in Gambella, Ethiopia. The aim and objectives of the study were also explained. The supportive documents presented during the data collection included: the approved research proposal, UNISA's ethical clearance letter to conduct the study, and the application letter to Gambella Regional Health Bureau (GRHB) requesting permission to conduct the study, and the approval letter in response. After the overview of the study was explained to the participants, it was also clarified that participation was completely voluntary, that no compensation would be paid, and there would be no benefits to participants as an incentive for their participation.

Each selected participant was asked for their willingness to take part in the study. All the individuals who participated signed consent forms (Appendix D). Nevertheless, participants were also assured that individual rights would be respected should they decide not to participate in the study. It was also explained to the study population that they had to ask for clarification on any points or questions related to the research topic.

It was also explained to the participants that those who were not willing to participate had the right to withdraw. Participants were further advised that their names would not be disclosed, and they were assured that the information obtained would not be accessible to anyone other than the researcher. An electronic copy of the data was kept in multiple places with backups, and was password-protected, even after the final report was completed.

3.7 CONCLUSION

This chapter described the research design and the method used to conduct the study. A convergent mixed-methods approach using the case study design was used and the research procedures of both the quantitative and qualitative phases were described. The study population, sampling, sampling techniques, data collection, data analysis, validity and reliability, the development of and piloting of the data collection instruments, and the data collection procedures were also addressed. The chapter then described how trustworthiness of the measurement instruments was assured, as well as the ethical considerations adhered to in the study. Scientific integrity, dissemination of results, and the scope and limitations of the study were also briefly described.

The next chapter presents and discusses the quantitative and qualitative results of the research.

CHAPTER 4

ANALYSIS, PRESENTATION AND DISCUSSION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

This chapter presents the results and discusses the findings of the study. The results are presented in two main sections. The first section reflects the sample demographics, and the research findings are offered in the second section and mainly covers the availability of public health services during humanitarian responses in Ethiopia. However, data management is discussed before the main research findings, which are presented in such a way that they are linked to the achievement of the study objectives:

- Explore and describe the availability of public health services and resources required for humanitarian emergency responses.
- Explore and identify current humanitarian emergency health needs and responses.
- Study and critically analyse different humanitarian responses in respect of health care services and the related protocols.
- Develop a public health service protocol for humanitarian emergency responses in Ethiopia – such a protocol must be context- and needs-based.
- Clarify the policy and programme implications of such a protocol.

The first and second objectives are addressed in this chapter, while the third objective was addressed in the literature review in Chapter 2. The fourth and fifth objectives will be covered in the remaining chapter.

It has already been mentioned in Chapter 3 that the concurrent mixed-methods approach using a case study design was employed in this study to achieve the study objectives. The analysis of the results will be presented using graphs, tables and text in two sections.

4.2 DATA MANAGEMENT AND ANALYSIS

4.2.1 Data management

Quantitative and qualitative data were collected to study and assess the availability of public health services in humanitarian responses in Ethiopia. The data centred on FP, ANC, intrapartum care or care provided during labour and birth for women and neonates, immunisation, and child health services. Data on disease profiles of public health importance, such as malaria, TB, STIs, the prevention and control of HIV/AIDS, and basic surgical and blood transfusion services, were also collected.

Similar data collection methods were applied to health facilities' readiness to offer public health services and on the availability or absence of medications, infrastructure, basic equipment, and diagnostic capacities of health facilities. Moreover, data were obtained on supervision conducted in the last three months of the data collection period. The researcher checked the collected data for accuracy, completeness and clarity. The study's data and the files created from the data were kept on the researcher's computer and were protected with a password.

Following the university's data management policy, the researcher will keep the collected data for five years after the publication of the findings. After five years, the retained data will be deleted, subject to the approval of the university, and as long as there is no demand for prolonged retention of the data.

4.2.2 Data analysis

Data were analysed using appropriate analysis methods, depending on the type, as described in detail below. Quantitative data analysis is described first, followed by qualitative data analysis.

4.2.2.1 Data analysis quantitative phase

SPSS software version 24 was used in consultation with a biostatistician to assess the availability of public health services in humanitarian responses in Gambella, Ethiopia. Descriptive statistics were used to summarise the basic features of the data.

4.2.2.2 Data analysis qualitative phase

The qualitative data were analysed thematically with the help of Colaizzi's analysis framework. The qualitative presentations and discussions mainly focused on identifying current humanitarian needs and responses. This entailed the reading and re-reading of the transcripts to ensure familiarisation with the data; identifying significant statements and phrases; formulating meanings from these statements; identifying themes and sub-themes; and describing the phenomenon under study in detail.

4.3 RESEARCH FINDINGS

4.3.1 Sample demographics

This section elaborates on the characteristics of the research respondents and participants who participated in both the quantitative and qualitative phases. It also describes the characteristics of the health facilities under study.

4.3.1.1 Characteristics of respondents and participants

In this sub-section, the qualifications and experiences of the research respondents and participants are elaborated upon. The profile of the respondents in the quantitative phase is presented first, followed by the profile of the participants in the qualitative phase. In this regard the study focused on the qualifications and experience of the research respondents and participants Table 4.1 below depicts the profile of the health workers in the assessed health facilities in Gambella.

Table 4.1 Profile of health workers in the assessed health facilities in Gambella, Ethiopia (N=32)

Qualifications of health workers	Experience in health facilities			Total
	1-2 years	3-5 years	>5 years	
Bachelor's degree (BSc)	29	0	0	29
Master's degree (MSc)	2	0	1	3
Total	31	0	1	32

Table 4.1 reveals that the majority (29) of the health workers in the study possessed a bachelor's degree (BSc), while the other three were master's (MSc) degree holders. In terms of experience, 31 respondents had relevant experience ranging from one to two years of practice in public health facilities. Of the three master's degree holders, one was a senior, long-serving staff member with more than five years of service in the facility. The other two had between one- and two-years' experience working in health care delivery facilities.

With regard to the qualitative phase, data was collected through face-to-face interviews with 17 participants who represented the state, districts and zones in Gambella. Twelve participants possessed a bachelor's degree; five held master's degrees in addition to a bachelor's degree. The study found that, in their respective workplaces, eight interviewees had between three- and five-years' experience; five had between one- and two-years' experience; and four had more than five years of experience.

4.3.1.2 Types of assessed health facilities

The different types of facilities – composed of hospitals and public health centres that were assessed in terms of the availability of public health services in humanitarian responses in Gambella, Ethiopia – are discussed below. These are depicted in Table 4.2.

Table 4.2 Types of assessed health facilities across the districts of Gambella, Ethiopia (N=32)

Name of district (Woreda) or city administration	Type of health facilities assessed			Total
	Health centre	General hospital	Primary hospital	
Abobo District	4	0	0	4
Dimma District	3	0	0	3
Gambella City Administration	1	1	0	2
Gambella District	2	0	0	2
Godere District	2	0	0	2
Gog Woreda	2	0	1	3
Itang Special Woreda	3	0	0	3
Jiokow Woreda	2	0	0	2
Jor District	1	0	0	1
Lare District	2	0	0	2
Makuey District	2	0	1	3
Mengeshi District	2	0	1	3
Wanthoa District	2	0	0	2
Total	28	1	3	32

Table 4.2 shows that of the 32 health facilities that were assessed, 28 were health centres, three were primary hospitals, and only one was a general hospital. All assessed facilities were in the 12 districts (*woredas*) and one city administration of the Gambella Regional State, also called Gambella. Regarding the composition of public health facilities, Abobo District had the highest number of health facilities (four health centres) compared to Jor District, which had only one health centre. Furthermore, three primary hospitals included in the study were located in three districts, namely, Gog, Makuey and Mengeshi, from three ethnic zonal administrations. The only general hospital included in this study was Gambella General Hospital, which is in Gambella city.

4.3.2 Availability of public health services in humanitarian responses in Ethiopia

4.3.2.1 Availability of public health services and required resources

This sub-section explores and describes the availability of public health services required for humanitarian responses; that is, objective 2 of the study. The public health services required for humanitarian responses, including the required resources for health facilities' readiness, are described in detail. SPSS version 24 was used to analyse data collected on public health services for the quantitative phase. The data were supplemented by document reviews to ensure completeness of the facility reports.

Public health facilities were assessed on the availability of public health services, such as FP services, ANC, intrapartum care or delivery services, immunisation, child health services, a malaria programme, and TB service provisions. The availability of service related to prevention and the control of HIV/AIDS was assessed in all 32 public health facilities in the study (28 health centres and four hospitals). The assessment was carried out by observing non-expired essential medicines, laboratory services, and the presence of other health commodities in the facilities. Facilities were further assessed for the presence or absence of medical supplies and the availability of continuous programme monitoring, which addresses gaps in service provision and has the potential to improve services through supportive supervision.

In addition, the researcher assessed the availability of infrastructure in the facilities to ensure these were enabling environments that provide comprehensive health services. These included an assessment of the availability of communication systems, electricity

(from any source in the facility), transportation to ensure referral linkages during emergencies, and routine service provision. Other services were also assessed, such as basic surgery and blood transfusion.

4.3.2.1.1 Availability of maternal, new-born, child and adolescent health services

The assessment covered the availability of maternal health, new-born, all under-five and related health services, as well as services provided to adolescents, in the facilities. These included the availability of FP services, ANC services, care during delivery or intrapartum care, comprehensive obstetric care (CEmOC) to neonates and mothers, immunisation, child health, and adolescent health. Dean, Lassi, Imam and Bhutta (2014:5) highlight that a continuum of care, even before pregnancy, has an overall benefit in improving the health outcomes of family members, neonates, children and mothers.

- **Availability of contraceptive methods and resources for family planning service functionality**

Despite the 100% availability of FP services in the assessed public health facilities, it was noted that there was a shortage of health workers trained in the provision of such services. The data indicated that only 59% of facilities offered contraceptive methods with trained health workers, while guidelines on FP service provision were not available in 62% of the facilities.

Regarding FP commodities and equipment, the study found that injectable contraceptives and combined oestrogen-progestin oral contraceptive pills were observed in 87% of the facilities. Moreover, the blood pressure apparatus was the most commonly available item, which was found in 97% of the facilities (see Table 4.3).

As noted above, the availability of contraceptive methods and guidelines on FP service provision was observed in 59% and 62% of facilities, respectively. This is comparable to the findings of 10 African countries that were assessed on the functionality of FP services. The findings from that study showed that six countries had at least one worker in every health facility trained in FP, and five countries had guidelines in every facility (Ali, Farron, Ramachandran & Folz 2018:479).

Table 4.3 Percentage distribution and number of facilities with required resources for family planning services in Gambella, Ethiopia (N=32)

Zone	District	Family planning service (Number of facilities)					
		FP guidelines	Staff trained in FP	Blood pressure measurement	Oestrogen-progestin contraceptive pill combinations	Injectable contraceptives	Health facilities offer family planning services
Gambella City	Gambella City	2	2	2	2	2	2
Itang Special District	Itang Special District	0	2	3	3	3	3
Anywaa Zone	Gambella District	2	2	2	2	2	2
	Abobo District	1	1	4	3	3	4
	Dimma District	2	1	3	3	1	3
	Gog District	2	1	3	1	3	3
	Jor District	1	1	1	1	1	1
Nuer Zone	Makuey District	1	1	3	3	3	3
	Jiokow District	2	2	2	2	2	2
	Wanthoa District	1	1	2	2	2	2
	Lare District	2	2	2	2	2	2
Majang Zone	Godere District	2	2	2	2	1	2
	Mengeshi District	2	1	2	2	3	3
Number		20	19	31	28	28	32
Percentage (%)		62.5	59.37	96.87	87.5	87.5	100

Although injectable contraceptive methods were available in 87.5% of the health facilities in this study, the finding is lower compared to a study conducted to assess the availability of FP services in Uganda, where 92% of facilities offered contraceptive methods (Republic of Uganda Ministry of Health 2013:15). However, in this study, the availability of blood pressure apparatus was observed in 97% of health facilities, and this result is higher than the findings of a study conducted in the Democratic Republic of Congo to assess the accessibility of high-quality FP service provision, which showed that 85% of facilities had blood pressure apparatus (Mpunga, Lumbayi, Dikamba, Mwenbo, Ali, Mapantano & Wembodinga 2017:278).

- **Availability of antenatal care services**

The provision of tetanus vaccines and iron-folic acid supplements were the most widely available services in the assessed facilities, with 100% offering the vaccines and 87.5% offering the supplements, respectively.

Despite the availability of ANC services in the functional health facilities that were assessed, the study found only 63% of pregnant women were screened for pregnancy-related hypertension disorders during their ANC visits to health facilities. Misoprostol tablets for births that took place at home and the provision of malaria prophylaxis to pregnant mothers were observed to be unavailable in 34% and 50% of the assessed health facilities, respectively, all of which are in high malaria-endemic areas (see Figure 4.1).

As noted, the WHO recommends each pregnant woman should carry her own case notes for the improvement of the quality of care, continuity of ANC visits, and her pregnancy experience (WHO 2017j:8). The WHO suggests that health facilities should be assessed on their available resources for the provision of ANC. This includes the presence/absence of tetanus toxoid vaccinations and iron-folic acid supplements, monitoring of hypertensive pregnancy disorder, and intermittent preventive treatment in pregnancy for malaria, among others (WHO 2013d:80).

The data indicated that 50% of facilities provided malaria preventive treatments for women during their pregnancies. The findings also show that 62% of the facilities monitored pregnancy-related hypertension disorders. These findings are higher

compared to a study conducted in Uganda on the availability and capacity of facilities to offer the services. That study showed that 64% of health facilities had tetanus toxoid vaccinations, and 68% of health facilities had iron-folic acid supplements (Republic of Uganda Ministry of Health 2013:20).

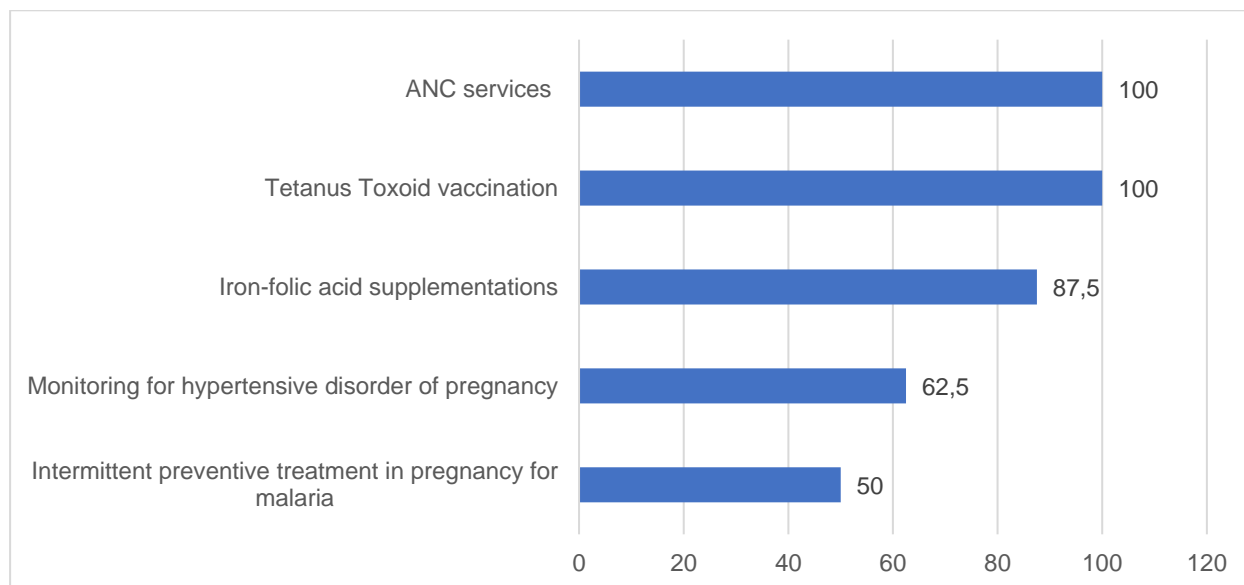


Figure 4.1 Percentage distribution of health facilities that offer antenatal care services in Gambella, Ethiopia (N=32)

- **Delivery service provision**

Despite the presence of intrapartum services in all assessed health facilities, only 18% of the total assessed health facilities had emergency transportation for referral services. In just 50% of Gambella’s public health facilities, delivery services are provided, skilled staff members have received training, and delivery guidelines are available. Oxytocin, blank partographs and examination lights were available in 68% of health facilities. Though most of the assessed health facilities had delivery equipment during the assessment, only 62% had vacuum aspirators. Neonatal resuscitation and basic emergency obstetric care were the most widely available services (both 96%), followed by parental administration of misoprostol (87%).

In terms of equipment, 96% of the assessed health facilities offered delivery with gloves (the most available commodity), and delivery beds and latex gloves were available in 93% of the facilities, as seen in Figure 4.2. The finding is similar to the study conducted in Malawi, where hospitals were generally well stocked with necessary equipment and

supplies in the maternity wards for normal and complicated deliveries. Delivery beds, sterile gloves, sharps containers, decontaminating solutions and water for hand washing were available in more than 90% of health facilities (Kozuki, Rasidi, Gupta, Mtimuni, Oseni, Rawlins, Sethi & Kachale 2017:4).

The findings in the current study compare favourably to a study conducted in Haiti, in which 68% of facilities had parenteral administration of oxytocin. The findings also indicate that the manual removal of the retained product, neonatal resuscitation, anticonvulsant, and manual vacuum extractors were found in 48%, 41%, 30% and 10% of facilities, respectively (Wenjuan, Winner, Burgert & Colston 2014:16).

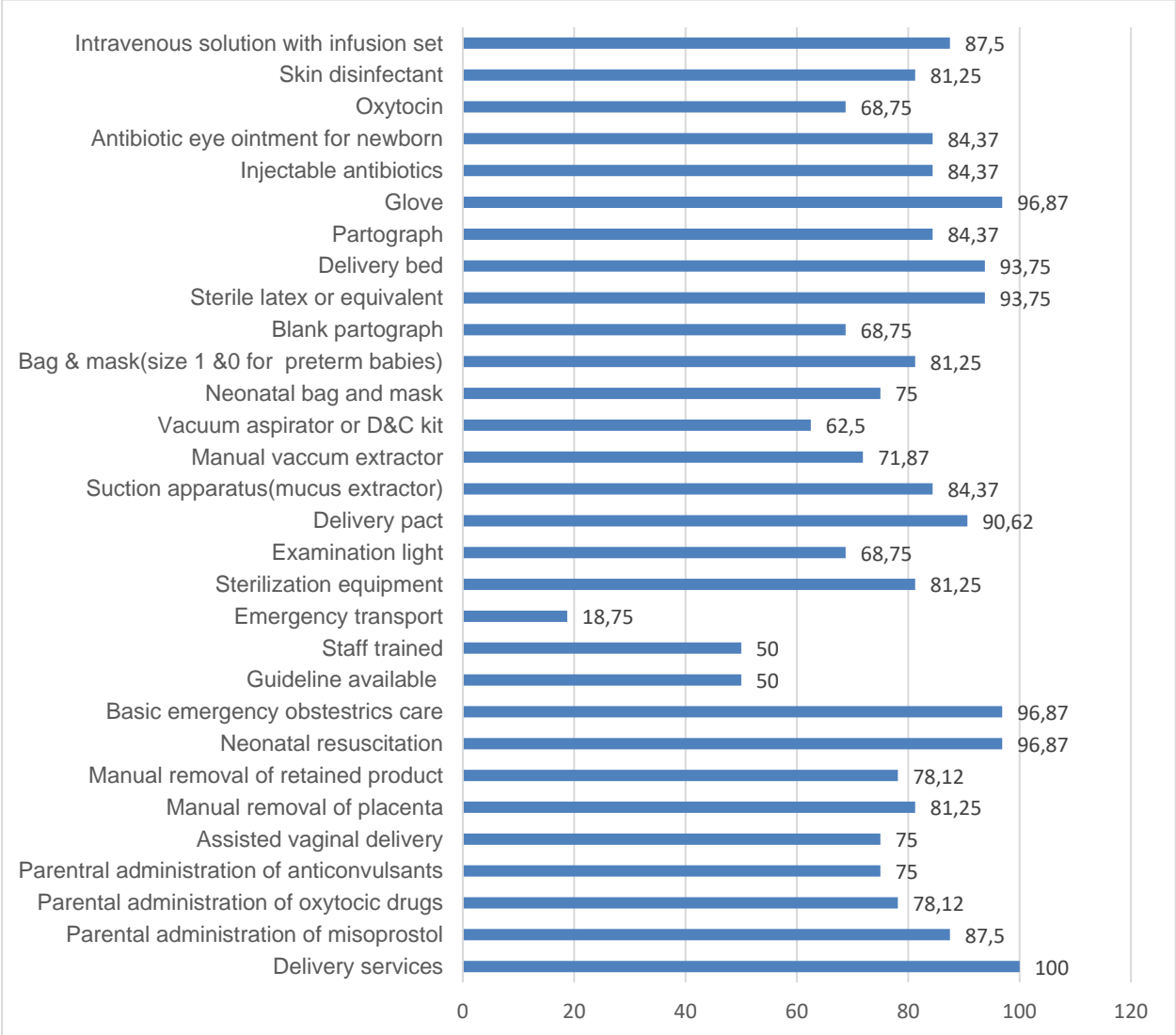


Figure 4.2 Percentage distribution of services offered in delivery care in health facilities in Gambella, Ethiopia (N=32)

- **Availability of comprehensive obstetric care services**

According to the WHO (2013d:82), a health facility can be classified as offering comprehensive obstetric care services if it functionally provides basic emergency obstetric and new-born care, and has the capacity to conduct surgical and blood transfusion services. The current study shows poor readiness among public health facilities to provide comprehensive obstetric care in Gambella, Ethiopia. The findings revealed that one referral hospital offered comprehensive obstetric care services, including caesarean sections and blood transfusions; another hospital offered comprehensive obstetric care services but offered no service for caesarean sections; the remaining two primary hospitals had no comprehensive obstetric care facilities. Lidocaine 5% and staff trained in comprehensive emergency obstetric care were available in Gambella General Hospital and Pinyudo Primary Hospital. Gambella General Hospital had staff trained in anaesthesia and obtained blood from the national or regional blood bank. Halothane (inhalation) and injectable epinephrine were available in 3% of facilities. None of the health facilities in the region had injectable atropine and ketamine, or thiopental and suxamethonium bromide powder (see Figure 4.3).

Some of these findings are consistent with a study conducted to assess service provision in Ethiopia, in which only 3% of facilities offered caesarean sections and blood transfusion services (EPHI, FMOH & ICF 2014:11). However, some of the findings of the current survey are lower compared to a study conducted in Madagascar on the presence of service provision. In that study, for example, 20% of the facilities had functional anaesthesia equipment (Ramiandrison, Bazant, Dao, Andriantsimietry, Favero, Gomez, Rakotomanga, Razakariasy & Rakotovao 2016:153) and in this study, 12% of facilities reported functional anaesthesia equipment.

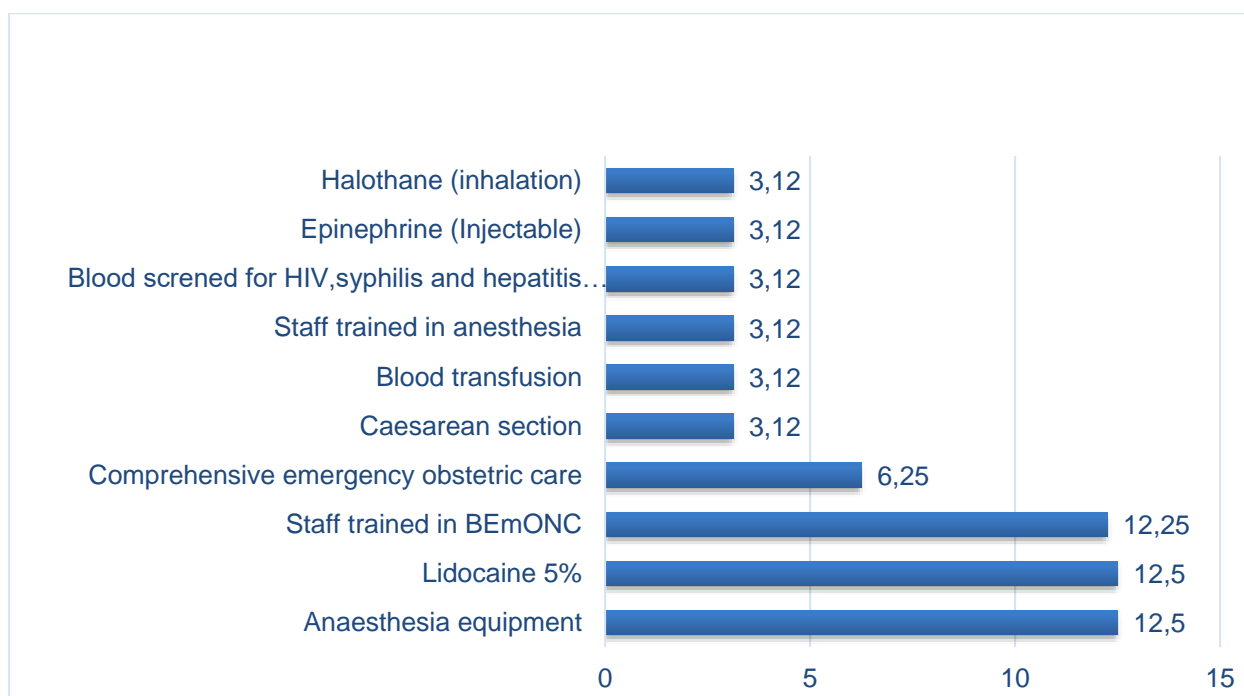


Figure 4.3 Percentage distribution of hospitals and lower-level facilities offering obstetric care services in Gambella, Ethiopia (N=32)

- **Availability of immunisation services**

The study found that routine immunisation for measles, pentavalent, polio, rotavirus and PCV was provided in all (100%) health facilities. However, despite the provision of immunisation services, less than half (47%) of the health facilities provided immunisation services using health workers trained in immunisation practices. In addition, the immunisation service guideline was seen to be available in only 65% of the health facilities.

In terms of vaccine availability, polio, rotavirus and pentavalent vaccines were 100% available in all assessed health facilities, followed by measles and BCG (in 96% of facilities) and PCV (in 93% of facilities). All health facilities had immunisation equipment, with direct solar devices and vaccine carriers, sharps containers, syringes, refrigerators, immunisation tally sheets and vaccination cards available in 97% of facilities (see Figure 4.4).

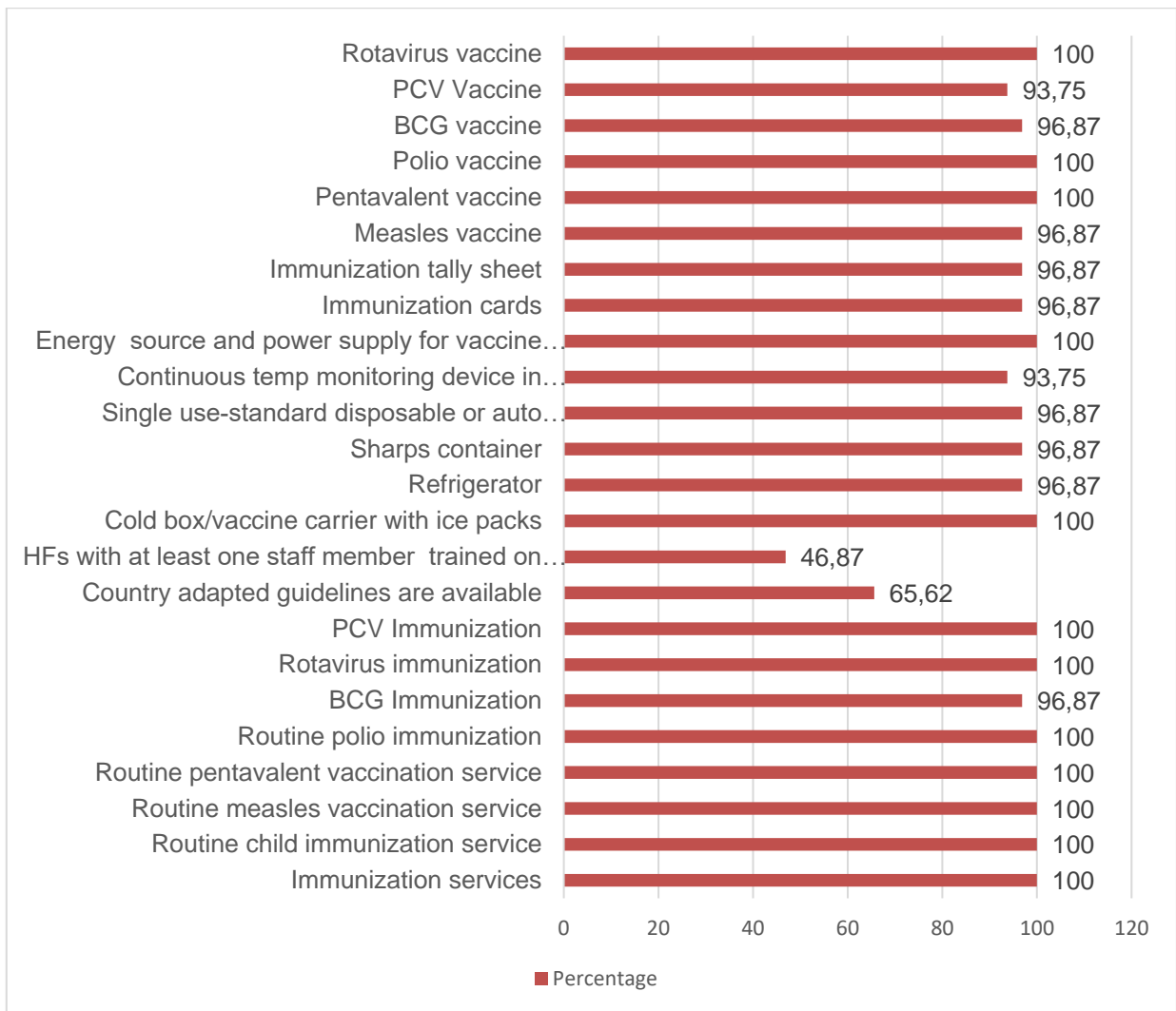


Figure 4.4 Percentage distribution of available immunisation services in health facilities in Gambella, Ethiopia (N=32)

An assessment done in Cameroon stated that though the availability of the guideline does not guarantee its use, it contributes to the improvement of expanded programme on immunisation (EPI) (Akoh, Atieudjieu, Nouetchognou, Yakum, Nembot, Sonkeng, Fopa & Watcho 2016:7). Not having the required immunisation resources could contribute to low immunisation coverage and, of course, could lead to an increase in morbidity and mortality related to vaccine-preventable diseases among women and children (WHO 2015e:2). In the current study, more than 50% of health facilities provided immunisation without health workers trained in EPI, and in more than 30% of facilities, no immunisation guideline was observed. This finding is lower compared to a study conducted on the delivery of EPI services in Cameroon, where 71% of facilities had immunisation guidelines (Akoh et al 2016:4).

Regarding the availability of health commodities required for the provision of immunisation services, most facilities had vaccines and EPI equipment. This compares favourably to an assessment of the readiness of primary health care facilities in Nigeria, where measles vaccines and diluents, oral polio, pentavalent, pneumococcal, BCG and hepatitis B vaccines were present in less than 15% of facilities (Oyekale 2017:5).

- **Availability of health service provisions to children**

Despite the acknowledged presence of health service provisions for children in all assessed facilities, the availability of vitamin A capsules and services, tests for parasites in schools, and a shortage of health workers trained in Integrated Management of New-born and Childhood illnesses (IMNCI) and Integrated Management Community Case Management (ICCM) were major gaps observed in the health facilities.

The study found that malaria diagnosis and treatment was the most widely available child health service. Malnutrition screening and treatment of pneumonia with amoxicillin and growth monitoring were the second and third most widely available services, in 96% and 75% of the health facilities, respectively.

Despite the availability of some services, other essential services for children were lacking. Inadequate provision of parasite tests for targeted children in schools (for deworming) and iron supplements were reported to be available in 46% and 68% of the assessed public health hospitals and health centres, respectively.

Amoxicillin was the most readily available medicine, followed by oral rehydration salts (ORS) and zinc supplementation, and mebendazole/albendazole, available in 96%, 90% and 84% of facilities, respectively. Some medication was less available; for example, vitamin A supplements, which are critical for children, were provided in only 43% of health facilities, compared to amoxicillin, which was available in 96% of the health facilities. Paracetamol for children and cotrimoxazole drugs were available in 71% of the health facilities.

Regarding medical equipment, stethoscopes and growth charts were the most readily available equipment in all health facilities, followed by thermometers and length/height

measuring equipment in 87% and 84%, respectively. Infant scales were the least available, present in only 78% of the health facilities, as shown in Figure 4.5.

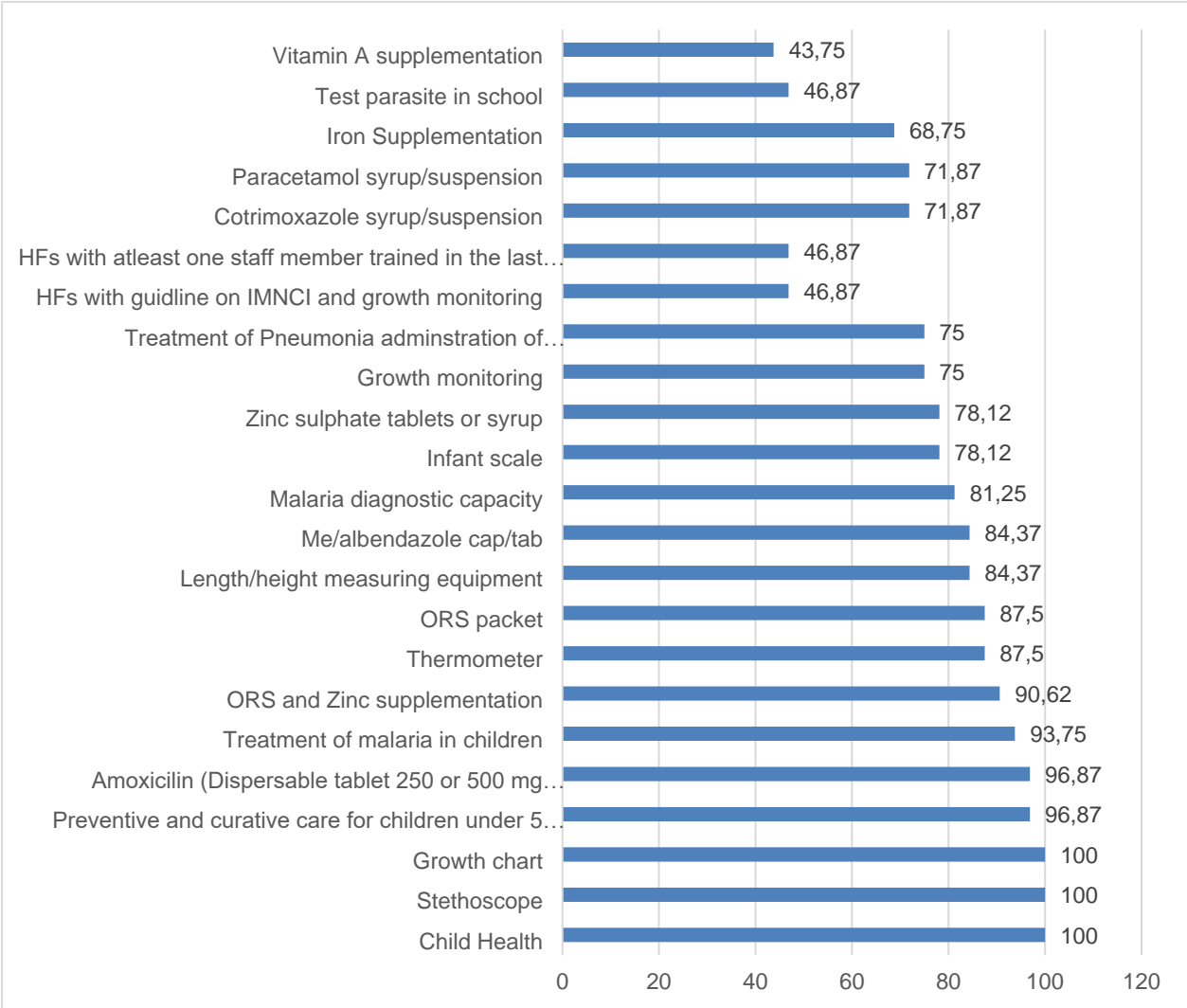


Figure 4.5 Percentage distribution of availability of commodities and services provided to children in health facilities in Gambella, Ethiopia (N=32)

Black and colleagues acknowledge that iron and zinc, as well as vitamins, are critical for the health of young children (Black, Laxminarayan, Temmerman & Walker 2016:245). In the current study, zinc tablets, ORS and amoxicillin (250 mg or 500 mg) were available in 78%, 87% and 96% of health facilities, respectively. This finding is dissimilar to the results of research conducted in the country to determine the availability of health commodities in Ethiopia, where 33%, 97% and none of the health facilities had zinc tablets, ORS and amoxicillin 250 mg, respectively (Getahun et al 2015:6). According to the CSA and ICF (2016a:124), although Ethiopia reached the MDG target of reducing the under-five mortality rate, more children are still dying. For instance, one child in 15 loses

their life before reaching their fifth birthday; one child in 21 loses their life before reaching their first birthday; and one in 35 children dies before reaching the age of one month.

- **Availability of adolescent health services**

This study found that 87% of facilities offered specific adolescent health services. The provision of oral contraceptive pills was reported in 78% of facilities, followed by the provision of male condoms in 75% of facilities. The findings also revealed that only 71% of the assessed public health facilities link ART services to adolescent health services. About 68% of the health facilities that provided HIV counselling and testing also provided condoms and other contraceptive methods to adolescents (see Table 4.4).

However, half of the assessed health facilities had no emergency oral contraceptives required for adolescent health services. The provision of intrauterine contraceptive devices (IUCDs) required for adolescent health services was also unavailable in more than 80% of facilities in Gambella.

The WHO not only recommends adolescent health services, but recommends specific services targeted at adolescents. For instance, health facilities should provide comprehensive reproductive health services along with voluntarily counselling and HIV testing. They should also provide FP services, and all forms of contraceptive methods, for the prevention of communicable diseases and unintended pregnancies (WHO 2013d:89).

Table 4.4 Percentage and number of health facilities providing adolescent health services in Gambella, Ethiopia (N=32)

Services	Number	Percentage (%)
Adolescent health services	28	87.50
Counselling services and HIV testing for adolescents	22	68.75
Provision of condoms and one other FP method for adolescents	22	68.75
Provision of combinations of oral contraceptive pills (OCP)	25	78.12
Provision of male condoms	24	75.00
Provision of emergency contraceptives pills	16	50.00
Provision of intrauterine contraceptives devices (IUCDs)	6	18.75
Provision of ART to adolescent HIV patients	23	71.87

- **Health workers trained in, and guidelines available on, health service provision to adolescent**

The public health facilities' capacity to provide adolescent health services was generally low, except for the HIV diagnostic test capacity in 78% of facilities. Yet despite the availability of HIV diagnosis, only 53% of facilities had staff members who received training on voluntary counselling and HIV testing, including care and support to chronic HIV patients in the two years prior to data collection. Similarly, the study found only 40% of facilities offered adolescent health services with staff members who received adolescent and FP training guidelines. The guideline on adolescent health was less available – observed in only 31% of the facilities (see Figure 4.6).

These findings compare favourably to those of a study conducted in Uganda on the availability of adolescent health services, where 37% of health facilities had staff members trained to provide FP services to adolescents, and 52% of health facilities had staff members trained to provide HIV/AIDS testing, counselling, care and support for adolescent, respectively (Republic of Uganda Ministry of Health 2013:51).

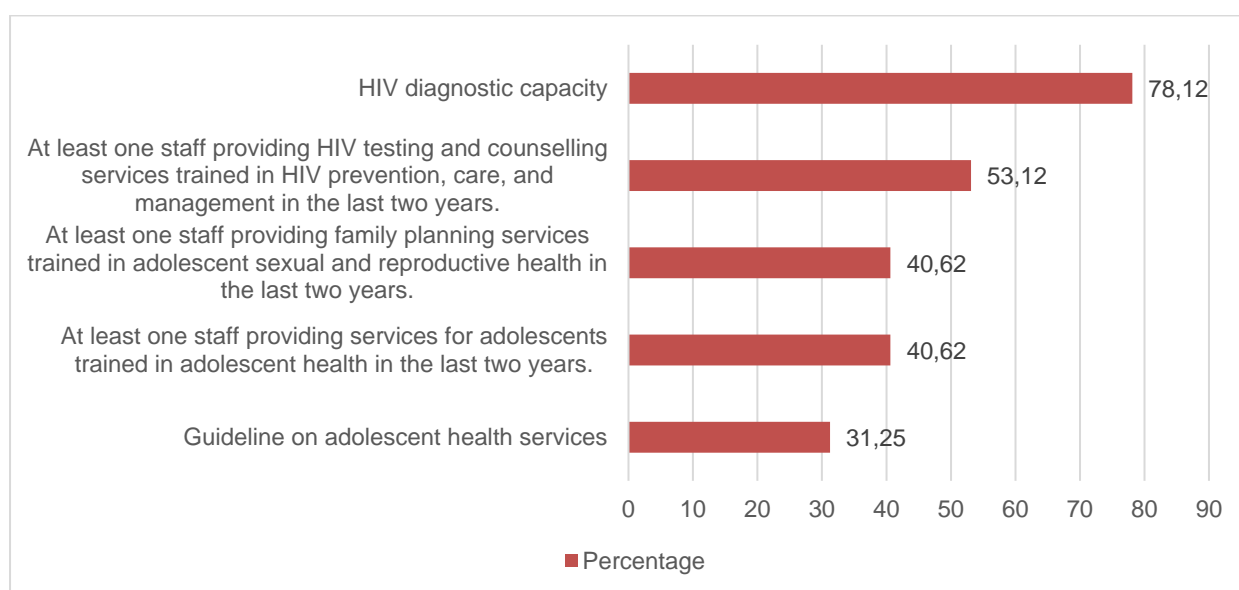


Figure 4.6 Percentage distribution of health facilities' capacity to offer adolescent health services in Gambella, Ethiopia (N=32)

Medicine and health commodities for adolescent health services: The availability of medicines was a particularly challenging issue for public health facilities. The study found that only five medicines were available in more than 50% of the health facilities.

Magnesium sulphate was the most widely available medication in 65% of facilities, followed by injectable ampicillin and gentamicin in 62% of facilities. Cefixime and misoprostol were the least available drugs, as these were *not* found in nearly 80% of the assessed health facilities in Gambella (see Table 4.5).

Table 4.5 Percentage distribution and number of available medicines for adolescent health services in health facilities in Gambella, Ethiopia (N=32)

Medicine	Number	Percentage (%)
Availability of oxytocin injectable	19	59.37
Presence of injected solutions of sodium chloride	17	53.12
Presence of injectable calcium glucose in the facility	14	43.75
Presence of magnesium sulphate in the facility	21	65.62
Presence of ampicillin injection in the facility	20	62.50
Presence of gentamicin injections in the facility	20	62.50
Presence of injectable metronidazole in the facility	13	40.62
Presence of misoprostol capsules and tablets in the facility	7	21.87
Presence of all forms of azithromycin in the facility	11	34.37
Presence of cefixime capsules and tablets in the facility	7	21.87
Presence of injectable benzathine benzylpenicillins in the facility	13	40.62
Presence of betamethasone or dexamethasone injections	6	18.75
Presence of nifedipine capsules and tablets in the facility	9	28.12
Presence of hydralazine injections in the facility	12	37.50
Presence of methyldopa tablets	10	31.25

The availability of medicines for adolescent health services in the health facilities in Gambella was lower compared to research carried out in other parts of Ethiopia, where over 90% of health facilities had emergency contraceptive methods, oxytocin, gentamicin and magnesium sulphate injections available (Getahun et al 2015:6). The same study revealed sufficient (90%) availability of reproductive health, maternal, new-born and child health commodities in all health facilities (Getahun et al 2015:6).

In terms of the availability of trained staff members on the adolescent guidelines, it was determined that 40% health workers were trained in the guidelines. Despite the inadequate capacities observed, the result is higher than a study in Lusaka, Zambia, where only 23% of facilities had health workers trained on adolescent health service guidelines (MEASURE Evaluation 2019:22). Owuondo, Tenembergen, Adoyo and Killo

(2015:16) recommend the availability of adolescent health services with trained health workers in functional facilities.

4.3.2.1.2 Communicable disease prevention and control and the available services

- **Malaria programme**

Although all (100%) public health facilities offered diagnostics and prompt treatment to malaria clients, only 37% of the facilities in Gambella had the capacity to diagnose malaria disease using laboratory microscopy. Despite the availability of the rapid diagnostic test for malaria in all (100%) facilities, half of the public health facilities had no accredited or certified laboratory technicians. Stockouts of both drugs and reagents in the three months prior to data collection were also reported in 53% of the reviewed facilities (see Table 4.6). The availability of anti-malaria drugs was observed in 100% of facilities. This result is higher than the findings of a study conducted in Burkina Faso, Cambodia and Tanzania, where anti-malaria drugs were available in only 76% of facilities (O’Neil et al 2013:926). The availability of trained staff for malaria diagnosis was observed in only half the facilities.

However, the current study’s findings reporting on trained staff members were lower compared to a study conducted in Sierra Leone, which was conducted to assess service availability and readiness. The majority of facilities (93%) had staff members trained in the early diagnoses and prompt treatment of malaria (Government of Sierra Leone’s Ministry of Health and Sanitation [GoSLMoHS] 2012:68).

Table 4.6 Percentage availability and number of malaria services in health facilities in Gambella, Ethiopia (N=32)

Services	Number	Percentage (%)
Malaria diagnosis and treatment	32	100.00
Availability of malaria diagnosis test (microscopy)	12	37.50
Availability of anti-malaria drugs (for all adult and paediatric doses)	32	100.00
Health facilities have an accredited/certified laboratory technician	16	50.00
Capacity to conduct malaria microscopy	12	37.50
Capacity to conduct rapid diagnostic tests (RDTs)	32	100.00
Stockout of malaria commodities (reagents and drugs)	17	53.10

- **Availability of tuberculosis services**

In the current study, despite the availability of TB services in 87% of the public health facilities, diagnostic services were inadequate. The study found that 37% of the public health facilities used smear microscopy to diagnose pulmonary TB. The rapid test for TB diagnosis using GeneXpert MTB/RIF was available in 28% of public health facilities, and diagnosis using chest X-rays was the least available diagnostic test, found in only one facility (see Figure 4.7).

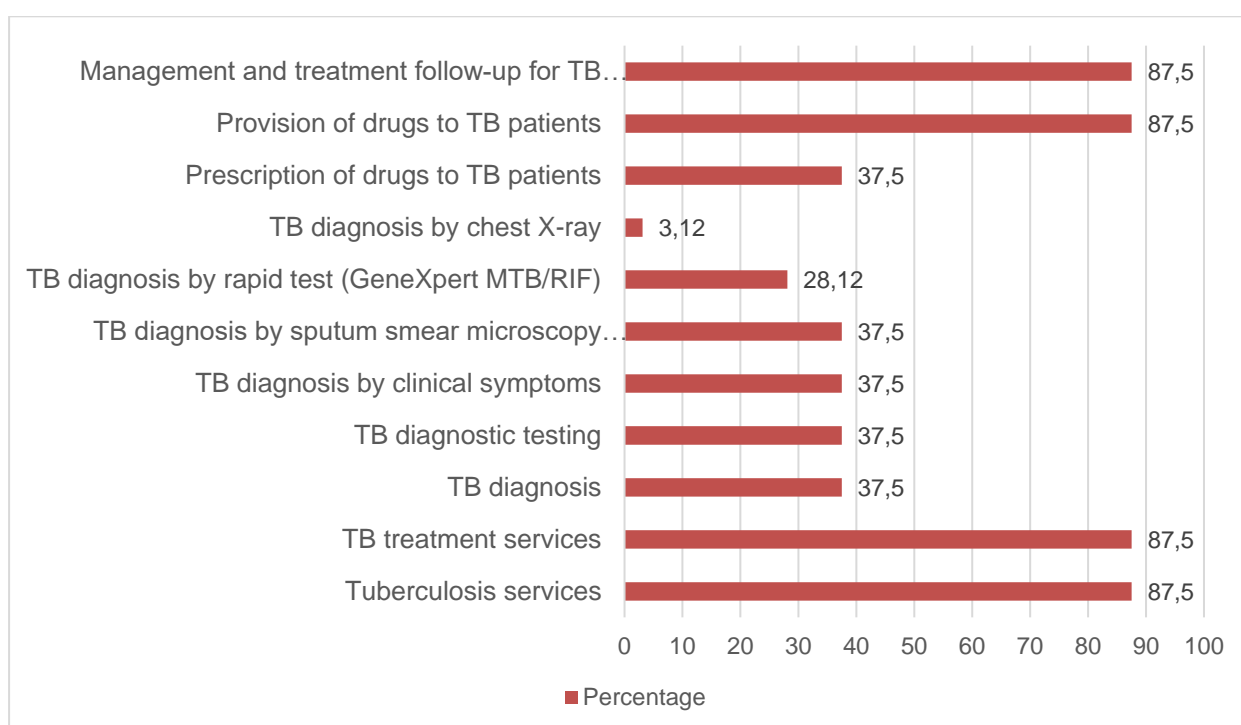


Figure 4.7 Percentage distribution of health facilities offering tuberculosis diagnosis and treatment in Gambella, Ethiopia (N=32)

Despite limited capacities to diagnose TB, the majority of the facilities (87%) offered drugs to TB-confirmed cases, though the prescription was provided in only 37% of health facilities that conducted TB tests. Those facilities (87%) that provided drugs to TB patients also performed treatment follow-up of confirmed cases to ensure that they successfully completed their course of treatment (see Figure 4.8). The WHO (2017d:8) recommends that authorities and facilities make TB services available free of charge for the reasons outlined below.

First, TB drugs are among the most expensive medicines that many poor people find difficult to afford. Second, the resistance of the bacteria requires prolonged treatment, so if an individual stops the treatment, it poses a high risk of transmission within a community if not properly managed (WHO 2017d:8). Therefore, the more inadequately TB is treated, the higher transmission there is of the disease, and the greater the likelihood of communities developing resistance to anti-TB drugs, resulting in complicated forms of multi-drug resistance treatment. According to the WHO (2019:18), access to effective treatment by TB patients in functioning facilities has the double benefit of protecting the community and public from the transmission of the disease, and it is critical in saving the lives of individual patients.

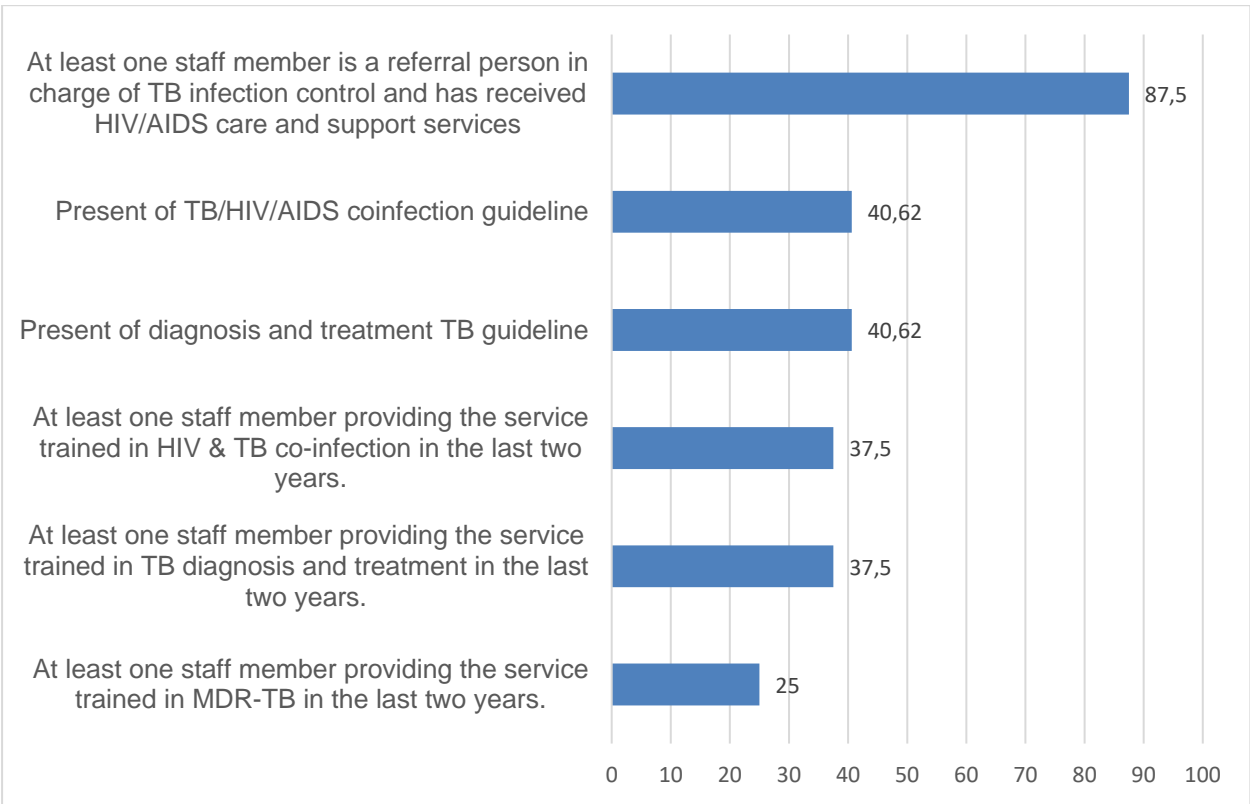


Figure 4.8 Percentage distribution of health facilities with guidelines and trained health workers on the tuberculosis program in Gambella, Ethiopia (N=32)

Regarding the health facilities’ capacity to offer TB diagnosis and treatment, although 87% of the study facilities had at least one staff member focal point responsible for the referral of TB patients and infection control, only 25% of facilities had health workers trained in multi-drug resistant (MDR) TB. Moreover, only 37% of the assessed health facilities had staff members who received training on the diagnosis and treatment of TB,

including the management of co-infected chronic TB or HIV patients. Regarding the availability of diagnostic and treatment guidelines, about 60% of the health facilities in Gambella implemented TB programmes without available guidelines. This finding exceeds the result of studies done in facilities of Burkina Faso, Cambodia and Tanzania, where a third of the facilities offered TB services with no trained staff or guidelines on TB prevention and control (O'Neill et al 2013:926). As noted above, in the current study, 87% of the facilities had at least one worker trained in TB prevention and control. This proportion is higher compared to a study conducted to assess the availability of the service nationally, which showed that only 46% of facilities had health workers trained in TB prevention and control (EPHI, FMOH & WHO 2017:81).

- **Prevention and control of HIV services in facilities**

Despite the availability of services targeted at HIV prevention and control in 75% of the health facilities, treatment for Kaposi's sarcoma was available in only 18% of health facilities, and a slightly higher proportion of facilities (25%) provided palliative care to HIV/AIDS patients. The primary preventive treatments for opportunistic infections, FP counselling and HIV care and support were available in 78% of public health facilities. In addition, about 68% of public health facilities in Gambella cared for paediatric HIV/AIDS patients, and TB prophylaxis for HIV patients. While 65% of the assessed health facilities provided male condoms to HIV/AIDS patients, over 40% of the assessed health facilities did not offer palliative care to HIV patients. Fortified protein supplements were also not prescribed in over 40% of assessed facilities. Though nutrition rehabilitation was available in 53% of the assessed facilities, half of the facilities in Gambella did not provide micronutrient supplements to HIV/AIDS patients during the health facility assessments (see Figure 4.9).

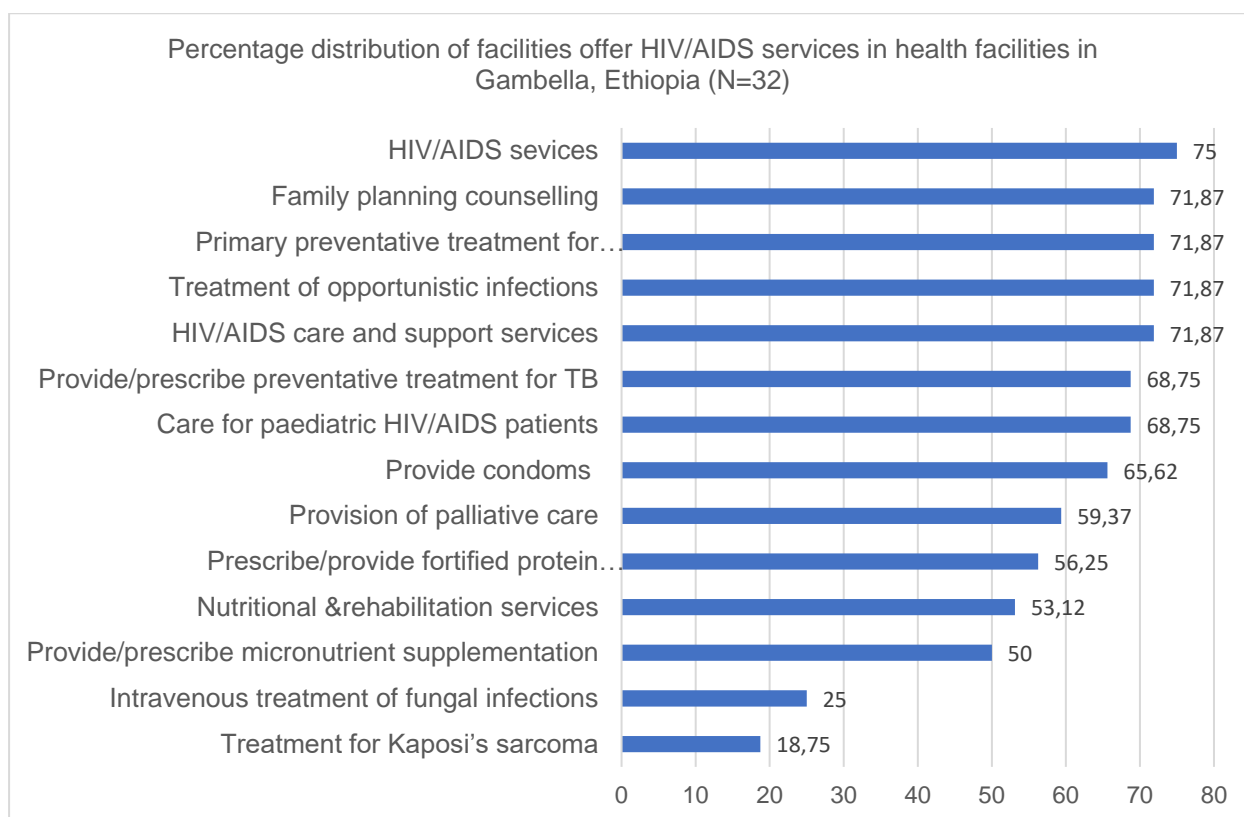


Figure 4.9 Percentage distribution of HIV services available in health facilities in Gambella, Ethiopia (N=32)

While it is evident that HIV services need to be improved, the findings are higher compared to a study conducted to assess service availability in health facilities in Tanzania, where opportunistic infection treatment, palliative care for chronic illness, Kaposi's sarcoma treatment, the provision of intravenous treatment for fungal infections, and the prescription of fortified protein supplements were reported in 39%, 26%, 8% and 11% of facilities, respectively (Tanzania Ministry of Health and Social Welfare 2013:47).

The WHO (2016a:251) identifies multiple factors that can play critical roles in loss to HIV/AIDS treatment follow-up among clients receiving services. The loss to follow-up could be attributed to the inaccessibility of health facilities, lack of transport, inability to cover travel costs, or it may be related to a lack of awareness of the availability of HIV services in the facility.

- **PMTCT service availability**

The current study showed that 87% of health facilities offered prevention of mother-to-child transmission (PMTCT) services that included counselling and testing for HIV/AIDS.

A total of 84% of health facilities offered health education services on FP uses among HIV-positive women. About 81% of the public health facilities in Gambella were also able to offer antiretroviral (ARV) prophylaxis to HIV-positive mothers, and 81% of facilities were observed on assessment days to provide prophylaxis to new-born babies from HIV-positive mothers in public health facilities. However, the PMTCT and IYCF guidelines were not observed in 50% of the assessed public health facilities in Gambella (see Figure 4.10). These findings are lower than the findings of a similar study conducted in Tanzania, where IYCF and PMTCT guidelines were available in 69% and 79% of facilities, respectively (Tanzania Ministry of Health and Social Welfare 2013:53).

During the interviews with the heads of health facilities, it was confirmed that more than half of the assessed health facilities did not have a single health worker trained in PMTCT. This contrasts with the WHO recommendation that all testing facilities must employ a number of trained personnel to conduct testing that is adequate to the number of people who expect the services (WHO 2015b:122).

The WHO (2016a:82) recommends that ART services be provided for all pregnant women who test positive for HIV, as it can improve the mother's health, prevent transmission of the disease to the child, and reduce virus transmission to sexual partners. These recommendations are equally relevant to all epidemic settings. Health facilities offering HIV prevention through the PMTCT service should also offer HIV tests to infants born to HIV-positive mothers. The facility should provide prophylactic drugs to pregnant mothers who test positive for HIV and new-born babies born to HIV-positive mothers, as well as IYCF, nutrition and FP services. As the aim of PMTCT services is to reduce HIV transmissions from HIV-positive mothers to babies during pregnancy, birth, and during the lactating period, the PMTCT effectiveness is ensured through the implementation of various approaches:

- The provision of preventive measures primarily for female in the reproductive age group.
- The provisions of FP service with the aim of preventing unplanned pregnancy among HIV tested positive women.
- The provision of PMTCT services to prevent transmission of disease to the child.
- Provide care and supports to HIV-infected babies, mothers and family members.

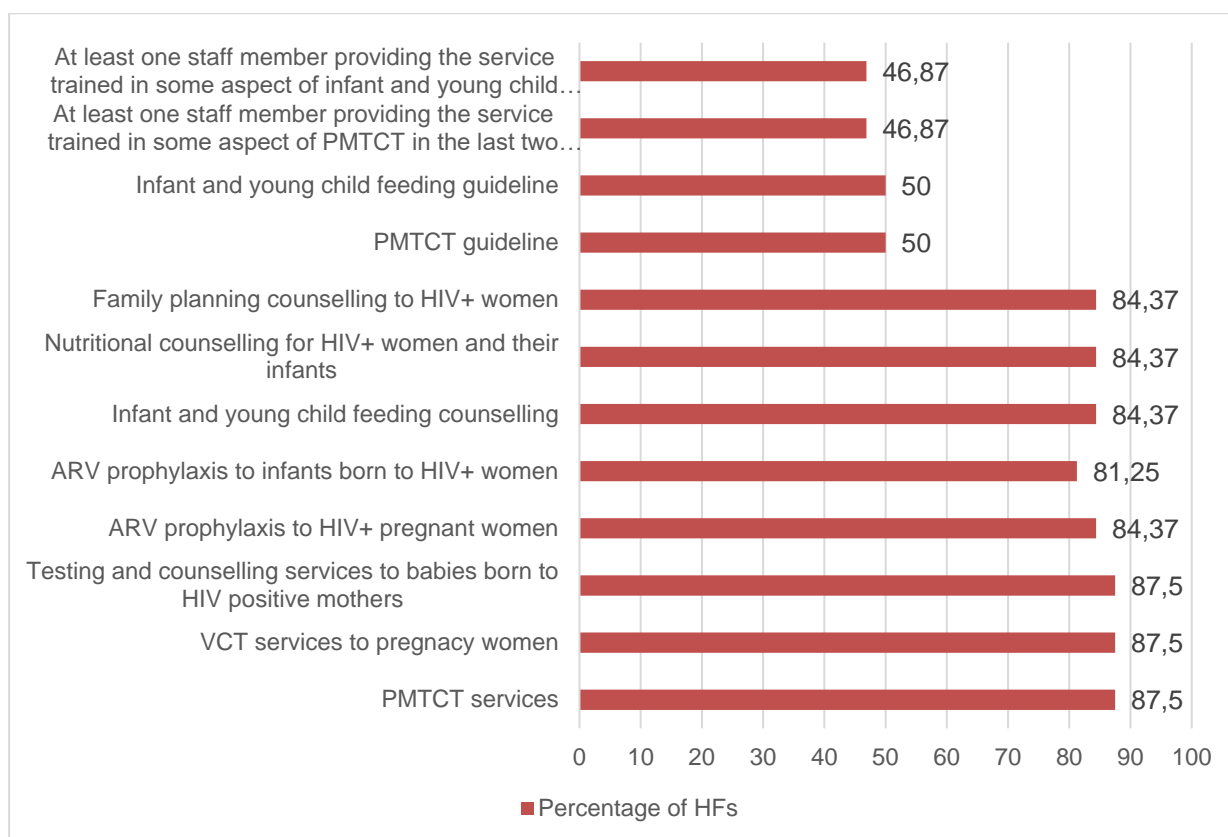


Figure 4.10 Percentage distribution of health facilities implementing PMTCT interventions in Gambella, Ethiopia (N=32)

- **Availability of STI services**

Although STI services were the most widely available services in all public health facilities that were assessed, the majority of facilities (56%) reported providing STI services using health workers who had not been trained in STIs in the two years prior to data collection. Workowski, Bolan and Centers for Disease Control (CDC) and Prevention (2015:140) recommend treatment to be provided by trained health workers to ensure the effectiveness of the treatment outcomes and reduce low efficacy and treatment complications that under- and over-doses might cause. The STI treatment and diagnosis guideline was not observed in more than 40% of the assessed public health services, though ciprofloxacin tablets, ceftriaxone injections and other STI drugs were provided in most health facilities (see Figure 4.11).

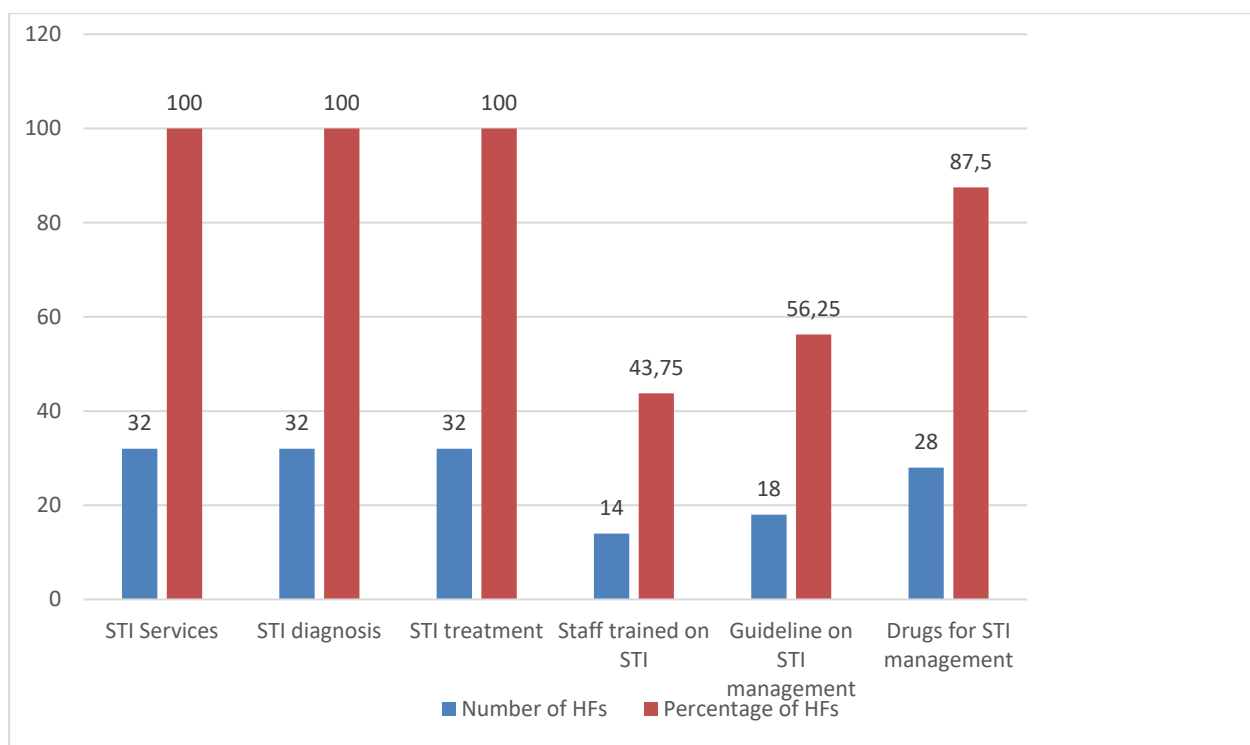


Figure 4.11 Percentage and number of health facilities offering sti services in Gambella, Ethiopia (N=32)

- **Stockouts reported**

The stockout of essential medicines for the provision of health services was the most notable challenge faced by public health facilities in Gambella. The assessment reveals that all health facilities in the region (100%) had reported a stockout of drugs in the three months prior to data collection, as shown in Table 4.7. Stockouts of health commodities and FP medicines were reported in 53% of the assessed facilities. The same proportion of facilities also faced stockouts of anti-malaria drugs and commodities. Twenty (62%) health facilities had reported stockouts of medicine and commodities for new-born and child health services over the three months prior to the assessment. The findings are dissimilar to a study conducted to understand the health systems in South Sudan, which showed that 50% of facilities-maintained new-born supplies and did not experience stockouts (Sami, Amsalu, Dimiti, Jackson, Kenyi, Meyers, Dimiti, Mullany, Scutter, Tomczyk & Kerber 2018:5). Newton-Levinson, Leichter and Chandra-Mouli (2016:11) state that the availability of required supplies equates to the availability of health services in functional health facilities.

Table 4.7 Percentage and number of reported stockouts of medicines and commodities in health facilities in Gambella, Ethiopia (N=32)

Items	Number	Percentage (%)
Stockout of medicine over the last three months	32	100.00
Stockout of FP medicine and commodities over the last three months	17	53.12
Stockout of new-born and child health medicine and commodities over the last three months	20	62.50
Stockout of maternal medicine and commodities over the last three months	15	46.87
Stockout of malaria medicine and commodities over the last three months	17	53.12

- **Availability of basic surgical services**

The study revealed that 96% of health facilities had basic surgical services, followed by 91% of facilities that provided a suturing service. Furthermore, 87% of public health facilities provided acute burn management, and 81% assisted in the incision and drainage of abscesses. A total of 75% of facilities provided wound debridement, and 56% of facilities offered treatment for fractures, while 28% of facilities also provided male circumcision services. In contrast, chest tube insertion, cricothyroidotomy and hydrocele reduction services were available in just 6%, 9% and 12% of facilities, respectively. The percentage of services offered is lower than that of a study conducted to assess essential surgical availability in Bangladesh, where wound debridement, suturing and male circumcision services were found to be available in all health facilities (Loveday, Sachdeu, Cherian, Katayama, Akhtaruzzaman, Thomas, Huda, Faragher & Johnson 2017:1748).

Despite the presence of basic surgical services in the vast majority of health facilities, only 6% had basic surgical equipment and medications available for the procedures (see Figure 4.12). As Levesque and colleagues point out, the availability of health services and the capacity of health systems to produce health outcomes with sufficient health resources are necessary for service provision (Levesque, Harris & Russel 2013:6).

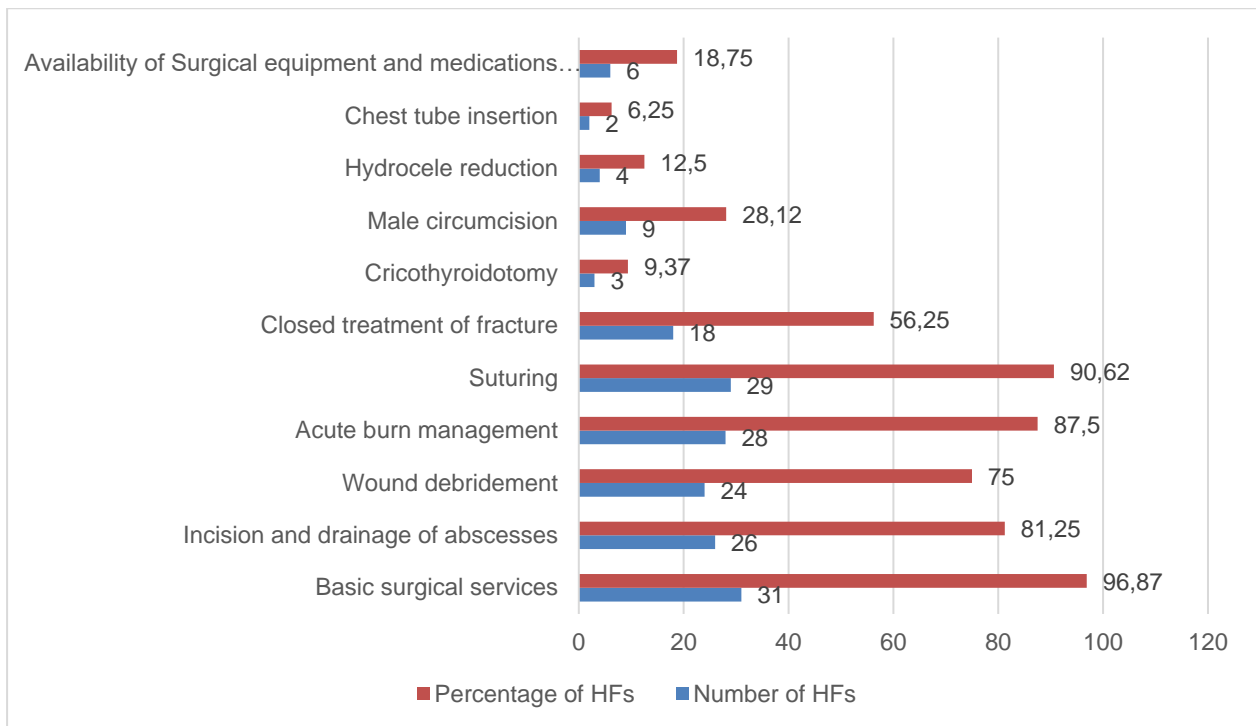


Figure 4.12 Percentage and number of health facilities offering basic surgical services in Gambella, Ethiopia (N=32)

- **Availability of blood transfusion service**

Across Gambella, blood transfusion is only provided in the Gambella General Hospital. However, the blood transfusion service was reported to have been interrupted in the three months before assessment because of a lack of blood supplies. Gambella General Hospital was observed to have the relevant guideline on the appropriate and safe use of blood transfusion services during the assessment period. The hospital also had a health worker recently trained in blood transfusion. The hospital was able to perform blood transfusions with laboratory reagents and functioning equipment and obtained blood supplies from the state's own blood bank (see Figure 4.13).

According to Abdella, Hajjeh, and Sibinga (2018:783), an important aspect of having blood and blood products available for humanitarian situations is to ensure and maintain good hygiene, infection control, and decontamination. The collected blood must meet safety standards through screening of blood donations to exclude evidence of hepatitis B and C virus, and HIV (New Zealand Blood Service 2016:164).

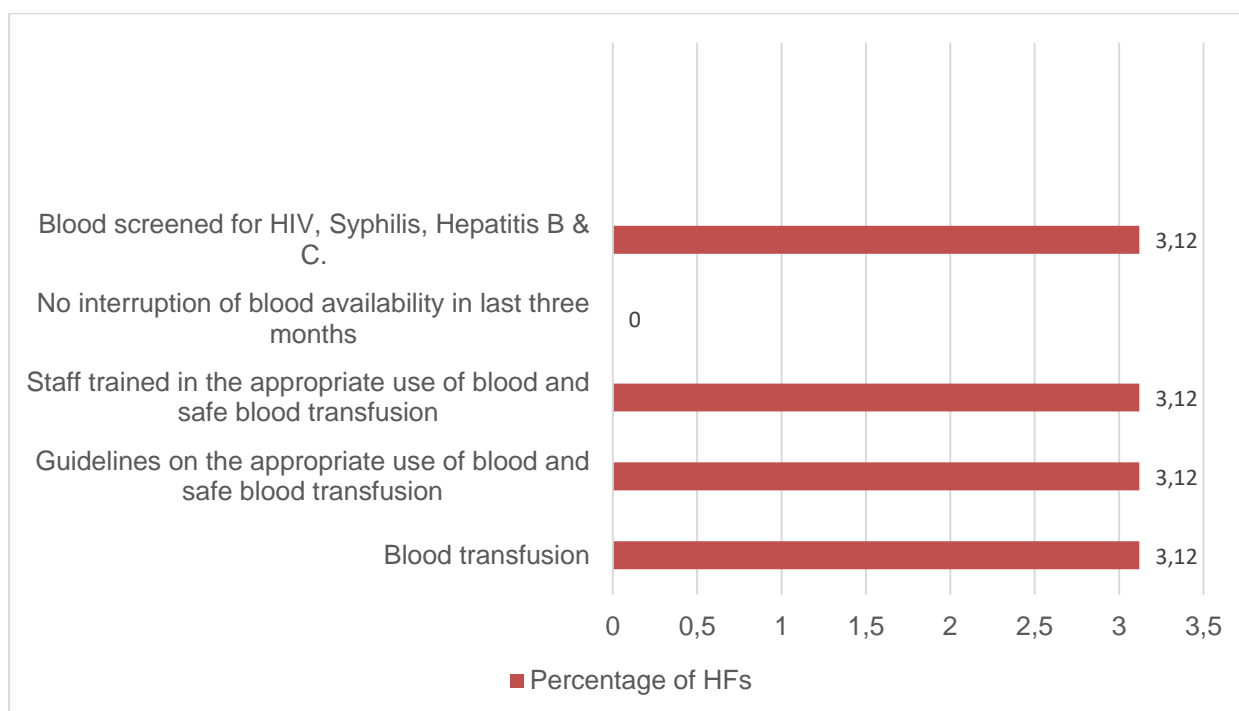


Figure 4.13 Percentage of health facilities offering blood transfusion services in Gambella, Ethiopia (N=32)

- **Availability of medicines**

There should be continuous provision of public health services to emergency-affected populations and a strong supply of essential medicines. In the current study, public health facilities were assessed on the availability of the following medicines which are essential for health service provision: amlodipine tablets and amitriptyline tablets or calcium channel blockers; amoxicillin tablets; syrups/suspensions or dispersible tablets; ampicillin capsules; injection solutions; and beclomethasone inhalers.

This study found that amoxicillin was the most widely available medicine, found in 93% of the assessed health facilities. Amoxicillin syrups/suspension were the second most available medicine, observed in 72% of the facilities. Amitriptyline tablets were the least available medicine – it was unavailable in nearly 60% of the assessed health facilities – followed by beclomethasone inhalers and amlodipine tablets (or alternative calcium channel blocker), which were available in only 15% and 21% of facilities, respectively. Although the majority of health facilities reported medicines were unavailable, amoxicillin was the only medication that was always available, although not available on the day of data collection.

The study found ampicillin powder for injection and beclomethasone inhalers unavailable in 28% of the public health facilities on the data collection day. Also, 93% of facilities had at least one valid amoxicillin tablet, while valid amitriptyline tablets were observed in 15% of facilities (as shown in Figure 4.14).

The National Academies of Sciences, Engineering and Medicine (2015:18) states that the availability of essential medicines determines not only the success of health programmes, but also contributes to the health system sustainability. A resilient health system is expected to have an uninterrupted supply of essential medicines at all times to address public health needs (WHO 2017k:6).

The health facilities were assessed for the availability of essential medicines including glibenclamide, enalapril, ibuprofen, fluoxetine and others, plus injectable drugs containing ceftriaxone and gentamicin. Findings revealed that the medicine reported most unavailable in health facilities was fluoxetine, which was never available in 62% of facilities. It was also the least observed medicine, seen in only 9% of facilities. The findings also showed that glibenclamide tablets and enalapril tablets or other alternative ACE inhibitors were never available in 43% and 53% of the assessed health facilities, respectively. Gentamicin was the most widely observed of these medicines, available in 81% of the facilities, followed by ceftriaxone injection (observed in 71% of the facilities). Ibuprofen tablets were not observed in half of the health facilities and were available but not valid in 31% of the facilities (see Figure 4.14).

Assessments were also conducted on the availability of tablets and syrups of zinc sulphates, pantoprazole, omeprazole, rabeprazole and metformin. Moreover, the presence or absence of injectable insulin drugs, tablets of paracetamol, ORS solutions, statin tablets – including atorvastatin, simvastatin, fluvastatin and pravastatin – were assessed in the study period. Findings showed that valid insulin injections were observed in only five facilities (15%) and were never available in 56% of health facilities, followed by all forms of statin medicines, which were never present in more than half of the public health facilities in the study. Findings also reflected that 96% of facilities had ORS that was available and observed to be valid during the assessment, followed by paracetamol and salbutamol inhalers, which were both available in 93% of the assessed facilities (see Figure 4.14). This corroborates the findings of previous studies conducted in the country, where paracetamol, amoxicillin, ORS and zinc were available in 100%, 98%, 88% and 85% of health facilities, respectively (Okwaraji, Berhanu & Persson 2017:30).

A study conducted in two states of India to assess the presence or absence of medicines essential for public health service provision revealed that 100% of facilities had ORS for diarrheal disease treatments, while anti-diabetic drugs were available in only 47% of the facilities (Prinja et al 2015:5). However, the findings of the current study were higher compared to a study conducted to assess the readiness of the health facilities in Nigeria, where ceftriaxone, ampicillin, gentamicin, ORS, zinc, and paracetamol were available in 18%, 23.4%, 53.6%, 53.3%, 22% and 74% of facilities, respectively (Oyekale 2017:7). As some authors note, access to essential medicines is a fundamental right for individuals in need (Rathish, Jayathilake, Premarathna, Kandegedara, Anamda, Punchihewa, Bandara, Jayasumana & Siribaddanas 2017:1).

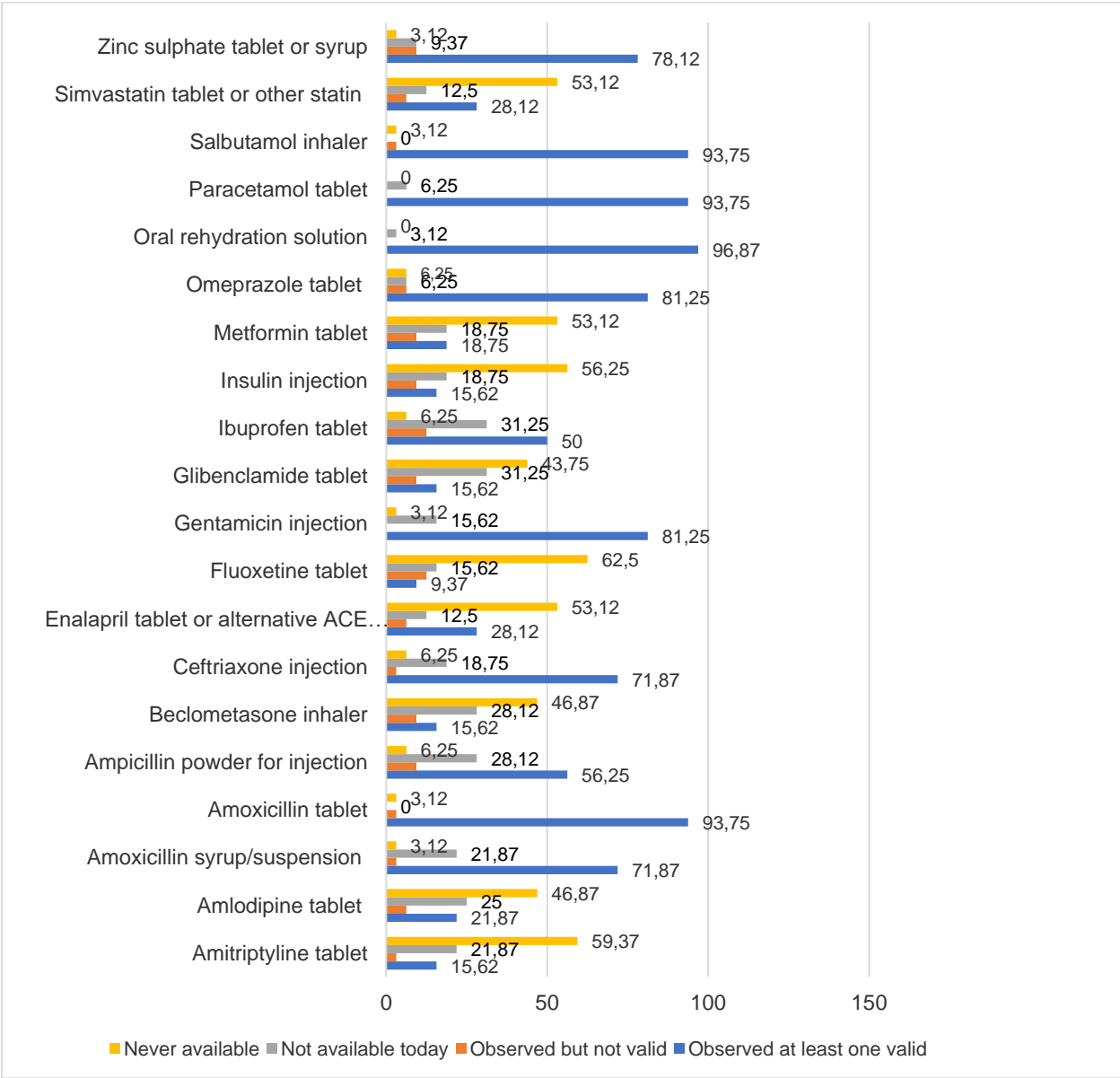


Figure 4.14 Percentage distribution of essential medicines in health facilities in Gambella, Ethiopia (N=32)

- **Supervision**

When asked about supervisory visits by the higher institution to which the facility reports, about 37% of the facilities stated that they had received such a visit in the last three months and only 28% of the facilities had a visit in the month before data collection. The facilities that received such a visit were assessed on the availability of the required resources, including checking for data quality (see Figure 4.15). Renggli, Mayumana, Charles, Mboya, Mshana, Glass, Kessy, F, Lengeler, Aerts, Schulze and Pfeiffer (2019:2) identified the contributions of supportive supervision to the improvement of the quality of health services, mostly in low-income settings, if properly conducted. Investing enough time on the identification of bottlenecks that hinder the implementation of programme interventions during the supervision exercises can make a significant contribution to improving the quality of health service provisions (Avortri, Nabukalu & Nabyonga-Orem 2019:4). In contrast, Ludwick, Turyakira, Kyomuhangi, Manalili, Robinson and Brenner (2018:6) stated that the absence or weak supportive supervision of facilities contributes to poor treatment outcomes, poor performance and weak referral linkages between facilities.

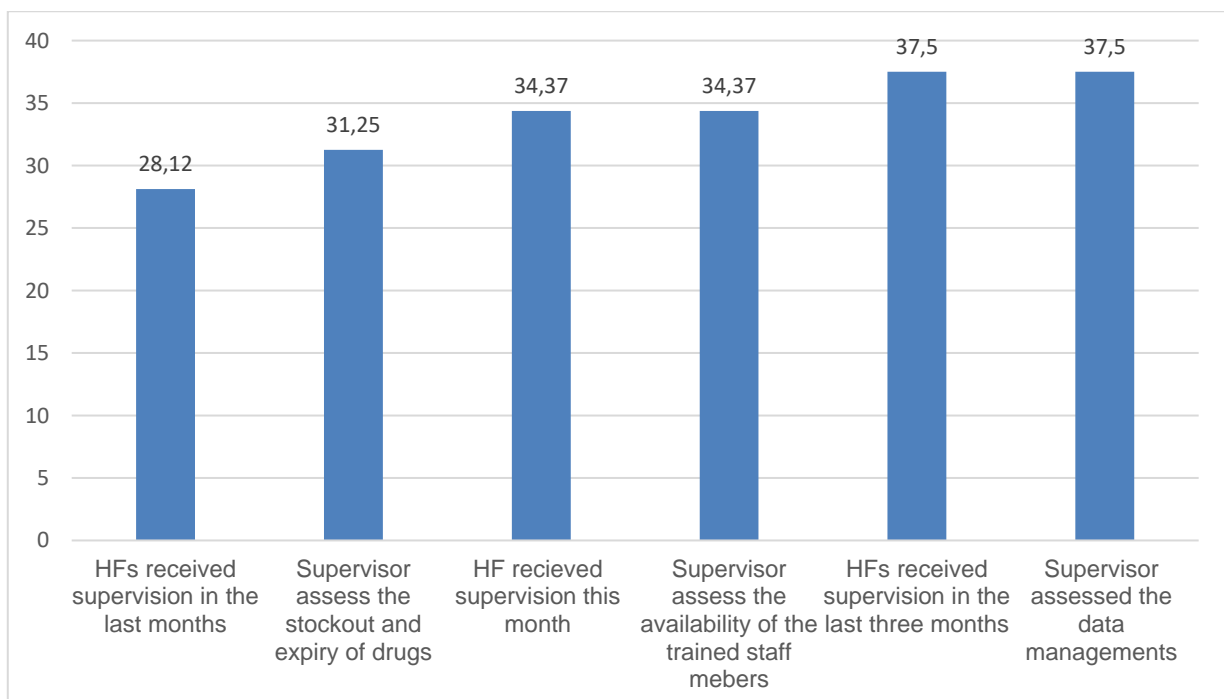


Figure 4.15 Percentage of facilities that received supervision during the survey of health facilities in Gambella, Ethiopia (N=32)

- **Infrastructure**

The availability of infrastructure to provide public health services was assessed using checklists in all functional facilities. The participants were asked about the availability of communication systems, given that any service would need a medium of communication in place, such as a landline phone, cellular phone, any type of radio or functional computer. The facilities were also assessed on the availability of a means of transportation following referrals to the next levels of facilities, assuming that the functional health facilities had an ambulance or other vehicles for emergency transport.

Facilities were also assessed on the availability of power supply and basic amenities, and the presence or absence of basic equipment. The availability of infection precautions in public health facilities was also observed. The heads of the health facilities were asked if they received integrated supportive supervision from the next level of administration to identify gaps and improve services. The lack of infrastructure and low capacity of health systems can have negative impacts on people's health, and it is recommended that governments invest more in infrastructure and human resources for health that bear high returns in saving lives (Bjegovic & Otok 2017:5). Scholz, Ngoli and Flessa (2015:1) state that health infrastructure is an essential component further bonded with the structural elements required for the provision of health care.

Public health facilities in Gambella services with inadequate infrastructure. With regard to the availability of communication, transportation and power supply, only 15% of the health facilities had a functioning landline telephone. Despite the presence of functioning computers in 59% of the assessed health facilities, only 6% had email and functioning internet connectivity in the facilities. Regarding the availability of transportation for emergency services, the study showed that only 18% of the assessed health facilities had functional ambulances or other vehicles stationed at the facilities for the emergency transportation of clients (see Table 4.8). Concerning the availability of electrical power supply, only 34% of the facilities were observed to have at least one source of power supply during the assessment.

Culver, Rochat and Cookson (2017:6) note that prioritisation of the health infrastructure in settings where there is a high risk of disease outbreaks could improve health outcomes and reduce negative health consequences as a result of health emergencies. The

unavailability of health infrastructure for the distribution of supplies and the provision of immunisation services, can pose challenges to children in need (Lam, McCarthy & Brennan 2015:2634).

Table 4.8 Percentage availability and number of infrastructure items in health facilities in Gambella, Ethiopia (N=32)

Infrastructure items in health facilities	Number	Percentage (%)
Functioning landline telephones that can make calls	5	15.62
Mobile phones that were procured for the purpose of health services provision	10	31.25
Functioning computer	19	59.37
Internet connectivity working on the day of assessment	2	6.25
Functioning ambulances for referral systems stationed in the facility and seen on the assessment day	6	18.75
Health facilities linked with other facilities that have standby ambulances or other vehicles ready when needed to refer emergency cases	6	18.75
Ambulances or other emergency vehicles with enough fuel observed during the assessment	6	18.75
Functioning electric supply – either grid sources of electricity, solar devices, generators or functional direct cold chain devices	11	34.37

- **Availability of basic amenities**

The availability of basic amenities was assessed using checklists. The amenities that were assessed included:

- the availability of rooms for clinical consultation services in a good visual and auditory setting
- the availability of sanitation facilities for clients
- the availability of emergency transportation
- institutional water, sanitation and hygiene (WASH) facilities, with a source of water located near the facility (within 500 m)
- the availability of communication equipment, including a phone or a two-way radio
- sources of electric supply for the system's functioning, with outages of less than two hours per day
- the availability of computers and internet services with functional email (see Table 4.9)

Table 4.9 Percentage distribution of basic amenities in health facilities in Gambella, Ethiopia (N=32)

Basic amenities in health facilities	Percentage (%)
Availability of rooms for clinical consultation services that have a good visual and auditory setting	87.50
Availability of sanitation facilities for the clients	59.37
Availability of emergency transportation	18.75
Institutional WASH facilities, with the source of water located near to the facility (within 500m)	12.50
Availability of communication equipment, including phone or a two-way radio	15.62
The presence of sources of electric supply for the system functioning, with outages of fewer than two hours per day	34.37
Availability of computers and internet services with functional email	6.25

The overall finding was that public health facilities offer services in very poor infrastructural settings. In recognition of the critical roles of water, sanitation and hygiene promotion in the quality of health care delivery, there is an urgent need to improve institutional WASH at all levels (WHO & UNICEF 2015:13). However, only 12% of the assessed health facilities had water sources within 500m of the facility. More than 40% of public health facilities had inadequate sanitation facilities for clients; more than 80% had no communication networks with the next level of administration; and more than 90% had no computer or internet to manage and communicate their data. More positively, rooms with auditory and visual privacy for patient consultation were available in 87% of the facilities (see Figure 4.16).

The results of the current study are in some respects similar to those of a study conducted in Nepal on the availability and capacity of the health facilities to offer services. That study showed that improved water sources and adequate sanitation facilities for the clients were available in 81% of facilities, followed by rooms with good auditory and visual privacy, emergency transportation, regular electricity supply, communication equipment, and availability of computers with internet services in 78%, 59%, 49%, 20% and in 11% of health facilities, respectively (Nepal Ministry of Health, Nepal New ERA, Health Sector Support Program and International Classification of Functioning, Disability and Health [NMOH, NHSSP & ICF] 2016:12).

A study conducted in northern Ghana to assess the availability of basic resources required for health service provision showed critical gaps in basic amenities. Emergency

transportation was available in only 7% of facilities, followed by clean water and electric power supply, which was available in 14% and 36% of health facilities, respectively (Dalinjong, Wang & Homer 2018:5).

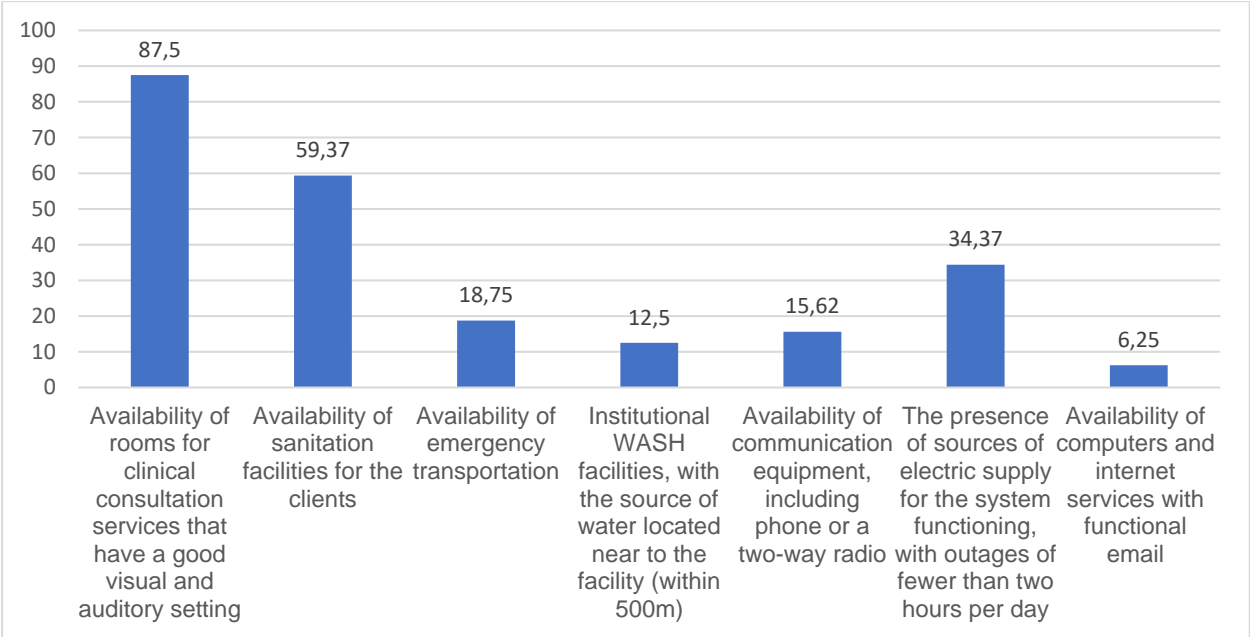


Figure 4.16 Percentage of basic amenities in health facilities in Gambella, Ethiopia (N=32)

- Availability of required equipment**

Regarding the availability of equipment that is vital in the functioning of health facilities, adult weighing scales were the most widely available and functioning equipment in 96% of health facilities, followed by the availability of child weighing scales, thermometers and stethoscopes in 96% of facilities; these instruments were functional in 93% of facilities. Light sources were noted to be unavailable in more than 60% of the facilities (see Figure 4.17). The results of the current study are similar to research conducted to assess health facility readiness in Uganda, which showed that adult scales, thermometers, child scales, blood pressure apparatus and stethoscopes were available in 82%, 83%, 84%, 86, and 93% of health facilities, respectively (Ssempirra, Kasirye, Kissa, Nambuusi, Mukooyo, Opigo, Makumbi, Kasasa & Vounatsou 2018:5).

Though the availability of basic equipment alone cannot guarantee health systems' preparedness to offers health services, evidence shows that health facilities have basic equipment. Islam, Macer and Laskar (2016:8) found that basic equipment was the most

available required resource for the provision of health care delivery in 89% of the facilities in Bangladesh. Despite the availability of most basic equipment in the facilities, their study found that only 37% had a light source. Another study conducted in the rural part of northern Ghana support these findings, where only 36% of facilities had examination lights (Dalinjong et al 2018:5).

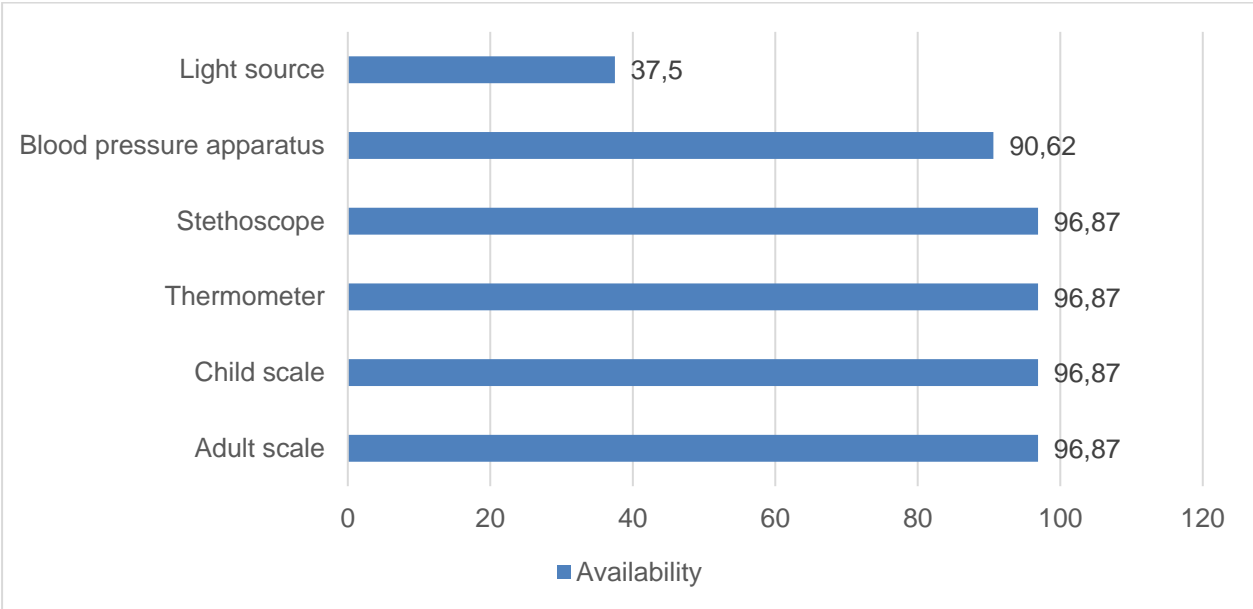


Figure 4.17 Percentage of available and functional basic equipment in health facilities in Gambella, Ethiopia (N=32)

- **Standard precautions for the availability of infection control in facilities**

The study found that 96% of facilities had lid receptacles and liner plastic bins for infectious waste management. Appropriate storage of sharps wastes was found in 93% of the health facilities, while alcohol-based hand-rub solution, disinfectants using soap, and water for hand washing were available in only 12% of facilities. Latex gloves were observed in 65% facilities, but most items required for infection control as per the precaution standards were absent in more than 70% of assessed facilities (see Figure 4.18). These findings are lower than a study done in Nepal, where latex gloves were available in 84% of facilities, and alcohol-based hand-rub solution or facility running water and soap was available in 53% of assessed sites (NMOH, NHSSP & ICF 2016:26).

Functional health facilities require guidelines on standard precautions for infection control. The current study showed that only 28% of health facilities had a guideline for standard

precautions. This result is below that of a study conducted in northern Ethiopia, where 63% of health facilities had written standard precaution guidelines available (Gebresilassie, Yemane & Kumei 2014:3).

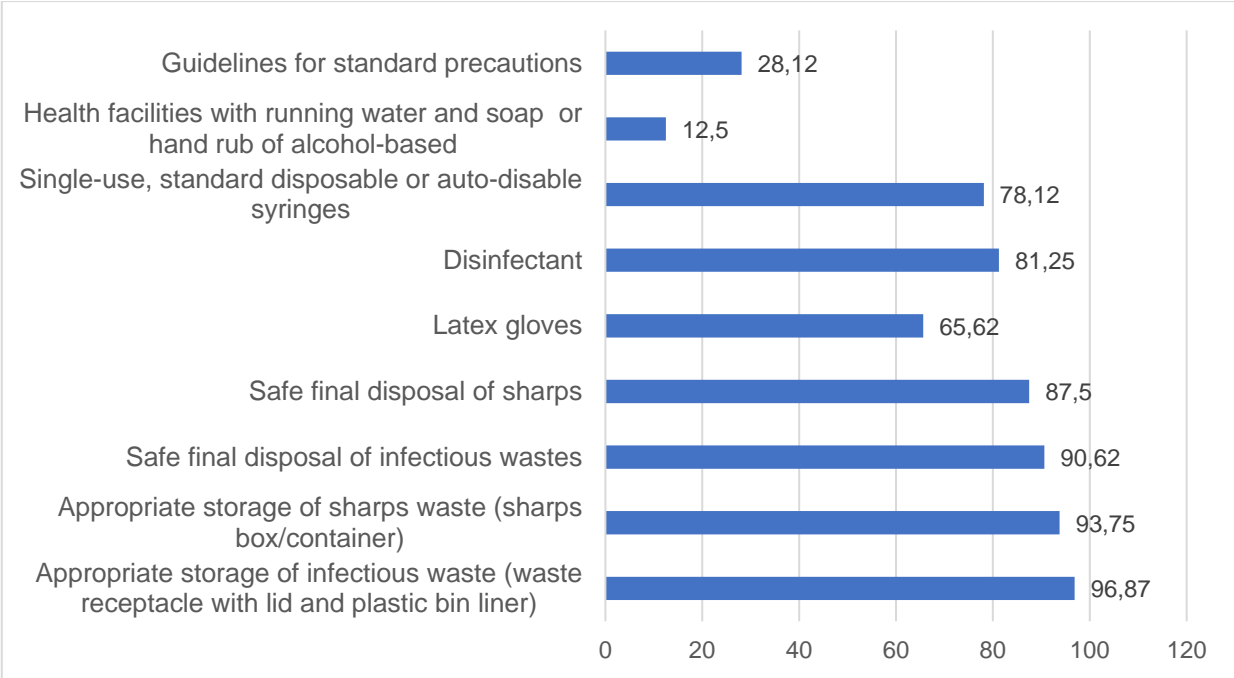


Figure 4.18 Percentage distribution of availability of infection control items in health facilities in Gambella, Ethiopia (N=32)

- Availability of diagnostic resources**

The public health facilities in Gambella were assessed for the presence or absence of diagnostic capacities (see Table 4.10). Malaria and HIV diagnostic services, among other tests, were assessed during the study. The data revealed that malaria and HIV diagnostics were available in all (100%) the health facilities, although more than half of the facilities did not offer all the required diagnostic services at the time of the assessments. In line with these findings, a survey conducted in Nepal revealed that diagnostic tests for HIV and malaria were the most widely available diagnostic tests in 100% of facilities (NMOH, NHSSP & ICF 2016:37, 42). The findings also revealed that syphilis RDT and urine pregnancy tests were available in 43% of the facilities. Blood glucose, urine dipsticks glucose, urine dipstick protein and haemoglobin diagnostic tests were observed to be available in just 37% of the facilities.

A study in one district of Bangladesh noted that the availability of diagnostic capacity in a health facility is determined by the presence of diagnostic tests for malaria and HIV, rapid test for syphilis, blood glucose, urine dipstick-glucose, urine dipstick protein and pregnancy urine test (Islam et al 2016:7).

The results of the current study contrast with those of a study conducted in Addis Ababa, Ethiopia, which revealed that 100% of facilities offered urine dipstick tests, 92% offered haemoglobin tests, 84% offered blood glucose tests, and 76% offered syphilis rapid tests (Dessalegn, Taye & Abay 2016:5).

Table 4.10 Percentage distribution of the availability of diagnostic capacity in health facilities in Gambella, Ethiopia (N=32)

Services	Number	Percentage (%)
Malaria diagnostic capacity	32	100.00
HIV diagnostic capacity	32	100.00
Urine pregnancy test	14	43.75
Urine dipstick – protein	12	37.50
Urine dipstick – glucose	12	37.50
Blood glucose	12	37.50
Syphilis RDT	14	43.75
Haemoglobin	12	37.50

4.3.2.1.3 Availability of data sources observed during the document reviews

In the current study, the availability of primary sources of documents and quarterly reports was reviewed using the adopted WHO document review checklists. The reviewed documents included quarterly reports on facilities’ service delivery, ANC service, institutional delivery, immunisation services, and HIV/AIDS and TB prevention and control programme reports.

- **ANC document reviews**

The reviewed quarterly reports on ANC showed that 68%, 56% and 65% of facilities had completed reports available for the first, second and third months, respectively. Partial reports were observed in 28%, 40% and 31% of facilities for months one, two and three, respectively. Across the quarter, 3% had no ANC document sources available during the assessment (see Figure 4.19).

In line with these findings, in a study conducted in Gombe State, Nigeria, 52% of facilities had complete reports on ANC for four or more visits, with incomplete reports in 22% of facilities (Bhattacharya, Allen, Audu, Umar, Felix, Marchant & Schellenberg 2019:7). A study done in Uganda linked incomplete reports with the unavailability of reporting tools, high staff turnover, and a lack of trained personnel in the facilities (Kiberu, Matovu, Makumbi, Kyoziira, Mukooyo & Wanyenze 2014:5).

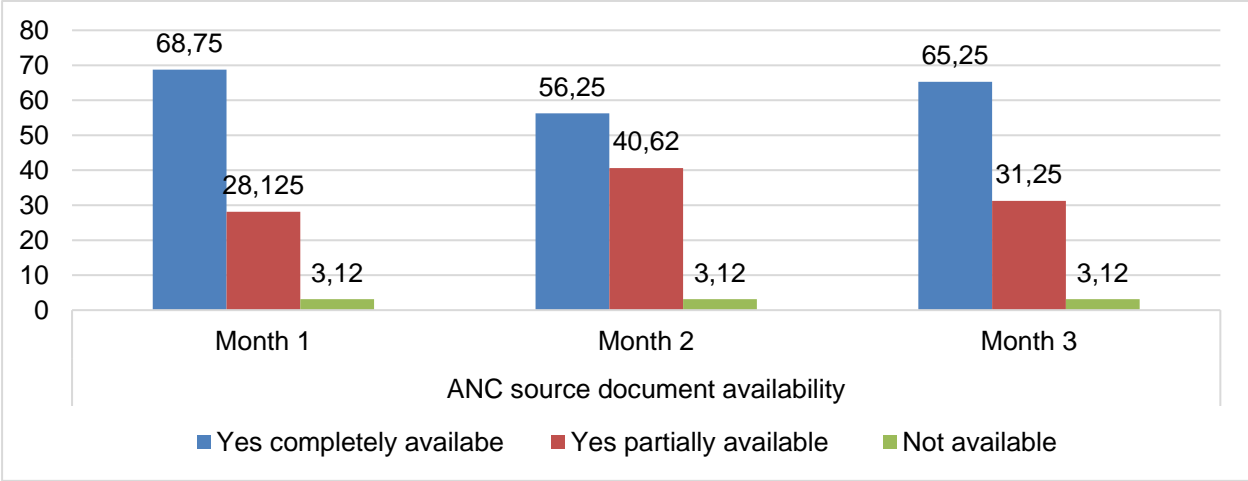


Figure 4.19 Percentage of health facilities with ANC reports as a document source in Gambella, Ethiopia (N=32)

- Institutional delivery document reviews**

Though most health facilities had delivery reports during the assessment, there is still room for data management improvement. The results showed that 16%, 25% and 21% of facilities had incomplete data sources observed in months one, two and three of institutional delivery services, respectively (see Figure 4.20). These contrast with the findings of a study conducted by Bhattacharya et al (2019:8) in Nigeria which revealed that nearly 50% of the health facilities had incomplete or no reports on institutional deliveries. The high completeness of delivery data might be related to less delivery data being obtained in facilities due to the low numbers of institutional deliveries. A study conducted in the country on the utilisation of delivery services noted that despite efforts by the government of Ethiopia to increase institutional delivery, 85% of the total births are estimated to happen at home (Kebede, Hassen & Teklehaymanot 2016:464).

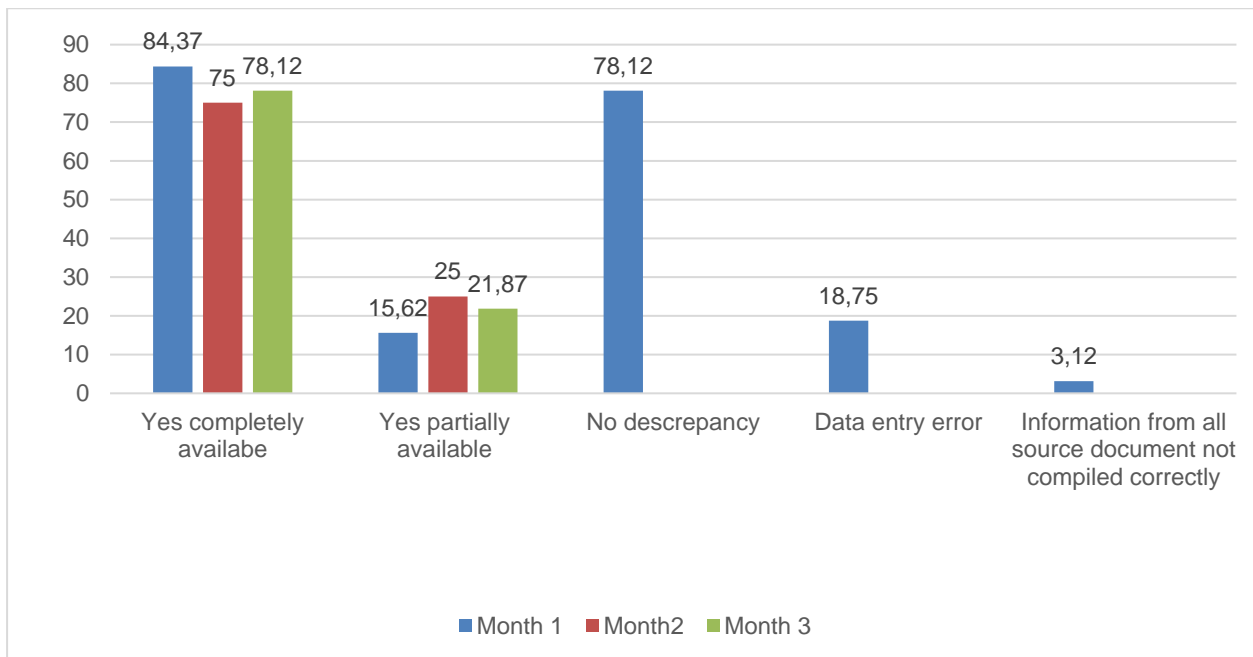


Figure 4.20 Percentage of health facilities with institutional delivery source documents in Gambella, Ethiopia (N=32)

- **HIV/AIDS document reviews**

Source documents were assessed for the number of pregnant mothers who received HCT, prophylaxis, ART coverage, and the number of patients on ART services over a period of three successive months. The findings showed that only 53% of assessed health facilities had complete source documents for pregnant mothers who received HCT, prophylaxis, ART coverage and number of patients on ART services for month one and month three. There was no discrepancy observed in 12 (37%) health facilities (see Figure 4.21).

The results of the current study are low compared to a study conducted in Uganda, where inpatient and outpatient departments showed completeness of data sources in 57% and 85% of facilities, respectively (Kiberu et al 2014:6). Evidence shows that public health interventions require quality data assessment to measure health outcomes as a result of health programme implementation (Nagbe, Yealue, Yeabah, Rude, Fallah, Skrip, Agbo, Mouhamoud, Okeibunor, Tuopileyi, Talisuna, Yahaya, Rajatonirina et al 2019:4).

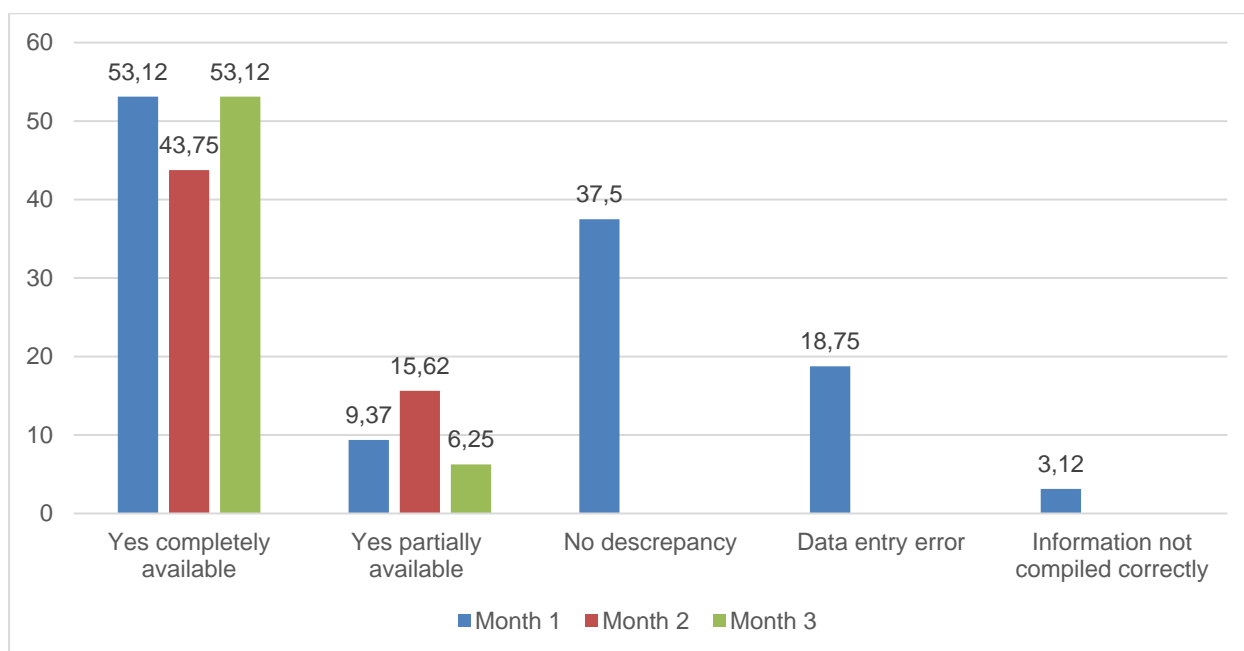


Figure 4.21 Percentage of health facilities with source documents for pregnant mothers who received HCT, prophylaxis, ART coverage ART services in Gambella, Ethiopia (N=32)

- **Immunisation data reviews**

Document reviews of immunisation programmes showed that just 46% of facilities had complete data sources with no discrepancies. More than half of the assessed facilities in Gambella had incomplete data sources that partially recorded the data, with information from all sources of documents found compiled incorrectly in 53% of the facilities (see Figure 4.22). A study conducted by Negussie, Kasahun, Asegid and Hagan (2016:4) in southern Ethiopia related the partial recording of immunisation data to the lack of children completing all vaccination doses.

A Nigerian study noted that stakeholders and decision-makers working on immunisation programmes were often in confrontations due to conflicting data being reported on the same immunisation programme as a result of the incompleteness of data (Etamessor, Ottih, Sahilu & Okpani 2018:1). Incomplete data sources were found to hamper the reliability and utilisation of immunisation data for decision-making processes, as the incomplete data could not reveal the real situation (Etamessor et al 2018:4).

The current study determined that the completeness of immunisation data sources was below 50%, which is less than the expected target of completeness; 75% is the WHO’s acceptable range of completeness for a functional health facility (Bhattacharya et al 2019:7).

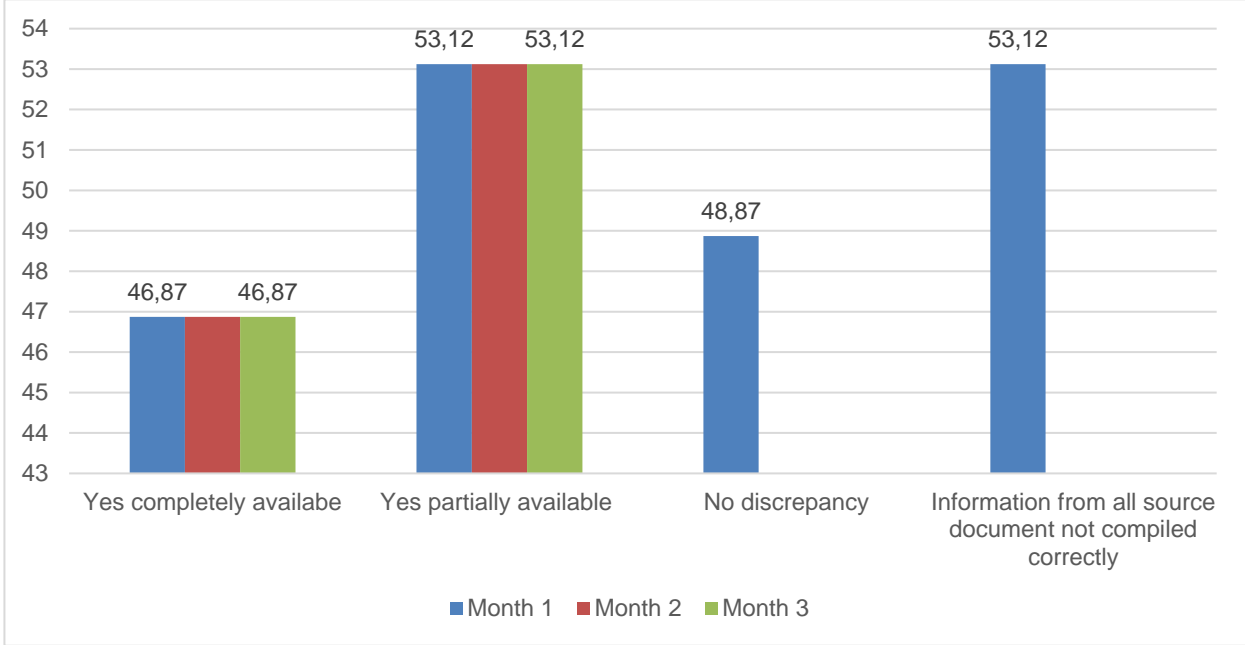


Figure 4.22 Percentage distribution of availability of immunisation data sources in health facilities in Gambella, Ethiopia (N=32)

- Availability of tuberculosis data sources**

The study showed that TB data sources with no discrepancies were available in 87.5% of the 32 health facilities that provided TB services. Document reviews were not conducted in the four (12%) facilities that did not provide TB diagnostic and treatment services (see Figure 4.23).

In line with these findings, a study conducted in South Africa on the completeness of TB patient records revealed that over 80% of patients’ reviewed data in facilities had complete records (Podewils, Bantubani, Bristow, Bronner, Peters, Pym & Mametja 2015:5). The current study contrasts with the findings of the study conducted on TB under-reporting in central Italy, where 57% of TB patients’ records were partially recorded in the larger TB database (Melosini, Ventrano, Dente, Cristofano, Giraldi, Gabbrielli, Novelli, Aquilini, Rindi, Menichetti, Freer & Paggiaro 2012:4).

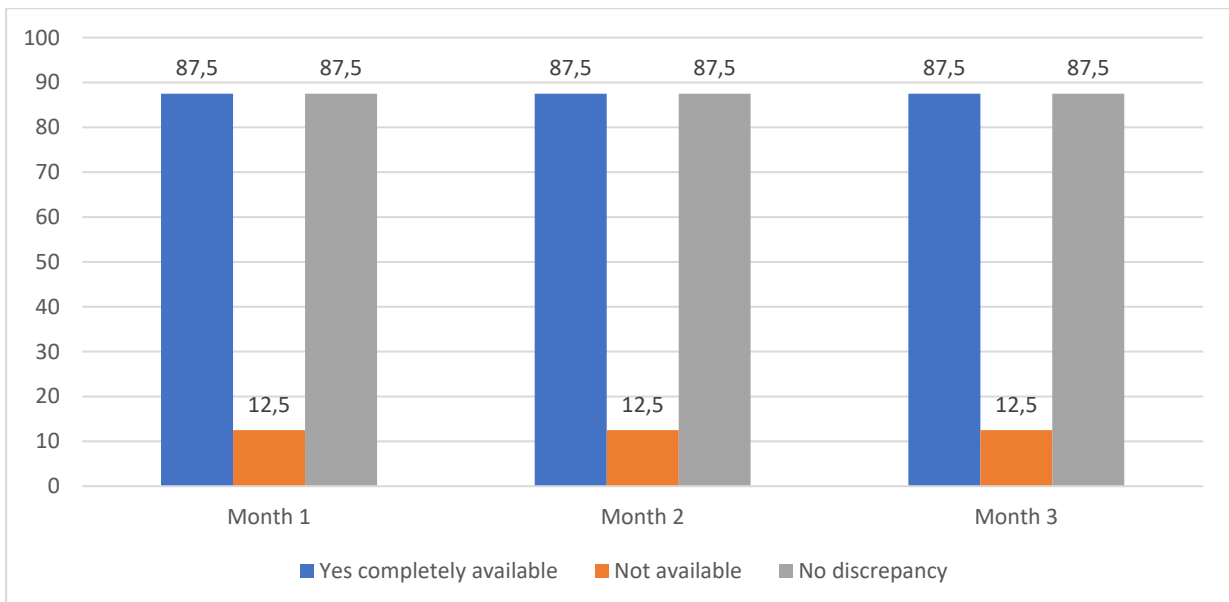


Figure 4.23 Percentage distribution of availability of tuberculosis data sources in health facilities in Gambella, Ethiopia (N=32)

- **Malaria document reviews**

Quarterly reports reviewed for completeness of malaria diagnosis and treatment showed that only 31% of the facilities had complete sources of reporting documents for the first month of the reporting period; and 28% of the health facilities had complete reports that had no discrepancies of data. About 68% of facilities had incomplete data sources in the first month, and 71% in months two and three. Information from all sources of documents was not correctly compiled in 71% of the health facilities (see Figure 4.24 below).

The findings are lower compared to what was found in a study conducted in northwest Ethiopia, where data sources were complete in 98% of health facilities (Alemu, Gutema, Legesse, Nigussie, Yenew & Gahe 2019:6). In Kenya, an improvement in malaria data completeness was related to the massive investments made by the health actors on malaria prevention and control (Githinji, Oyando, Malinga, Ejersa, Soti, Rono, Snow, Buff & Noor 2017:8).

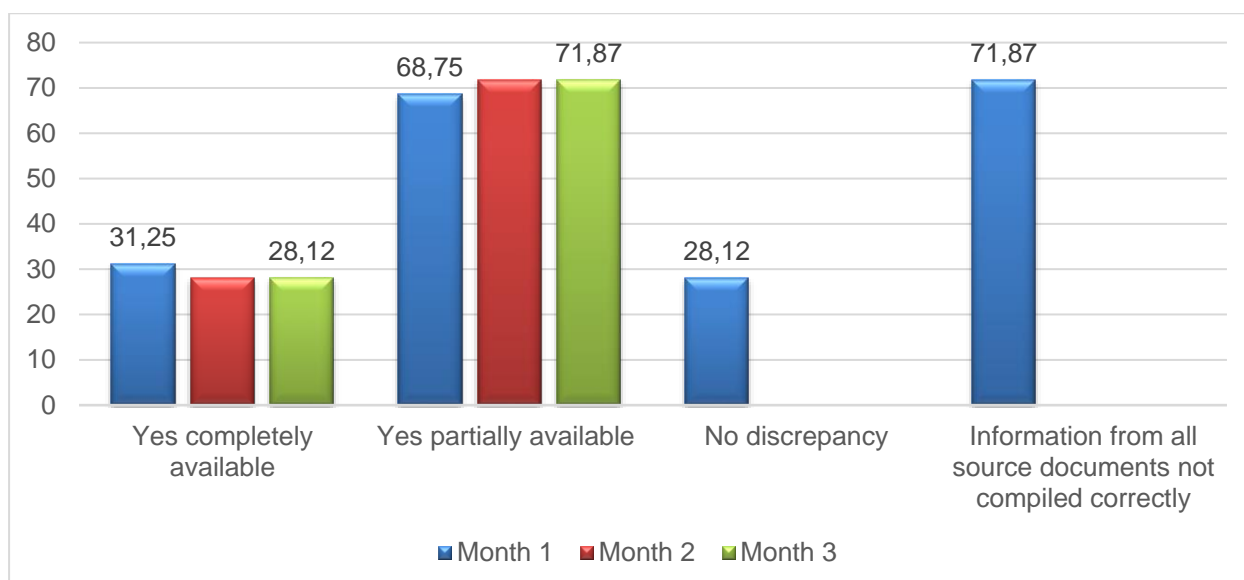


Figure 4.24 Percentage distribution of availability of malaria data sources in health facilities in Gambella, Ethiopia (N=32)

Section 4.3.2.1 above discussed findings on availability of public health services and required resources in the quantitative phase. Section 4.3.2.2 below explored and described the humanitarian emergency health needs and responses in the qualitative phase of the study.

4.3.2.2 Humanitarian emergency health needs and responses

This section discusses humanitarian emergency health needs and responses in relation to public health services. These were explored through qualitative data collection methods, in line with the methodology of the study discussed in Chapter 3. The discussion follows the main themes and sub-themes that emerged from the research questions and the coding and reduction of the data gathered through the qualitative research techniques. The discussion also presents the quotations from the transcribed interviews. Having employed qualitative design, this section further discusses findings.

4.3.2.2.1 Theme 1: Public health needs during humanitarian emergencies

This theme presents the responses from health experts and managers who were participants in the study, regarding what they observed as public health needs during a humanitarian emergency situation. The participants further mentioned health problems

and or issues which gave rise to specific public health needs during a humanitarian crisis in Gambella, as shown in Table 4.11.

Table 4.11 Theme 1: Public health needs during humanitarian emergencies

Theme	Sub-theme/Category	Problems and or issues
Public health needs during humanitarian emergencies	Need for public health services	<ul style="list-style-type: none"> • Low immunisation coverage • Lack of water supply, sanitation and promotion of hygiene • Poor shelter • Overcrowding
	Need for vaccines for preventable diseases and acute infectious diseases <ul style="list-style-type: none"> • Measles, polio • Diarrheal and acute respiratory infections 	<ul style="list-style-type: none"> • Inadequate health care workers • Disruption to normal health services • Inadequate government resources • Donor dependency on incentivised workers
	Need for communicable disease prevention <ul style="list-style-type: none"> • Malaria • HIV/AIDS • Tuberculosis • STIs 	<ul style="list-style-type: none"> • High prevalence of malaria and other acute infectious diseases among refugees; high number of flood victims and displaced people • Cultural, behavioural and structural barriers to awareness of HIV
	Prioritisation of public health services	<ul style="list-style-type: none"> • High number of vaccine-preventable diseases and communicable diseases. Poor maternal new-born and child health (MNCH) services • Lack of security and protection of displaced population, poor food and non-food supply, lack WASH and education services.

Table 4.11 reveals that meeting public health needs during humanitarian emergencies has become a priority for refugees and displaced people in Gambella region. Theme 1 has four sub-themes that are categorised into the need for public health services; the need for vaccinations of preventable diseases and acute infectious diseases; the prevention of communicable diseases, and prioritisation of public health services.

• Need for public health services

Health workers described their experiences related to the need for public health services during humanitarian responses. Despite the different perspectives offered by participants,

all participants mentioned the importance of providing public health services to crisis-affected populations in many ways and for various reasons. Some participants explained that 9 of 13 districts in Gambella share a border with South Sudan, and the ongoing conflict in South Sudan directly and indirectly affected districts of Gambella.

One interviewee explained:

“Host communities were the first people to get contact with the asylum seekers once they crossed the international borders. The asylum seekers started sharing everything with host communities, including the minimal health services that might be available. Whether the existing health facilities were prepared for the required capacities or not, people were coming to get health services. This region has many emergencies in which the need for health services is high. There were seasonal displacements of people from their homes due to flooding that sometimes affected even the urban districts and zonal headquarters of Nuer Zone (Nyinenyang town), and the health needs are constant. Despite the high need for health services, inadequate capacities of the health system at the district level pose risks for the crisis-affected populations. The pre-positioning by different actors of essential items in the humanitarian crisis-prone districts were inadequate; inadequate capacity for emergency preparedness increases the suffering of the crisis-affected populations.” (NZHD)

Most participants mentioned public health services as a need among the people affected by a humanitarian crisis. These participants highlighted that absence of public health services can exacerbate the suffering of the victims of humanitarian crisis. Some participants from the districts with refugees mentioned that when conflict broke out in South Sudan, asylum seekers who reached entry points arrived in very poor health as a result of long journeys. In addition, the asylum seekers walked to Ethiopia with insufficient food and hunger hence they were malnourished on arrival. These factors subjected the asylum seekers (both children and adults) susceptible to diseases that could have easily been prevented, such as diarrhoea and upper respiratory tract infectious diseases. Poor living conditions in overcrowded dwellings, poor sanitation and no structured shelters were rife and mentioned as determinants of illhealth. As a result, children were vulnerable to measles, polio and other communicable diseases.

One participant from Itang District Health Office explained:

“No time should be wasted to establish public health services. During the South Sudan influx, we were requested to provide primary health services to asylum seekers. We accepted to offer humanitarian health emergency responses, as we were interested in protecting our own people, though there were no supplies. We made requests to health partners and, as a result, many lives could have been lost if it were not for the public health services that were provided by different health partners. At entry points and in humanitarian situations, overcrowding increases the spread of communicable diseases. Some people were on the road with no proper shelter, no clothes and with insufficient food, no accessible protected sources of drinking water, poor hygiene, overcrowding, in rainy and malaria seasons. Respiratory tract and measles outbreaks could be issues; cholera outbreak as well.” (ITDHO)

One participant explained that the host community was interested in responding positively to the refugees’ needs since newly arrived refugees could spread h new diseases that could be contagious to the host community. Alternatively, the refugees could acquire diseases that exist in the host community.

A participant said:

“South Sudanese refugees came from their country, where cholera was declared as an epidemic; measles was also declared an epidemic. With the support from humanitarian partners, non-selective vaccinations to all under 15-year-old children were given against measles and polio. Despite the efforts that have been made to provide the measles vaccination to all children below 15 years of age, the measles outbreak that happened in Gambella was started in Dimma District and then spread to other districts.” (DDHO)

Most participants explained that the ongoing conflict in the other side of South Sudan not only brings in asylum seekers, but also affects the host communities living in the border villages.

One participant noted that:

“The South Sudanese conflict displaced so many people living at the borders; the border villages were also displaced when the fighting crossed the border. The displaced people have been living where there were no shelters, insufficient food, no latrines, open defecation ... diarrhoea and upper respiratory tract infections threaten the lives of human beings. Public health intervention was the most needed humanitarian response to save lives, together with the need for food.” (LRDHO)

The majority of the participants mentioned that, in most cases, displaced people need immediate public health responses. The participants also shared that displaced people face difficult living conditions. Issues like a lack of clean water, unhygienic conditions, disruptions in the health systems to deliver routine health services to women and adolescents – such as ANC, FP services, and institutional delivery – could contribute to increased morbidity and mortality related to humanitarian crises. Health managers stated that as the South Sudan civil war continued, resulting in a significant humanitarian situation for neighbouring countries (including Ethiopia), public health services were vital to save vulnerable lives and protect the host communities.

In line with these findings, a study conducted in Jordan revealed that vulnerable people during a humanitarian crisis fundamentally deserve public health services and protection, despite any limitations or restrictions from the host government (Brun 2016:395). Black et al (2016:274) state that with the existing political instabilities that contribute to ill health, maternal, child and newborn-related morbidity and mortality is a constant challenge; public health services are thus vital as a response to humanitarian crises.

- **Need for vaccines for preventable diseases and acute infectious diseases**

There was a consensus among the study participants that malaria, measles, polio, diarrhoea and respiratory infections are the most common public health challenges during emergencies. The disruption of routine public health service provisions due to humanitarian crises and inadequate health care services for emergency-affected populations could fuel the affected people’s suffering.

One participant commented:

“The risks of communicable diseases like diarrhoea, respiratory tract infections and vaccine-preventable diseases, which are public health threats, increase during the emergency where health services are not prepared.” (MKDHO)

Another explained:

“Public health services during humanitarian situations are essential, as low immunisation coverage of emergency-affected children, poor sanitation and hygiene, overcrowding and poor shelters, and inadequate food could cause increased risk of diseases. At the border of the South Sudanese entry point for the newly arrived influx of refugees and displaced people, disease outbreaks and flood emergency situations are the most common public health problems.” (LRDHO)

One participant also mentioned:

“Primary health care services to emergency-affected populations, public health services to flood-affected communities, health emergency provision to internally displaced people – either because of cross-border conflicts, or disease outbreaks like measles, acute diarrheal diseases and malaria – are life-saving interventions that we frequently implemented to prevent the disease outbreaks.” (NZHD)

Most participants recognised the importance of public health service provisions, not only to the newly arrived refugees, but also for the existing refugees and host communities in the country. Participants mentioned that providing public health services to internally displaced and flood-displaced people are vital. Diseases and disease outbreaks, such as malaria, measles, acute watery diarrhoea, among others, are the most common public health problems. Mass population movements can increase the risk of vaccine-preventable diseases among refugees, internally displaced people, and host communities. Displaced people can introduce pathogens that can cause epidemics in their new location, and they come into contact with new pathogens either upon arrival into the host community or along the way (Lam et al 2015:2634).

One participant put it this way:

“Public health services for the newly arrived refugees at the border to South Sudan became non-stop in this district due to the risk of communicable diseases and disease outbreaks.” (DDHO)

Evidence shows the need for vaccination services during humanitarian emergencies. A study conducted by Culver et al (2017:1) found that increasing vaccination coverage during complex emergencies can reduced morbidity and mortality related to vaccine-preventable diseases during the humanitarian situation. Another study conducted on displaced populations found that humanitarian emergency-affected populations need accessibility to life-saving interventions, including services targeted at vaccine-preventable diseases (Lam et al 2016:2).

- **Need for communicable disease prevention**

In terms of the communicable disease burden during humanitarian situations, participants mentioned that malaria, TB, HIV/AIDS and STIs are significant public health problems that threaten lives.

One participant stated:

“Malaria, measles, polio and other communicable diseases common to displaced people, like diarrheal diseases, respiratory tract infections, TB and HIV, are the most common diseases for refugees, flood-affected and internally displaced people.” (GRHB)

A participant expressed:

“HIV/AIDS, tuberculosis, malaria, measles, diarrhoea, upper respiratory tract infections are public health problems that contribute much to maternal and under-5 mortalities.” (MZHD)

Another interviewee noted:

“As a result of displacements, the public health problems are those related to communicable diseases such as diarrheal diseases, respiratory tract infections, malaria, measles, tuberculosis and HIV/AIDS.” (AZHD)

Malaria and other acute infectious diseases among refugees, flood victims and displaced people

The health managers explained their experience of the burden of malaria and other acute infectious diseases among crisis-affected populations.

One participant explained:

“Gambella is watery area where villages in two zones of Nuer and Anywaa are prone to seasonal floods with various vectors and water-borne diseases. Malaria and other vector-borne illnesses are the most morbidity causes among the flood-affected communities. Gambella Region has a history of humanitarian occurrences related to asylum seekers, who have been entering the country from very far ... on foot to reach the entry points. The risk of contracting malaria and water-borne diseases is also high during their arrival.” (GRHB)

Another participant added:

“Malaria, as a vector-borne disease, and other acute infectious diseases and respiratory-related symptoms, were the public health problems, as the majority of refugees are women ... and children facing nutritional conditions. The low availability of safe drinking water, poor hygienic, the overcrowding ... could also worsen the crisis-affected population when no primary health care services are found when they arrive in this malaria-endemic state.” (LRDHO)

In Anywaa Zone, participants similarly explained that communicable diseases are public health problems fuelled by low latrine coverage in the districts and regional state as a whole. At its annual review meeting in June 2020, Gambella Region reported that only 10% of villages use latrines. Water supply is a severe issue, with the majority of the rural community using unclean water supplies, as most water schemes are damaged and in

need of maintenance. Rural areas in this region therefore depend on unclean drinking water. Overcrowding, low immunisation coverage and poor nutrition are also risk factors for measles outbreaks. Being malaria-endemic areas, displaced people suffer from malaria, plus acute respiratory tract infections due to poor living conditions and insufficient clothing. Inadequate health care is also a factor that increases the incidence of TB.

Cultural, behavioural and structural barriers to awareness of HIV

Most participants cited issues related to cultural, structural and behavioural contexts as predisposing factors that could fuel disease epidemics. The prevalence was explained by some participants who referred to the Ethiopian Demographic and Health (EDHS) (2011) survey, although responses varied from zone to zone due to different contexts. One participant was asked to elaborate on why HIV/AIDS is such a significant public health problem in Majang Zone.

He said:

“Let me explain a little bit to you. Everybody knows about this disease. For your information, the EDHS 2011 has shown that HIV/AIDS prevalence in this zone was 13.6 compared to 9.7 in Anywaa Zone and 1.3 in Nuer Zone ... and we see this as a genuine finding due to different issues. There are different behavioural factors that exist and might be reasons or have a contribution to the HIV prevalence increase in the Majang community ... Even though the prevalence has reduced recently ... as a result of the implementation of some modifications on cultural practices that were identified as risks ... HIV/AIDS still a leading a social, economic, and public health problem in this locality. The encouragement of sexuality and multiple partners among adolescents, which was much practiced in Majang community, was seen to have link with the high HIV prevalence. A discouraged behaviour was where adolescent boys in Majang community aged 14 and above would build a small hut (locally ‘tukul’) with the intention of practicing sex with girls of the same age, locally called ‘dhefo’. Another discouraged cultural practice was where adolescent girls would travel from the villages to district towns on weekends to exchange sex for small cosmetics, called ‘jojde’ in Majang language.” (MZHD)

Indulgence in sexual activities in this community might be the reason why Majang Zone's HIV prevalence is the highest in the country. In terms of behavioural factors, although people are aware of HIV/AIDS as a serious disease, awareness about the benefits of condom use is still lagging. The lack of available HIV services is a structural factor, even among those aware of HIV prevention.

One participant from the zonal health department stated:

“One point that I would also want to elaborate on high HIV/AIDS prevalence is that Majang Zone has a higher presence of farms for agriculture and coffee than any other part of the region. There are no interventions on prevention and control of HIV as a service in those farming locations. The unavailability of HIV/AIDS voluntarily counselling and testing (VCT), ART and information and communication services increases the risk of HIV infections.” (MZDH)

During the interviews, low awareness on prevention and control measures for HIV/AIDS were reported by the participant to be a particular burden for women.

The same participant continued:

“The demand creation toward acceptance of prevention and control of HIV/AIDS is still a major challenge, despite efforts that were made to bring about behavioural change. The utilisation of services is low ... low ANC coverage ... low PMTCT service uptake ... low institutional deliveries, low postnatal follow-up, although the services are available in the facilities. The fear of stigma and discrimination puts another burden onto women. Men in urban areas who can afford travel costs can go to other areas and get tested without telling their wives of their status. They might start the ART somewhere while women are suffering only for the fear of stigma; perhaps all are related to low awareness-related issues... There is also a need to have a protocol available for the solid provision of public health services to the displaced people.” (MZDH)

Some participants expressed other structural factors and elaborated on them. One participant from Anywaa Zonal Health Department explained:

“HIV/AIDS is also a public health problem in Anywaa Zone with its cultural, behavioural and structural predisposing factors. Being the region’s biggest investment area for national and foreign investors, who employ mostly unaccompanied men with no consideration of HIV/AIDS services, the refugees’ presence, in addition to behavioural factors, poses a high HIV risk in Anywaa Zone. This differs from other zones by hosting 42% of the refugees who are currently settled in Gambella Region. The structural factors refer to the absence of the required HIV services to high-risk groups, as well as to gold miners in Dimma, and farm workers in Gog and Abobo. Some cultural barriers, which contributed to HIV prevalence among young people, have been modified, such as ‘changwad’ – a practice whereby adolescent boys and girls contribute a small amount of money to organise a party where they dance and drink alcohol all day at weekends. This leads adolescents to practice unprotected sex under the influence of alcohol.” (AZHD).

Another participant illustrated:

“This district is well-known for cotton and agricultural farms, where many mobile farm workers, youths from various neighbouring regions of Ethiopia, have been coming for many decades. Single men getting money and with no services available at agricultural sites was a predisposing factor and burden to the surrounding host community. Similarly, malaria is common – these young men came from low-risk malaria areas to this high-risk malaria region, and the investors who brought the daily laborers to work in their farms have provided their workers with no services. All those labour workers, who might total more than the population of the district, use the existing health system, resulting in overstretched services and resources.” (ABDHO)

One of the participants linked the lack of HIV awareness to behavioural factors as follows:

“Refugees do not focus on HIV as a problem due to low awareness; their first problem is related to food and non-food items. Not only do they have less care about HIV/AIDS, but also low awareness of HIV/AIDS prevention and control. The refugees who came to Ethiopia after escaping violence... focus more on security

and protection and the provision of the health services than life-threatening illnesses. Gog District hosts a refugee population of more than 80,000 refugees, compared to less than 30,000 in the host community – not only a big number of refugees, but also a big problem of low HIV awareness.” (GGDHO)

The same participant continued:

“In addition, the presence of agricultural farms with large numbers of farm workers with no HIV-related services on their farm sites, who share the existing health services. Health facilities are overstretched. Malaria and measles outbreaks are very common. The numbers of people coming in and out of the district from the neighbouring country of South Sudan makes the district vulnerable.” (GGDHO)

Another participant added:

“The prevalence HIV in Dimma Woreda is also among the areas with the highest figure in this region. This is because of alluvial gold miners – single men from the neighbouring regions of Ethiopia who work in gold mining areas in the districts with no services in those areas. The young men think only about money, not HIV/AIDS as a disease with no cure.” (DDHO)

The study reveals the needs for the prevention of communicable diseases during the emergencies as confirmed by the findings of a study that was conducted among the refugees who were hosted in a village in South Sudan. The researchers of a study in South Sudan found that the prevention and control of communicable diseases was prioritised as health needs of refugees (Rull et al 2018:2). Other findings found that poor living conditions during the humanitarian situations can produce favourable condition for spread of communicable diseases (Tellier, Kiaby, Nissen, Ohlsen, Doedens, Davies, Petersen, Christensen & Roche 2017:307).

- **Prioritisation of public health services**

In this sub-theme, health workers explained their experience of the need to prioritise public health services. Considering the contexts and needs of crisis-affected populations, all participants mentioned how crucial it is to prioritise public health services, for a wide variety of reasons. For example, participants shared that some diseases could be

imported into Gambella from South Sudan, such as cholera and measles. The absence of public health services during emergencies could also put the lives of vulnerable populations at risk; first and foremost, women and children. Similarly, some communicable diseases might spread because of poor living conditions and overcrowding, such as acute respiratory tract infections, diarrhoea, TB and other chronic illnesses that can affect both the host and refugee communities.

One participant elaborated:

“During the acute refugee influx, the suffering of women and children was terrible. Public health services were needed more than ever... Access to health services in the host community was recognised as very essential by the people who we served.” (LRDHO)

Most participants also suggested that public health services should be a priority, as healthy people can do things for themselves in relation to other basic needs. In short, health is a determinant for other basic needs.

One participant noted that:

“The absence of public health services to people in need can double the suffering that the individual goes through, as people who are not well can't support themselves and their family. Health should be given a priority to save lives and for the healthy person to perform other activities to support his/her life.” (ITDHO)

Vaccine-preventable diseases, communicable diseases and maternal new-born and child health (MNCH) services

The participants explore their experiences on the issues of prioritisation of services targeted at vaccine-preventable and communicable diseases among emergency-affected communities.

The majority of the participants revealed that prevention and control interventions for diseases that cause high morbidity and mortality among refugees and displaced people should be given priority. Setting priorities does not mean ignoring other challenges but

organising a response that could urgently save lives. Vaccine-preventable diseases and communicable diseases were the highest priorities mentioned by participants.

One participant stated:

“The complex humanitarian responses that include the provision of health promotion and disease preventions are feasible. I have learned that the humanitarian response that includes health services, either to the refugees or host community, needs to be a priority in this region.” (GRHB)

Most participants mentioned that although immunisation services for vaccine-preventable diseases are available in most public health facilities, highly populated areas still have substantial numbers of unvaccinated children who also contribute to low coverage of immunisation in all forms.

Another participant mentioned:

“In Nuer Zone, there is a need also to double our efforts to reach children for vaccinations. There are so many unimmunised children in Nuer Zone and if these children get vaccinated, the current low immunisation coverage in the region could be improved and child deaths might decrease. Moreover, the need for public health services during the humanitarian responses was also very high.” (WNDHO)

Most participants stated that complex humanitarian responses should be a priority in order to address the different needs of the community.

One participant noted:

“In Anywaa Zone, primary health care services for displaced people and communicable diseases, including health promotion and disease prevention, are very essential.” (AZHD)

Security and protection, food and non-food, WASH and education

This sub-category refers to health managers' concerns in prioritising public health services during humanitarian responses. The majority of participants mentioned their

satisfaction with public health considerations in humanitarian responses. Some, however, criticised UN agencies for paying more attention to protection-related interventions, consisting of registrations, protection and security concerns, and food distribution to asylum seekers.

One participant explained:

“Even though the refugee agencies should work according to the mandates given to them as organisations, providing health services should not be less than, but equal to, security and protection, food and non-food items, water and education. Making health services available for the affected people is very crucial; public health interventions need to be established immediately during emergencies. Asylum seekers may bring in communicable diseases that can be more fatal than war, or the asylum seekers may develop some communicable diseases new to them, and that could result in epidemics, leading to a great loss of lives. Additionally, some asylum seekers might be on treatments for chronic diseases like tuberculosis, HIV/AIDS etc & if those needs are not addressed because of unavailability of public health service provisions, the risk of death and transmission to others could be high. All of these make health needs a priority to address.”
(GRHB)

Another participant mentioned that the UN should consider prioritising public health services during humanitarian responses:

“The security situation might affect a specific community or specific places, but diseases can affect everybody, including communities unaffected by a humanitarian crisis. For that reason, the UN and other humanitarian partners should prioritise health.” (LRDHO)

Evidence shows that public health services are equally as important as other services during the humanitarian emergency. Sphere Association (SA) (2018:311) notes that a humanitarian emergency crisis of any cause commonly has high morbidity and mortality related to communicable diseases as a result of poor living standards. Addressing the essential needs of humanitarian emergency-affected people can prevent the communicable disease-related excessive morbidity and mortality (Rull et al 2018:2). Tellier et al (2017:260) also support the prioritisation of public health services targeted at

infectious diseases, measles and other communicable disease-prevention and control services among humanitarian affected populations.

4.3.2.2 Theme 2: Availability of public health services in humanitarian responses

Under this theme, health managers relayed their experiences with humanitarian responses in Gambella Region. Though the humanitarian responses were mentioned by all participants, the responses are heterogenous, from area to area, with the greatest humanitarian burden including refugees, flood and disease outbreaks, as discussed below (see Table 4.12).

Table 4.12 Theme 2: Availability of public services in humanitarian responses

Theme	Sub-theme/Categories	Problems and or Issues
Availability of public health services in humanitarian responses	Public health in emergency responses for refugees <ul style="list-style-type: none"> • Primary health care services • Arrival vaccinations • Public health emergency key messages 	<ul style="list-style-type: none"> • Inadequate preparedness and response plan • Inadequate supplies required for health services • Lack of government funding • Inexperienced health workers running public health institutions • High staff turnover at various levels and frequent changes of leadership
	Public health emergency responses for flood-affected populations <ul style="list-style-type: none"> • Primary health care services • LLINs • Public health emergency key messages 	
	Health emergency responses for disease outbreaks <ul style="list-style-type: none"> • Primary health care services • Arrival vaccinations • Public health emergency key messages 	
	Importance of public health services	

As evident in Table 4.12, Theme 2 addresses the identified public health needs during humanitarian situations in Gambella region. Theme 2 has four sub-themes that are categorised into public health in emergency responses to refugees; flood-affected populations; disease outbreaks; and importance of public health services.

- **Public health in emergency responses for refugees**

In this sub-theme, participants explained the humanitarian responses provided during the refugee influx.

Despite Gambella being the second smallest regional state in Ethiopia, with a weak health system, the South Sudanese refugees who have entered into Ethiopia via Gambella receive primary health care services at the entry points. The public health services established at the entry points also have referral linkages from primary health facilities to secondary and tertiary hospitals for advanced services. However, participants stated that with limited government resources for the provision of referral services, partners who have been offering incentive payments for health workers also support the referral services by assigning ambulances at entry points.

The majority of the participants explained that the availability of primary health care services includes health promotion, and the prevention and control of communicable diseases among emergency-affected people and the surrounding host communities in the existing health facilities at entry points. Clinical services were provided along with the distribution of long-lasting insecticide nets to internally displaced people and refugees, as malaria is endemic in the region.

The host communities in areas with refugee communities were also considered in the provision of emergency health services, as the services were coordinated and provided by the local health system. The participants explained that the regional health bureau is exercising a leadership role by ensuring that all host community districts with refugees, as well as refugees in their respective camps, receive essential health services during crises.

Most participants revealed that different public health services for emergency-affected people have so far been supported by Gambella RHB, including coordination with the health departments of three zones, health offices of 13 *woredas*, and city administration and facilities offering health services. The study participants also explained that financial and material support was received from health partners. Gambella RHB mobilised health workers from the emergency-affected health centres to provide primary health care services. Those services included non-selected vaccination at the entry points that

covered host communities and targeted refugee children to be vaccinated against measles and polio, and to receive vitamin A supplements and deworming tablets. The clinical services offered to crisis-affected people, including surrounding host communities, were also provided with the support of the RHB's humanitarian partners.

Additionally, public health messages were developed for dissemination among refugees and people displaced due to conflicts and natural disasters, living in crowded areas with poor sanitation, unhygienic living conditions, and inadequate shelters.

One participant explained:

“The risk of communicable diseases was high, and with support from the health partners, the health promotions and disease prevention activities were carried out.”
(GRHB)

However, the services provided were not without challenges, as elaborated by another participant:

“Being an emergency response with limited government capacity, most services were based on donor support, ignoring some important services like inpatient services for adults, and communicable diseases like HIV/AIDS and tuberculosis.”
(LRDHO)

One participant acknowledged the role of government actors at every level, from health departments, health offices, zones, *woredas* and facilities, in addition to the humanitarian partners:

“The health departments in zones and health offices in all districts have been supporting the primary health care services to the affected populations. Non-selected vaccination has been provided to all targeted children below 15 years of age. Health facilities in the emergency-affected areas have been supported in terms of supply and capacity building. Some outreach services have been supported for hard-to-reach children, especially those with high unvaccinated children through partners' support.” (NZHD)

Despite the provision of primary health care services, the need for surveillance systems was recognised, as all affected individuals might not reach the health facilities:

“Primary health care services that include clinical consultations for all asylum seekers have been provided in the existing health facilities. All the targeted children have been vaccinated against measles and polio viruses. Children from 12 months and from 2 years to 5 years have also received vitamin supplements and albendazole deworming tablets, respectively. As most cases were also communicable diseases, health education using locally translated public health key messages was also provided. Furthermore, surveillance systems for monitoring the health status of the emergency-affected population were also supported, as the provision of primary health care services should not merely cover interventions to prevent and detect the diseases under the WHO’s reportable diseases.”
(LRDHO)

During humanitarian responses, one participant mentioned including host communities in service provisions:

“There were clinical consultations for all host communities during refugees’ humanitarian responses and flood and IDP responses. Targeted children were vaccinated against measles and oral polio viruses. Vitamin supplements and deworming tablets were also given to all targeted children. There were vaccination campaigns, social mobilisations on disease prevention, and control interventions.”
(WNDHO)

Evidence shows that humanitarian responses to identified needs not only alleviate human suffering or save lives, but also human dignity (Guraro 2016:20). The findings of the current study are supported by Puchner et al (2018:5), who claim public health responses to refugees and migrants are recognised as essential services.

- **Public health emergency responses for flood-affected populations**

This sub-theme refers to health managers’ experiences in managing emergency health responses among flood-affected communities. Public health facilities should be prepared to assist flood-affected communities during emergencies.

One participant revealed:

“In 2014, UNHCR established the Lietchuor Camp in Makuey District for South Sudanese refugees. In the same year, around August, the camp and host communities faced another emergency due to a refugee influx. Both the host community and refugees were displaced in their respective settings. Public health services were threatened by a lack of resources, as there was no access road for humanitarian agencies and regional government. Existing health facilities had stockouts, as the services were overstretched by the mix of refugees and host communities in the displacement areas. There was a UN-hired helicopter company that used to bring the emergency drug kits for primary health care services. The services were provided to host communities and refugees as life-saving interventions. Moreover, with the support of different agencies, primary health care services were freely provided to both the refugees and host communities.”
(MKDHO)

Cosgrave (2014:16) supports the provision of public health services to flood-displaced populations since there is a high risk of disease outbreak and high transmission of communicable diseases that are fuelled with poor sanitation conditions, unclean water and interrupted health care services. The current study reveals inadequate public health responses to flood-affected populations. A similar situation was reported in India, where public health facilities were ill-prepared to handle flood-emergency responses (Phalkey et al 2012:6).

- **Health emergency responses for disease outbreaks**

Health managers shared their experiences of epidemic investigations and responses under this category. Public health services (medical services) were provided to displaced people in emergency-affected facilities, including services targeted at controlling measles. The regional bureaus and health partners coordinated measles vaccinations in all *woredas*.

“Measles was contained with the essential drugs we received from the RHB, supported by partners. Awareness creation was provided for reproductive health services, prevention of STI and HIV transmission, including family planning ... to prevent unwanted pregnancy, birth spacing, and unsafe abortions.” (MZHD)

Another interviewee added:

“The provision of the measles vaccination to all targeted children was provided and the epidemics were contained with health partners’ contributions. During the malaria outbreaks, investors were called by the zonal and district authorities to make the malaria prevention services available for their laborers, though that did not happen.” (ABDHO)

- **Importance of public health services**

This sub-theme explored the health managers’ perceptions of the criticality of public health responses and continued provision of routine health services during humanitarian emergencies. Majority of participants mentioned that it is critical to offer primary health care services during crises. Refugee populations can easily spread diseases to host communities if an outbreak occurs and, in turn, host communities can be the source of outbreaks for refugee communities.

One participant explained that the public health services for crisis-affected populations are perceived as life-saving:

“Many lives were saved, especially during the measles outbreak and when internal displacement happened in the zone. Being an HIV-prevalent zone, the provisions of health service to reproductive age groups is very critical to prevent unintended pregnancy, reduce the spread of sexually transmitted infections, HIV/AIDS transmission, as well as to reduce the morbidity and mortality that could have been related to high fertility and low awareness of birth spacing.” (MZHD)

When asked about the importance of public health responses, another participant explained that people are on the move because of displacement due to floods or tribal issues. For instance, 47% of the regional population live in Nuer Zone, where people are semi-pastoralists:

“They move with their belongings to areas where no health services are available. Low coverage of social service indicators affects regional performance. The provision of outreach services to where people seasonally move is essential. In

addition, the majority of South Sudan refugees entering into Ethiopia in districts of the Nuer Zone and the absence of public health services could result in a serious disease outbreak that could claim many lives.” (NZHD)

Displaced people and refugees are at a greater risk of infection, and also have a high risk of morbidities and mortality due to poor living conditions, as explained by one participant:

“The public health services we provided to the displaced refugees and host community during the flood emergency response in Makuey District was not a choice but to save the lives of vulnerable populations. The exposure to communicable diseases was high, as the people were living in open areas with not enough shelter, coupled with open defecation, in the rainy season. Many lives that we could easily have lost were saved.” (MKDHO)

One participant mentioned that most emergencies happened during the rainy season, which could also heighten the need for public health response:

“The South Sudanese influx started during the rainy season in April 2014. Gambella in general has a long rainy season which usually starts from April up to October, sometimes up to November, depending on the situation. It is a high malaria risk regional state, as well. During the time of the refugee arrival, the overcrowding, poor hygienic conditions and lack of water supply complicated the emergency. The vulnerability to diseases was not limited to tuberculosis, and other communicable diseases could not be ruled out. The provision of public health services was important in reducing the morbidity and mortality related to the humanitarian crisis.” (LRDHO)

Another participant firmly stated that the provision of public health services during the humanitarian situation was a life-saving intervention:

“People with no capacity could easily die; any communicable disease, if not contained, could easily have resulted in an outbreak in the dire situation people were living in.” (WNDHO)

Many lives could have been lost if not for the public health services provided by health workers, and with the full support of all health partners:

“You couldn’t imagine – people were living on the road. Forget about shelters, clothes, and with insufficient food.” (ITDHO)

Humanitarian responses were also mentioned by a participant to have saved lives, specifically those of children:

“It is very important to provide public health services during the humanitarian responses to save the lives of human beings... especially the children.” (ABDHO)

Though Olu (2017:4) suggests a resilient health system to respond to any public health problems, several issues have been identified during a humanitarian emergency situation. These include inadequate preparedness and response plans; inadequate supplies required for health services; lack of government funding; inadequate health workers; and high staff turnover. Similar findings were reported in India, where a lack of human resources and other supplies were reported in primary health care facilities (Tripathy 2014:158).

4.3.2.2.3 Theme 3: Potential causes of humanitarian crises

Under this theme, the health managers explained their experiences of the causes of humanitarian crises in Gambella. During interviews, participants mentioned the historical situation and the current South Sudanese refugee emergency. Displacements of people due to floods, clan conflicts, cross-border attacks by cattle raiders and child abductions were among the humanitarian crises that required health responses. Disease outbreaks were also mentioned as other causes for humanitarian crises in this region (see Table 4.13).

Table 4.13 Theme 3: Potential causes of humanitarian crises

Theme	Sub-theme/Category	Problems and or issues
Potential causes of humanitarian crises	Current refugee influx and history of influxes	<ul style="list-style-type: none"> • Instability and war
	Internal displacements caused by floods, clan conflicts and cross-border attacks, cattle raiders and child abductions Means of knowing about the occurrences	<ul style="list-style-type: none"> • Prone to flooding; ethnic conflicts; cattle raiders; and child abductions
	Diseases and disease outbreaks	<ul style="list-style-type: none"> • Weak health systems with no emergency preparedness and response plan

Table 4.13 reflects Theme 3, that is, identifying the potential causes of humanitarian emergencies in Gambella region. Theme 3 has three sub-themes that are categorised as: current refugee influx and history of influxes; internal displacements caused by floods, clan conflicts and cross-border attacks, cattle raiders and child abductions; diseases and disease outbreak-related causes of humanitarian emergencies in Gambella region.

- **Current refugee influx and history of influxes**

This sub-theme refers to the health managers’ assessments of the current and historical refugee influxes in Gambella.

The participants mentioned that this region has a long history of hosting refugees from Sudan, including during the long civil war in the 1980s, and hosting South Sudanese refugees who have escaped the recurrent humanitarian situations that displaced thousands of people. Gambella is a region where every district faces various humanitarian situations based on the different risks in the area’s bordered districts.

One participant said:

“The Itang District ... had a history of hosting South Sudanese refugees during the North and South Sudan civil war of the 1980s. South Sudan, which is Christian dominant, got its independence in 2011 from Sudan, which is Muslim dominant. The Itang District had a large refugee camp that hosted more than 100,000 people, the biggest camp during the time, even in the East African region. Three years after

being separated from Sudan, as an independent country, the young nation repeated history by waging a conflict among themselves, resulting in Gambella Region receiving a huge influx of South Sudanese refugees. Since 2014, the South Sudanese refugees have entered into Ethiopia through six entry points, and one entry point for refugees into Itang District was via Akula District and settling in Akula village. In the same year, 2014, two new refugee camps were established in Itang that hosted more than 140,000 refugees. The biggest and third refugee camp currently hosting more than 100,000 population, Nguenyiel refugee camp, was established here in Itang District.” (ITDHO)

Regarding the recent influx of South Sudanese refugees to Ethiopia, participants mentioned that the humanitarian response that started in mid-2014 for newly arrived refugees was reduced in 2015 to July 2016, when warring parties signed a peace agreement. However, the peace agreement collapsed with renewed fighting in the capital Juba and elsewhere in South Sudan. Ethiopia then recommenced humanitarian responses in Gambella Regional State at three active entry points. The ensuing influx not only affected the Ethiopia villages at the borders, but also displaced host communities bordered with South Sudan.

Most participants mentioned that the state was not prepared for emergency health responses during this influx. There were no humanitarian organisations on the ground and because of some administrative challenges, the media were not available to advocate for the influx. The regional authorities had no option but to implement public health and nutrition interventions in order to protect the host community from refugees who were coming from locations where there were cholera, measles and polio outbreaks.

One participant noted that:

“When the South Sudan government captured Nasir county, which is near to our district, many refugees came in through the border when they heard that UNHCR had opened the registration of asylum seekers in Ethiopia. Asylum seekers were seen entering the country, where they mixed with the host community at the entry points, presenting the risk of communicable diseases for both the hosts and refugees. People at the border have no differences in terms of languages and culture, for both those in Ethiopia and in South Sudan. The mixture of the communities not only overstretched the services, but also increased the risk of

communicable diseases. The aim of the UN agencies, according to the mandate agreed with the RHB, focused on the provisions of primary health care service – a pure humanitarian-supported programme, using the existing health facilities and existing health workers.” (WNDHO)

One participant further added:

“Before the current conflict in South Sudan, Gog District had been hosting South Sudanese refugees in two sites (one site for Anywaa refugees and one for Nuer refugees) in the old Pinyudo camps that have existed for more than 25 years. In those humanitarian situations, the local health system is the first respondent for public health services.” (GGDHO)

Most participants explained that conflict happened in South Sudan along ethnic lines. Accordingly, refugees who have been entering the region were settled into separate camps based on ethnicity:

“There were some refugees who refused to be mixed with other refugees of different tribes because they fight among themselves in South Sudan.” (ITDHO)

Another participant revealed that Dimma *woreda* had a history of hosting refugees during the North and South Sudan civil war. However, after South Sudan won independence, the refugees were repatriated, and the camp was closed:

“After the eruptions of the current conflicts, one refugee camp was re-established in Dimma District and all the refugees who were received through entry points were transferred to this camp.” (DDHO)

Carver et al (2019:4) reported a similar situation regarding the historic and current South Sudanese refugees’ influxes to Ethiopia causing massive humanitarian responses. The findings of the current study also supported the study conducted in Syria where a refugee crisis raised the need for humanitarian responses in Gulf States (Pearce & Lee 2018:33).

- **Internal displacements caused by floods, clan conflicts and cross-border attacks, cattle raiders and child abductions**

This sub-theme refers to health workers' experiences of internal displacements due to floods and clan conflicts, as well as cross-border attacks due to cattle raiders and child abductions, which also cause humanitarian crises.

Prone to flooding; ethnic conflicts; cattle raiders; and child abductions

During the interviews, participants explained that displacements due to flooding are seasonal humanitarian crises in many districts in Anywaa and Nuer zones. The cattle raiders and child abductions from South Sudanese tribes, who still abduct children from Gambella and exchange them for cattle should they succeed, were also mentioned by the participants as causes of humanitarian crises. The issues of cattle raiders and child abductions increase fear among Gambella's people every dry season.

One participant explained that:

"In this state, the man-made (conflicts and refugees) and natural disasters, like floods, the disease outbreaks, like malaria, cholera, measles, and the refugee influx at the border of South Sudan, are the most common causes of emergencies."
(WNDH)

Another participant mentioned:

"The refugee influxes due to conflict in South Sudan, conflicts at the South Sudan border caused by cattle raiders and child abductions by the Murle tribe of South Sudan, were the causes of humanitarian crises. These also resulted in displacements of people at the entry points. There are also inter-clan conflicts between the two big ethnic groups and sometimes between lowlanders and highlanders due to land issues in Majang Zone, and seasonal floods." (GRHB)

It was also explained that bordered villages near South Sudan had an unpredictable displacement annually, even during the rainy seasons, where communicable diseases might worsen the situation. The population dislocations happen in the interest of

protecting their cattle from cattle raiders and their children from child abductors. Participants mentioned that government interventions have not been successful so far, due to instability in South Sudan. Many families in rural areas that border the Murle tribe have lost their children to abductions. Other participants stated that chronic clan conflicts over political issues had become a constant problem, often involving youth, many of whom are unemployed:

“Any disgruntled politician who is not happy with the leadership or wants to ‘shake’ the local government can use youths to disturb the leadership of the state by creating clan tensions, so that they get their share in the government.” (GRHB)

- **Means of knowing about the occurrences**

Health managers shared their experiences of how information is communicated during humanitarian situations. Most participants recognised the importance of existing structures at the community level, and that it is crucial to have frontline health workers in order to monitor humanitarian situations in the communities. Participants advised that health workers report any unusual conditions they observe in the communities and health facilities, and they report the arrival of asylum seekers to the district authorities when movements are observed at the borders. The participants further explained that when fighting reaches the borders, the host communities near the border are displaced.

One participant reported:

“The district received the information from the rapid response team, trained by the RHB and HEWs, when there was a sudden influx of refugees from the border. The presence of trained rapid response teams working with the woreda health offices on public health emergencies is very helpful in knowing all emergency situations, though some woredas have no rapid response team at the moment.” (GRHB)

Another participant explained:

“Health extension workers are there in the villages, they report any unusual movement to their supervisor in the district health offices. Some districts have a functional rapid response team that communicates and sends weekly reports to the zonal and regional health bureau. There was a time when we received

information from a health extension worker working at the health post that more than 14,000 asylum seekers had arrived at the border on the same day, the majority of whom were women and children.” (LRDHO)

One participant mentioned that the community and religious leaders also play a key role:

“We received information that fighting had reached the border, and the sound of guns could be heard from the other side. Our border with South Sudan is the Baro River; once you cross, then you are already in the other country. The community leader informed the district authority that the people were coming into the country.” (WNDHO)

Another participant recognised that public health workers have equal roles when it comes to protecting the community from public health threats:

“The health workers who work at health centres inform the health offices where the district health offices could inform the regional health bureau about the occurrences of crises. There was a time when a flood displacement occurred in main towns of the zone and districts. The displacement also affected health workers, as they live with communities ... Another was the measles disease outbreak that happened in two districts. When the health workers learned about it through health facility data, they reported the malaria trends to the district health office and to the zonal and regional bureaus. Based on the reports coming from the facilities, epidemics were detected and contained. You can't communicate the issues with no evidence or mobilise resources unless you have data at hand. You can see how data can simplify life; data is the backbone of the programme managers.” (GRHB)

Similar studies conducted in low- and middle-income countries found natural disasters, war and disease outbreaks as the major causes to unbearable humanitarian situations that place large numbers of peoples' lives in danger (Yates, Hellen, Joseph & Lantagne 2017:1). Moreover, Pyone et al (2015:648) noted that humanitarian emergencies as a result of disease outbreak, war, other man-made or natural causes of emergencies, have a negative health consequence for affected communities.

- **Diseases and disease outbreaks**

This sub-theme refers to health workers exploring their experiences of humanitarian situations caused by diseases and disease outbreaks.

Weak health systems with no emergency preparedness and response plan

Participants mentioned that malaria and measles were major causes of health emergencies in Gambella. In 2014, there was a malaria outbreak in most districts, where every village was affected. Again, participants stated that in the middle of 2018, the state responded to measles outbreaks that affected many districts and refugee camps in Gambella.

One participant explained:

“The measles outbreak that happened in Pagak entry point among South Sudanese refugee children in February to March 2014 was one example of a disease outbreak during the emergency. It happened when we had more than 20,000 asylum seekers at the same time at the entry point, waiting for UNHCR registration to get refugee status. At that point in time, the need for health services that were unavailable was so high. The existing health facility was less prepared to offer primary health care services to those asylum seekers, who were almost equivalent to one health centre’s catchment population, according to health care policy of Ethiopia (25,000 people for one health centre).” (NZHD)

Similar results were reported where measles outbreaks in Ethiopia and Kenya were linked to newly arrived refugees (Lam et al 2016:2). Another related situation was reported where a humanitarian emergency caused a measles outbreak that affected refugees, health care workers and volunteer workers (Jones et al 2016:1).

4.3.2.2.4 Theme 4: Challenges during humanitarian responses

This theme refers to health experts who explained the challenges the humanitarian responses caused during a wide range of emergencies.

Table 4.14 Theme 4: Challenges during humanitarian responses

Theme	Sub-theme/Category	Problems and or issues
Challenges during humanitarian responses	Lack of emergency preparedness and response	<ul style="list-style-type: none"> • Lack of emergency preparedness in the emergency
	Unavailability of needs-based protocol	<ul style="list-style-type: none"> • Unavailability of required resources for public health services • Operational challenges • Humanitarian protocol can revive community platforms
	Inadequate health services for seasonally mobile populations	<ul style="list-style-type: none"> • Semi-pastoralist community
	Poor supply chain management	<ul style="list-style-type: none"> • Unavailability of services • Health workers' skills • Inaccessibility of roads • Supply effect on health-seeking behaviour
	Funding shortfall	<ul style="list-style-type: none"> • Domestic resource allocations • Donor resources allocations against the need on the ground • Shortage of funds affects service provision
	Weak monitoring and evaluation systems	<ul style="list-style-type: none"> • Weak data management systems • Inadequate supervision and programme reviews • Weak surveillance system, poor coordination, advocacy and partnership • Unavailability of data-capturing tools • Scarcity of the budget
	Poor infrastructure	<ul style="list-style-type: none"> • Unavailability of electricity and water in health facilities • Poor health service delivery • Inadequate diagnosis and equipment • Poor communication systems
	Weak referral systems	<ul style="list-style-type: none"> • Inadequate ambulance services • Inadequate budget for fuel • Inaccessibility of roads
	Lack of integration	<ul style="list-style-type: none"> • Inadequate capacity of actors and change in attitudes • Funding scarcity
Inadequate human workforce	<ul style="list-style-type: none"> • High staff turnover and unskilled health workers • Weak coordination and inadequate supply management • Poor quality of health service delivery and underfunding • Inadequate emergency preparedness and response 	

Theme	Sub-theme/Category	Problems and or issues
	Weak coordination, leadership and partnerships	<ul style="list-style-type: none"> • Weak data management systems • Inadequate supervision and programme reviews • Weak surveillance system • Poor coordination, advocacy and partnership • Unavailability of data-capturing tools • Scarcity of the budget

Table 4.14 depicts Theme 4, which captures the challenges inherent in humanitarian emergency responses in Gambella region. This theme has 11 sub-themes that are categorised with various problems and issues, as highlighted in the table.

- **Lack of emergency preparedness and response**

In this sub-theme, health workers described their experiences of emergency preparedness as a challenge to implementing public health emergency responses.

Emergency preparedness and facilities' readiness to offer health service to people in need is at the core of humanitarian responses. Local health systems should not wait for the occurrence of humanitarian situations and ask for support. The health authorities should ensure that public health facilities under their jurisdiction are equipped with minimal required resources in preparation for public health services during humanitarian responses. Lack of preparedness in the health facilities could mean that emergency-affected people do not receive health services. The absence of preparedness is a failure of health systems to timely address the health problems of populations, should an emergency arise.

One interviewee shared his experience as follows:

“Even if we are generous to provide health services to emergency-affected people, the absence of preparedness and contingency plans affects the responses. While public health facilities should make available the required resources and services, it remains theoretical. The humanitarian responses in this region are dominated by the United Nations agencies and non-governmental organisations. In some locations, district health offices perceive humanitarian responses as a UN

mandate, but not at all. District health offices and concerned bodies are the relevant people to plan for the public health services of the people that the office and institutions are established to serve.” (GRHB)

Another participant criticised health partners by stating:

“Health partners should not sit idle waiting until the humanitarian situation occurs. They should continue supporting the systems even during the normal situation. Humanitarian situations are happening even in normal situations, if the preventive interventions fail to be implemented. The institutional capacity on the preparedness and response plan should be developed in coordination with stakeholders. Prepositioned essential items must be available so that the district can respond within the first 72 hours.” (NZHD)

The participants also noted that the public health need of displaced people is no different from those of host populations, and it is essential for the government to strengthen health systems with full packages of basic services that can be accessed by any person in need.

Emergencies in the emergency

Gambella Regional State is already an emergency state; it has its own seasonal flood displacements and conflicts at the borders due to cattle raiders and child abductions. There are also occasional internal displacements due to clan conflicts. The massive influxes of refugees into Ethiopia via Gambella are seen as another emergency in an already challenged state. The sub-national health system is less prepared for complex humanitarian responses where different needs arise at the same time.

One interviewee said:

“Without our knowledge, we came into a situation where some villages in the districts were attacked: abducted more than 120 children; raided 5,000 herd of cattle; and people were displaced. At the same time, we received the information that refugees were at the border – both need our public health services.” (LRDHO)

Another participant mentioned a time when asylum seekers, and an internally displaced community due to clan conflicts and floods, were simultaneously in need of public health services. He said:

“While Makuey District was hosting a big camp that had a population more than the district population (more than 55,000 refugees and a host community of 34,000), the whole camp and half of the villages of the host community were flooded. The refugees and host community mixed; they all needed public health services, making it a challenge with the limited resources that the district health office had. The worst part was that all roads were blocked – even the humanitarian agencies could not reach the area – and the food rations stopped for two months while they were looking for a solution. Refugee and host communities shared every service and food.” (MKDHO)

Similar findings were reported in Nepal, where a lack of preparedness was reflected among various critical challenges related to the availability of required resources for emergency responses (Chaudhary, Valles, Thapa, Alvarez, Pradhan, Bajracharya, Sekine, Adhikari, Samuel & Goyet 2017:35). Baytun et al (2012:2) also reported that providing public health responses to a large number of displaced communities is a challenge in underprepared health systems.

- **Unavailability of needs-based protocol**

This sub-theme refers to health managers’ exploration of challenges related to the unavailability of a needs-based protocol for public health service provision in various humanitarian situations.

In the context of humanitarian response, a protocol is not a set of treatment guidelines for managing diseases as health problems. Instead, it is a working document for mobilising resources to ensure preparedness for humanitarian responses. Humanitarian responses in Ethiopia are provided without a contextualised protocol.

Though health facilities provide emergency health services during the humanitarian responses, shortages of supplies, inadequate budget for operational cost, and the unavailability of a protocol that clarifies unique needs to be addressed, were the noted

challenges that sometimes delay health facilities responding within 72 hours of the onset of an emergency.

One participant reported:

“The limited capacity of health the system in terms of resources, the weak district health system, made health workers and the entire system to reluctantly see the humanitarian response as a mandate of the United Nations.” (NZHD)

The impact of having no protocol and a lack of preparedness was revealed by the participants as a burden to routine health services and multisectoral responses. During humanitarian responses, the services were provided by health workers who received an additional incentive payment, as the humanitarian response was regarded as an extra task.

One participant further explained:

“The routine health services provisions were affected, as health workers were looking to be assigned to emergency services and to be paid an allowance that the humanitarian organisations had covered for health workers working overtime during the emergency. There is no protocol aligned to international standards for sectors responding to the emergency, resulting in weak integration of public health services and poor quality of health services in the existing health facilities.” (LRDHO)

Unavailability of required resources for public health services

Challenges related to the unavailability of the required resources for public health services were explored under this issue. Many participants revealed that having no humanitarian protocol is responsible for the unavailability of required resources for the provision of public health services during humanitarian responses.

A participant explained:

“Most humanitarian situations are seasonal situations where the systems could have been prepared for the response by making life-saving supplies available. However, with the absence of the protocol, what is needed for humanitarian response has never been on the table for discussion. This also became an unresolved challenge to advocate for the procurement of drugs required for health in emergency responses.” (GRHB)

Another participant stated that a needs-based protocol would address complex humanitarian responses, and its absence imposes operational challenges:

“The provision of public health services to emergency-affected populations requires a needs-based protocol that is aligned with international standards and which outlines clear roles and encourages partnerships. In addition, leveraging resources for preparedness and responses for the humanitarian crisis could timely address the needs of the vulnerable populations.” (LRDHO)

One participant suggested the need for:

“A needs-based protocol to address complex emergencies that could otherwise worsen the lives of the refugees and IDPs, exposing them to different risks due to improper shelters and poor living conditions.” (GRHB)

Operational challenges

This issue outlines the key participants’ experiences of the consequences of the unavailability of a needs-based protocol as an operational challenge.

Despite the provision of health services during humanitarian responses, the health service operations were challenged by the unavailability of a protocol to be used in emergency-affected areas.

One participant noted:

“Based on the experience we had during the refugee response, since no protocol was developed to outline who does what, and to report what and when, only donors supported the emergencies with funds and supplies, hired the technical assistants who worked with our teams to collect the daily, weekly and monthly data to the donors, so that they knew their resources reached the beneficiaries.” (LRDHO)

Other participants said that the monitoring and evaluation component, which includes data management, supervision and performance reviews, was weak. This was because the response was entirely financed by UN agencies, with poor coordination on the government’s side due to insufficient funds at the district health office.

Another participant elaborated:

“Regional government has no protocol that articulates the result matrix for accountability that is aligned to the global standards, though we offer staff to separately report the data to UN agencies.” (MKDHO)

Some participants also mentioned that the lack of resources that challenge the provision of humanitarian responses was linked to the unavailability of contextualised protocol:

“The lack of the medical experience from newly assigned health workers at the frontline facilities; the absence of standardised protocols that could be followed during the responses; insufficient supply of medicines and services; inadequate monitoring and evaluation mechanism to assess whether the activities are implemented as intended; poor management of data with no developed plan; and protocols for the coordination of humanitarian responses – these were the operational challenges to provide the prioritised public health services to emergency-affected people.” (WNDHO)

Humanitarian protocol can revive community platforms

This issue refers to health managers’ experiences of community involvement through their leadership function.

Most participants explained that the biggest challenges were experienced when the community structure collapsed as a result of humanitarian situations.

One participant mentioned that:

“The disruption of the host community and refugees’ local leadership, the collapse of women’s groups that dealt with their problems; child-friendly spaces where children played were no longer there, resulting in psychosocial trauma.” (ITDHO)

A study conducted by Chaudhary et al (2017:36) in Nepal reported challenges in the provision of emergency responses. These difficulties were related to the unavailability of a needs-based protocol that could guide the responses based on local contexts. The presence of a needs-based protocol was found to facilitate the provision of humanitarian responses (Baytun et al 2012:8).

- **Inadequate health services for seasonally mobile populations**

This sub-theme refers to health workers’ assessment that population movements in Nuer Zone as another challenge.

The MKDH expert explained:

“Another challenge is population movements in wet and dry seasons. People in this district are a mixture of agriculturists and pastoralists. In the dry season, they are purely pastoralists, taking care of their animals. They are purely agrarian during the rainy season, when everybody is busy farming. During the dry season from January to March every year, people move with their cattle to the riverbanks, where no proper health facilities are in place – three months with no health services every year. The community also spends an additional three months, from April to June, in preparation for harvesting, waiting for their crops and preparing. The effects of the temporary movement of community was not considered as a reason for the low performance of zonal health departments and the suffering that the people went through in those days.” (MKDHO)

Semi-pastoralist community

The movement of the community is also connected to socio-economic status and living conditions, which the government has not recognised in preparing to meet health needs.

Some participants explained that the authorities had not paid attention to the socio-economic status of districts in Nuer Zone in terms of providing pastoralist health services. The community harvests during the rainy season, and moves with herds of cattle, goats and flocks of sheep throughout the dry seasons. During the dry season, women and children who might be under programmes, such as immunisation and ANC services, will drop out from the services as they move to an area with no public health facility. People often spend months in temporary shelters, where the risks of contracting communicable diseases might be high. There are no outreach services, women have unassisted births, and health facilities are abandoned for at least a minimum of six months every year. Disease outbreaks, communicable diseases and other health-related conditions have ideal conditions to thrive, with surveillance systems either weak or entirely absent.

In line with these findings, a study conducted in North East Ethiopia identified mobile populations' inability to access public health services as a critical challenge (Kamadjeu, Mulugeta, Gupta, Hirsi, Belayne, Clark-Hattingh, Adams, Abed, Kyeyune, Ahmed, Salih, Biaou & Toure 2015:2638). Moreover, Wild, Mendonsa, Trautwein, Edwards, Jowell, Kidanu, Tschopp and Barry (2020:1338) found health services' unavailability increases the suffering of pastoralist communities with a high burden of communicable diseases.

- **Poor supply chain management**

Health workers reported on the challenges they experienced related to supply chain management. The issues raised relate to the unavailability of services and the challenges in terms of health workers' skills in supply chain management. The participants also explained that supply challenges relate to the inaccessibility of roads for distribution and health-seeking behaviour.

Unavailability of services

The supplies that could be considered as a driver or enabling environment for humanitarian responses are lagging. One participant linked the unavailability of public health services to emergency-affected populations with the unavailability of essential medicines and other resources:

“The unavailability of public health services due to insufficient human and supply resources, including essential medicines and equipment, was the most critical supply-side bottleneck that could have affected the life of refugees and host communities displaced by flood – an emergency that had occurred in the emergency.” (MKDHO)

It is critical to make prepositioned supplies available to enable the system to provide immediate responses within 72 hours of emergencies arising. When a humanitarian emergency is confirmed, the dispatch of in-stock supplies can be arranged, either by phone or radio, to save the lives of people who might arrive exhausted, having travelled on foot for many weeks to reach the international border.

However, the absence of required medicines that are essential for the provision of primary health care services was reported in many health facilities.

One participant noted:

“Inadequate supplies mean there can be no outreach services to pastoralist communities who seasonally move to the riverbanks. In addition, this also affects performance – not reaching the annual targets stated to be reached in each and every quarter of the year, mostly on maternal, new-born and child health service indicators. People under chronic treatment who default also increase the risk of infection within communities.” (NZHD)

Health workers' skills

This issue refers to participants experiences of health workers' lack of competence in supply chain management at the health facilities. Health workers need technical expertise in supply chain management, which is a critical element in service delivery.

One participant reported that:

“Some health workers managing the supply in health centres wait until they finish all the tablets in the health facilities before they report to the next levels. Even if the request is considered urgent, it will take at least one week to process delivery of the items to the remote health facilities.” (GMDHO)

A lot of resources have been used for the training and retraining of health workers working as logisticians in health facilities, but there is a high staff turnover.

One participant explained:

“Due to poor supply chain management, you can observe health facilities with supplies that are overstocked, while other supplies have stockouts. The overstock will last until they finish what they have, then become stockouts. These are practical situations we are facing here. The Pharmaceuticals Supply Agency (PSA), as a government institution, distributes program drugs for malaria, tuberculosis, ART and other supplies to health facilities every two months. However, most health facilities could not even prepare and send their monthly consumption reports and estimated needs to PSA. The problem of quantifying the needs results in the unavailability of life-saving commodities in the health facilities, even in the hospitals. Some items might be in the biggest store, while not in the unit or in the pharmacy. This also has links with poor management capacity to identify what are the bottlenecks or gaps.” (GRHB)

Inaccessibility of roads

This issue discusses the challenges related to the inaccessibility of roads for the distribution and transportation of supplies. Inaccessibility and security restrictions were also identified as challenges for the supply chain management.

Some participants mentioned the inaccessibility of roads connecting the villages with primary health care and from primary to secondary levels of health care services, as challenges to both clients and health facilities:

“The poor roads delay the health facilities to receive supplies from the state on time.” (JRDHO)

Similarly, the security restrictions on some roads, due to internal conflicts, also affect the distribution and transportation of health commodities.

A participant reported:

“The internal conflicts in Gambella put a lot of pressure on health services in increasing caseloads in health facilities operating with insufficient supplies. The road restrictions might force some patients who might wish to travel by their own means to receive health services in other places, and to use health services in unsupplied facilities.” (NZHD)

Supply effect on health-seeking behaviour

The notion that the unavailability of required resources also decreases health-seeking behaviour is considered in this sub-category.

One participant explained that the constant lack of supplies in health facilities has been problematic for the community:

“Some people are not even coming to use the available services because they perceive that it is a waste of time to go to a health centre that diagnoses only malaria and has no other drugs.” (NZHD)

Another participant linked the unavailability of resources to inaccessible roads:

“Districts in Majang Zone have no connection with the state’s main city; stockouts are very common in all health facilities. To reach Majang Zone, you have to cross two states (Oromia and SNNPR). Any problems in those two states also affect Majang. We also have our internal challenges with the roads. As a result, HIV/AIDS, which is the top health problem in this community, continues to threaten the public. The unavailability of supplies weakens the interventions; low awareness of the benefits of condom use and the lack of provisions fuel epidemics; weak

information, education and communication contribute to the high increase of HIV among farm workers, female sex workers and refugees.” (MZHD)

The same participant continued:

“There is also a relationship between supply chain management and other components of the health system: staff turnover, timely requests for supplies, funds to distribute supplies from district stores to health facilities were the most noted bottlenecks on the supply side.” (MNDHO)

A study conducted in a rural part of Liberia support these findings, as the unavailability of supplies was linked to weak supply chain management (Gwaikolo, Kohrt & Cooper 2017:7). Sami et al (2018:6) also found that poor management of supplies disrupted the availability of medical supplies required for humanitarian responses.

- **Funding shortfall**

This sub-theme refers to health managers’ exploration of budgetary challenges that are experienced during humanitarian emergency responses. Challenges related to donor funding were discussed, along with difficulties related to service provision due to budget shortfall and domestic funding allocations.

Domestic resource allocations

In this issue, health managers explained the challenges they experienced with domestic resource allocations for humanitarian responses.

The participants mentioned that regional government should consider allocating more money to the health sector so that existing health facilities are able to procure prepositioned drugs instead of relying on donor-dependency responses. The government should have the capacity to prepare and respond to humanitarian situations with its own resources within 72 hours.

Gambella is less developed and has undergone little industrialisation compared to other regions. This makes the region ill-suited to fit into the upcoming developing economy that the country has shown at the international level. Unless affirmative measures are used

for budget allocation, the federal allocation is inadequate to meet the developmental needs of the local population, let alone emergency responses.

One participant stated:

“The minimal tax and revenue the state receives from investors are not adequate either. Transport, communications and energy networks are still poor in the rural part of the state, and there is insufficient budget to construct roads and other infrastructure. Health facilities are among the most affected institutions, as running health services needs budget.” (GRHB)

Another participant mentioned:

“With the inadequate funding that we have, our health office couldn’t even afford the timely procurement supplies of gloves, soaps, alcohols and other infectious preventive equipment for our three health centres, putting the health workers at risk of communicable diseases.” (ITDHO)

Donor resource allocations against the need on the ground

Health managers explained the challenges they experienced related to dependency on external resources during humanitarian situations.

One expert noted that resources that are mobilised without consideration of the real gaps would face problems in terms of utilisation:

“Most international and national organisations are based in the state capital... They propose and mobilise resources that might not reflect the needs on the ground, as the consultations during the resource mobilisations were not well aligned to the problems, and later might have difficulty in terms of implementation.” (LRDHO)

It was also mentioned that during humanitarian responses, issues relating to the budget were a challenge:

“Despite the presence of so many partners for humanitarian response in this region, only a few organisations support the operational cost of humanitarian

response. The Gambella Regional Health Bureau is a responsible body to mobilise human resources. Most health partners have their own budget that is strictly aligned to donors' interests. Even if the bureau officially requested them, they will turn down the request for funds to satisfy their donors, while the needs are different. What is the donor interest rather than saving lives? These problems are related to inadequate coordination. Organisations that develop proposals on behalf of the humanitarian response for this region should at least consult the regional health bureau to include the real gaps and needs on the ground. This results in a wastage of the resources that can support the health system of the region." (GRHB)

Shortage of funds affects service provision

Health managers explored the budget's effects on the expansion of services to the targeted populations in this sub-section. The findings revealed that the availability of budget during humanitarian responses is a critical element that determines service provision.

One participant explained:

"It was mentioned that two of the issues concerning the provision of public health services during humanitarian responses are the lack of budget and inadequate resources at hand. To quickly respond to humanitarian situations, funding is also needed, even for the transportation of supplies from central locations to health facilities. Community involvement and various components of comprehensive health care services are missing due to inadequate resources." (NZHD)

It was explained that funding shortfalls also prevent the extension of public health services to people in need. For instance, participants stated that preventive measures against HIV/AIDS should be extended to vulnerable populations, such as farm workers, gold miners, and refugees. Public health emergency key messages related to measles and cholera should be translated into local languages, as recurrences of the measles outbreak could be related to low immunisation coverage, potentially linked to low awareness among mothers.

However, resource procurement requires money. Delays in paying staff salaries from the government side was a challenge to service provisions. Health workers in the district often

worked for two to three months with no salary, while they support the flood-displaced and refugee populations. This situation has also affected routine health services for host communities, as all health workers want to be assigned to emergencies to get incentive payments, funded by donors.

The findings of the current study are similar to those of a study conducted by Wirtz, Hogerzeil, Gray, Bigdeli, De Joncheere, Ewen, Gyansa-Lutterodt, Jing and Luiza (2017:406), where a lack of funding to procure essential medicines and other supplies were mentioned as the first challenge to emergency response. Other findings reported in Syria included budget shortfalls limiting public health service operations to mass-displaced people in need of health services (Hunter 2016:493).

- **Weak monitoring and evaluation systems**

This sub-theme explains the health managers' experiences of challenges related to monitoring and evaluation systems, including poor data management; weak surveillance systems for disease prevention and control; the unavailability of data-capturing tools for recording and reporting; and weak coordination, advocacy and partnerships. The scarcity of funding and weak leadership contributes to insufficient programme supervision, which are components of the monitoring and evaluation systems.

Weaknesses in monitoring and evaluating programmes were reported by all participants.

One explained:

“Data management is very challenged at the facilities, particularly when the displaced community mixes with the host community. The unavailability of data on the number of refugees mixed with host communities were challenges to plan our response.” (GRHB)

Donor dependency was mentioned by the participants as a significant challenge to programme monitoring and data management, as the government has very limited resources and competing priorities.

One participant said:

“We can’t conduct the required supportive supervision as per expected due to the budget scarcity. Government is struggling even to pay us instead of operational costs for supervisions, either regular or emergency-related travel.” (NZHD)

On data management, the handling of humanitarian data is very challenging. The participants mentioned that all the resources were from donors; there were no government-owned resources apart from human resources. Weak data management is challenging, as the data are for the donors who fund the humanitarian responses, available for use by the routine programmes. Yet the surveillance systems that can support the health system to prepare and timely respond to emergency-related health issues is very weak.

Most participants mentioned weak surveillance and data sharing among partners interested in health interventions. The majority of the participants suggested that data should be communicated, since solutions should come from all stakeholders, and not one organisation; after all, the responsibilities are shared among different actors. Stakeholders should come together and support each other if they have information on gaps already identified. Data-capturing tools are therefore needed for functioning health facilities to improve the disease surveillance system.

One participant noted:

“The unavailability of the recording and reporting tools in some facilities has been a challenge for surveillance systems.” (DDHO)

Another participant mentioned that the surveillance data are also mismanaged at the district level:

“Weak surveillance systems at the district level, apart from data collection by the data clerks. It is rare that the district health facilities analyse and use their data for planning and resource mobilisation. Nor do they use data to garner support from the next level to resolve problems.” (GRHB)

Similar findings were reported in India, where a weak surveillance system was found to be responsible for disease outbreaks (Tripathy 2014:158). The establishment of strong monitoring and evaluation systems, including clear reporting lines, can improve the use of data and accountability among the actors (Chaudhary et al 2017:37).

- **Poor infrastructure**

This sub-theme refers to health managers' experiences of infrastructure in the public health facilities in Gambella.

Very few health facilities had electricity supply, and there was an absence of basic equipment, diagnostic equipment, internet access and telephones in most functional health facilities in Nuer Zone. Health facilities lacked institutional water, sanitation and hygiene components, piped water, latrines with water, and waste disposal facilities.

One participant reported:

“The majority of health facilities, even in the referral hospital, have no internet connection. The issue of electricity is very challenging in health centres. No connected water supply in the facilities. Inadequate availability of funds at the regional, zonal and district level affect the provision of humanitarian health services, and this has a strong link with the availability of supplies and essential drugs.” (GRHB)

A participant also mentioned that the water problem in the health facilities aside, water supply is the biggest problem in Gambella town:

“The current water system that supplies the town was planned to serve only 25,000 people 25 years ago. The Gambella town population nowadays – with the presence of refugee operations, where all NGOs and UN agencies are based... increased due to business opportunities and from rural to urban movements – might be nearly half a million.” (GMTHD)

Poor health service delivery

Overstretched services were also mentioned by a participant when discussing the burden on Gambella's general hospital:

“Currently, Gambella Hospital that was planned to serve only 150,000 people has become the only referral hospital that offers services. However, being the only the referral hospital, it receives referral cases from all health facilities in the region, including the refugee camps.” (GRHB)

Inadequate diagnosis and equipment

Another participant added that:

“Despite being the only referral hospital in the region and situated in the centre of the town near to the regional health bureau, it has no back-up generators. What about those hospitals in the rural areas? The electric power is off for at least three hours per day. That not only affects the quality of the services but poses risks for patients who might have gone through surgical procedures.” (GMTHD)

The lack of infrastructures, such as institutional WASH, electric power outages that not only affect the recording and but also the reporting of data, and inaccessible telephone and internet services, was reported by all participants.

In rural Liberia, poor infrastructures were reported as a barrier to the provision of health services (Gwaikolo et al 2017:9). A South Sudan study also confirmed poor infrastructures in the facilities as a critical challenge across many humanitarian emergency responses (Sami et al 2018:8).

- **Weak referral systems**

This sub-theme refers to health workers' experiences with challenges related to the referral linkages among health institutions.

Except for Gambella General Hospital, the participants explained that health facilities in zones and districts operate without surgical services or blood banks. The problem is

fuelled by weak referral services that are supposed to be available 24/7 to refer all eligible clients for surgery and further investigation.

With the limited services available in health facilities, the unavailability of emergency transportation services is a central challenge. Health facilities cannot provide fuel and ambulance drivers' allowances for every case due to budgetary constraints. Inaccessible roads between villages and health facilities during the rainy season is a further problem.

One participant noted that:

“The referral linkage is very problematic, as all districts in this zone have no direct road to the regional capital. Two regions (Oromia and SNNPR) need to be crossed to reach Gambella from Majang Zone.” (MZHD)

Another interviewee stated:

“Insufficient resources couldn't allow referral services 24/7 to link the complicated cases to hospital, where well-trained senior staff could manage the major procedures, including the blood transfusions, and minor and major surgeries.” (NZHD)

Evidence showed that inadequate knowledge of referral services and the long distance between inaccessible facilities were among the reported challenges that contributed to the weak referral system (Gwaikolo et al 2017:8). Additionally, Sami et al (2018:7) confirmed the lack of a referral system has put the lives of refugee children who required referral to the next level of facilities in mortal danger.

- **Lack of integration**

The study participants identified the lack of health service integration among different actors as critical challenges in humanitarian responses.

This lack of integration refers to partners operating based on their areas of their interest, not according to the needs of the people. One participant cited that:

“Imbalance of resources was observed, with duplications in procuring the supply of the same specific items, while others were lacking.” (WNDHO)

Another participant further explained:

“Most of the diseases that cause problems among the emergency-affected communities are those related to poor water, sanitation and unhygienic conditions. Some are due to the unavailability of the health services, overcrowding, low immunity due to poor nutritional conditions, which needs an integration of health, nutrition and WASH.” (LRDHO)

The participants mentioned challenges related to the integration of humanitarian health services in Gambella. Integration was linked to the need for changes in attitudes and understanding of the term ‘integration’ itself. Integration of interventions sometimes seem like abolitions and giving up control by experts managing vertical health programmes. Integration also has challenges in terms of the capacity of the actors, and weak capacities at the district level might pose other challenges to the integration of health services.

One participant expressed concern that the integration of health services requires strong monitoring, as resources might remain in the hands of those who control them. He noted:

“The organisation, the staff themselves, were the challenges to the integration of interventions. Before integration of public health services, the required functionality and systems should also be integrated, and these include HR, fund, supplies, strong monitoring and evaluation system established, which is not what happened at all, as they needed clear leadership and coordination from the top with other sectors.” (GRHB).

National health systems should integrate health, nutrition and WASH interventions, creating a cultural shift for new and existing health facilities. Failing to implement WASH and nutrition interventions, such as vitamin A supplementation, deworming tablets and screening for severe acute malnutrition during humanitarian situations can lead to serious disease outbreaks, such as cholera and measles, that have strong links with malnutrition and anaemia. One participant linked the malnutrition problems with maternal- and new-born-related mortalities.

She elaborated:

“Women who deliver to low-birth-weight babies or in preterm infants still have the highest mortality rate due to malnutrition; it is important to integrate with the nutrition programme.” (GMTHD)

Another participant revealed that it is vital to integrate health programmes with water, sanitation and hygiene sectors because:

“... health problems during the humanitarian crisis happened, partially or completely, because of the absence of ... WASH interventions.” (ITDHO)

- **Inadequate human workforce**

This category explains the health workers’ challenges related to the human workforce during humanitarian responses.

High staff turnover and the limited capacity of staff were problems reported in many health facilities. Most qualified health professionals with degrees have opportunities to join international NGOs. However, the presence of various humanitarian health partners operating in the refugee camps currently in Gambella threatens the national health systems, as the health workers and experienced staff members who have such exposure want better payment, while others leave for urban health facilities. Physicians are being limited to hospitals only. As a result, health centres are at risk of being run by less experienced and junior staff members, with limited capacity to provide high-quality curative services. Moreover, most of those staff are diploma graduates, released from college without the competency and skills of a health worker.

One participant mentioned the problems in the selection of medical students:

“Students were selected based on the interest of the cadres at the district levels, not because they passed the entrance exams to be the best student. Another issue is related to ethnicity: students are being recruited by allocating quotas to ethnic groups. This should not be the case for people who will deal with human lives after their graduations. This issue needs advocacy, as it still exists.” (GRHB)

Being a remote zone, staff turnover is high in all districts of Gambella. Health workers prefer to move to Gambella town, where they can look for other opportunities to join international organisations operating in the refugee camps. Additionally, most international organisations have their headquarters in Gambella city, making the city attractive to every health worker to be near the communication centre, where they can network to get better jobs with better payment.

Health workers' capacity in managing the districts also matters, as the majority of health managers are inexperienced and can rarely convince decision-makers to consider the allocations required in the budget of the health sector so that the system can prepare for seasonal humanitarian responses. Inadequate preparedness and contingency plans have resulted in all humanitarian situations being under the aegis of humanitarian organisations. Health workers regard humanitarian response as additional work with incentivised payment and mobilised supplies provided by humanitarian health partners.

Similar findings were reported in South Sudan, where health services were not integrated due to poor coordination (Sami et al 2018:5). A lack of integrated public health emergencies was found to contribute to the weak health systems in African continents and similar settings (Olu 2017:5). In another study, Puchner et al (2018:4) found that the integration of public health services can not only save lives, but also significantly reduce costs that can be spent on vertical health programmes.

- **Weak coordination, leadership and partnerships**

In this sub-theme, health managers explained their experiences of the challenges in coordination, leadership and partnership in relation to public health services.

Coordination and leadership: The frequent change of leadership at the regional, zonal and district (*woreda*) levels has become a critical challenge to humanitarian responses. Change and reform are perhaps inevitable, but they should follow certain procedures, especially where senior personnel are being replaced. Monitoring health commodities and planning for humanitarian responses require well-informed decision-makers, with the required technical skills and knowledge.

Partnership: Some of the noted challenges are related to weak coordination and partnerships – partners sometimes procure items, the need for which has not been

assessed. Poor coordination is linked to high staff turnover and frequent changes of leadership at all levels – regions, zones, *woredas* and *kebeles* (the smallest administrative units). The unending transition of leadership at various levels, including in health facilities, also contributed to the weakening of health system partnerships. Similarly, health workers’ skills gaps in establishing and maintaining partnerships also fuelled operational challenges.

Leadership and good governance were recognised as essential mechanisms for articulating the role of public health institutions during humanitarian responses (Khan, Ósullivan, Brown, Tracey, Gibson, Généux, Henry & Schwartz 2018:5). In India a lack of strong leadership was similarly found to be among the reported challenges experienced during humanitarian responses (Phalkey et al 2012:9).

4.3.2.2.5 Theme 5: Emerging issues as lessons learned

This theme explains the lessons learned by the health managers based on their experiences of humanitarian responses in Gambella.

Table 4.15 Theme 5: Emerging issues as lessons learned

Theme	Sub-theme/ category	Problems and or issues
Emerging issues as lessons learned	Strengthen leadership capacity and good governance	Aligned needs-based protocol with international standards Partnerships and advocacy Community involvement
	Strengthen the integration of health service delivery	Lack of integration of health in emergency service delivery Humanitarian and development programmes Communicable disease prevention and control Pastoralist health services
	Strengthen and or establish strong monitoring and evaluation systems	Rapid assessment and data use for planning implementations Supervision and performance reviews
	Improve the availability of infrastructure	Emergency preparedness and responses Resilience in the health system
	Increase fund allocation	Domestic and donor funding
	Strengthen the development of human resources for health	Skilled health workers

Table 4:15 reveals Theme 5; that is, the identification of emerging issues as the lessons learned during the humanitarian responses for health system strengthening in Gambella. This theme has six sub-themes that were categorised as strengthen the leadership and good governance; strengthen the integration of health service delivery; strengthen and or establishment strong monitoring and evaluation systems; improve the availability of infrastructure; increase fund allocation, and strengthen the development of human resources for health.

- **Strengthen leadership capacity and good governance**

This sub-theme explains health managers' experiences in strengthening leadership at different levels of health institutions; in an attempt to fix existing weaknesses observed in health facilities.

Participants stated that meaningful planning that can propose activities based on the public health problems that exist in the community requires not only technical skills but leadership capacity. In addition, participants noted that the use of programme data for health planning and the mobilisation of resources to support programme implementation depends on strong leadership and good governance. Having good leadership skills and knowledge of the health sector can maximise the use of limited resources by prioritising interventions that can reduce the diseases that cause high morbidity and mortality during humanitarian responses. The participants also mentioned that the successful implementation of holistic health service delivery depends on strong leadership, with a commitment to answering societal needs under their jurisdictions.

One participant noted:

“I can say the development of potential leaders could not happen overnight; it can cost organisations to capacitate and invest in leadership capacity-building strategies. Many capacity-building trainings were given to district health office heads. However, the frequent changes of leadership and high staff turnover starting from the state itself have an impact on weak health systems and weak leadership of health managers. Resources are very limited; if the person who is leading the health unit is trained, at least he/she should serve the sector for a while.” (NZHD)

Participants stated that different capacity-building training had been provided, although the absence of post-training follow-ups, the high turnover, and the frequent changes of political leaders that result in the never-ending transitions of leadership remained the most unrecognised challenges. Having no strategy to retain health workers causes health system weaknesses in various districts. The weak institutional capacity is manifested in poor infrastructure in health facilities, as no one consistently implements plans due to frequent changes, poor monitoring and evaluation, including poor data management. Weak coordination was mentioned by the participants in relation to the deployment of less experienced health workers to leadership roles. Limited leadership skills result in weak coordination among the different actors and, of course, unwanted overlapping of interventions. Conversely, a lack of support exists for some interventions that could have been divided among partners to ensure effective and efficient utilisation of very limited resources that are otherwise being wasted due to poor management capacities.

One participant observed:

“Effective and functional coordination could leverage resources for public health in emergency responses and could minimise the overlapping of interventions among health partners who share the same responsibilities, including who to procure which items. What I observed is that health partners procure the same items while different activities remained unfunded. The problems might not only be the inputs that could have been corrected if the discussion on what the gaps are had been conducted as part of the preparation before the emergency happened.” (GRHB)

Aligned needs-based protocol with international standards

Most participants learned that the availability of a needs-based protocol could improve public health services for emergency-affected populations. In the context under study, there are displacements happening in the country, population movements, refugee influxes in various directions, and disease outbreaks. Among the humanitarian situations, some are emergencies that happen seasonally, and the systems could prepare their response in advance.

The participants mentioned that humanitarian situations vary from region to region and even within regions, from zone to zone, and sometimes even differ within the districts as

well. Having a contextualised protocol in place could serve as a framework that could enable the systems to prepare resources that might be needed during humanitarian responses.

One participant mentioned that:

“Based on the geographical location of Gambella as a border state and its contexts, problems that happen in Gambella are different from those might happen in other regions. I learned that each regional state has its own humanitarian situations that affect people and they need different approaches to address them. For instance, in Gambella, refugees, internal conflicts, flood and disease outbreaks are the largest causes of humanitarian situations that we either seasonally or frequently face in this state.” (GRHB)

Most participants shared that the availability of a needs-based protocol could address factors related to inputs that could enable the systems to provide humanitarian responses. The needs-based protocol could strategically play a vital role to differentiate and prioritise needs differently, depending on the risks identified, and inform responses. The prioritisation of the interventions could be based on risk-informed planning, and implementation should demonstrate that it can reduce morbidity and mortality over the long-term.

Some participants mentioned that a needs-based protocol could prepare the system for those items that could be life-saving, and forecast supply-side bottlenecks that might happen during humanitarian situations:

“I have learned that in the humanitarian situations that happen seasonally, the blame for the interruption of supplies in most cases is put on the logisticians’ capacity to calculate consumption and forecast needs. After one year in this office, I realised the issue is not a logistic problem that can be put on individuals working as logisticians. The problem is a programme owners’ problem – it is the failure of the systems that have no needs-based protocol to identify the resources needed for immediate responses to the expected emergencies. The lack of preparedness on the assumptions of recurrent or new emergencies puts vulnerable people at risk.” (AZHD)

Other participants mentioned that the availability of a protocol could also address the demand-side bottlenecks through the identification and implementation of interventions that can improve public health service uptake via awareness-creation activities. The consideration of the contexts should also address the holistic needs of both the affected and non-affected communities. This could be realised by proposing activities that can support not only the affected health facilities, but also nearby and non-affected facilities so that they have the capacity to respond to any future emergency.

The protocol should have a resilience strategy, and individuals serving in unaffected health facilities near emergency-affected communities should not feel that emergency-affected areas are gaining an advantage over non-affected areas. Some participants shared that during humanitarian responses, health offices should ensure that the health facilities have immediate access to prepositioned supplies for humanitarian responses, instead of waiting for the regional team to mobilise resources.

One participant further stated:

“What I observed during the refugee response in this region ... all health facilities in the districts that host refugees have been renovated, some received continuous supplies, and even the well-trained health workers moved to humanitarian-supported health facilities. Our community has been suffering and has been going to the communities that host refugees to get better health services. I think there is a need to consider the district as well, because it is the region that hosts the refugees; the gaps in supporting health facilities should be considered.” (ABDHO)

Partnerships and advocacy

Participants mentioned that humanitarian responses require strong partnerships and coordination among stakeholders to ensure social mobilisation for wider community engagement. Collaborations with WASH partners during the humanitarian situation are critical, because failing to implement WASH-related interventions could result in a further emergency in a pre-existing emergency context. Similarly, participants mentioned that political commitment at different levels was an enabling factor for the system to respond to needs. The established coordination and presence of humanitarian partners, including NGOs, was found to be critical to address identified gaps. Moreover, the decentralisation

of the health system of the country – the presence of district health facilities – strengthens partnerships and the advocacy of local responses to emergency-affected areas.

Partnerships: Partnership were found to be applicable at all levels of service, as the need for public health services during an emergency always exceeds the capacity of the existing partners.

Participants mentioned that, during emergencies, financing referral linkages between various levels of health care services, making essential medicines available, facilitating supply chain management, information flow, and having a robust health workforce to provide public health services, all need the support of partners. Partnerships and collaborations between governments and humanitarian organisations were recognised to enable services to connect with hard-to-reach people in need.

Participants also recognised that the collaboration of the Gambella RHB, zonal heads of department, and health offices of the *woredas* and humanitarian organisations in emergency situations saves lives.

One participant explained:

“Mobilising other partners to come in with their capacities in leveraging resources for public health responses was recognised, as the government resources would not have been sufficient to provide public health services to emergency-affected communities, let alone host communities.” (DDHO)

During the participant interviews, some participants mentioned the humanitarian response challenges that require partnership should be considered as an opportunity for initiating collaboration among the actors. Thus, mapping partners who have an interest in the same programme could prevent duplication of tasks that could directly or indirectly affect the humanitarian responses in achieving their objectives. Moreover, the participants noted that the initiation of partnerships requires a lead agency for the entire process, and the identification of clear and agreed roles to be exercised during the partnerships.

Participants mentioned that not only external partners, but perhaps the public health institutions too, should be in partnership with other government agencies working in sectors such as water, education, social affairs, women, youth and children affairs, finance and economic development sectors. For example, poor infrastructure in health facilities needs the involvement of the water sector to connect water pipes to the health facilities; the establishments of reproductive health services in schools need involvements from the education sector; and the participation of women in maternal and child health services needs the agency for women and children's affairs. Moreover, no provision of services, including public health services, can happen without a financial commitment from finance and economic development sectors. It was mentioned that these challenges could be resolved by addressing poor leadership and governance to establish clear roles and responsibilities, including making people accountable to those they serve. Partnerships with the finance sector can enable the health system to pay health workers' incentives and provide other motivations to health workers so that the high staff turnover can be reduced. The frequent changes of leadership that result in unstable transitions could be addressed, as all partners have a voice with the institutions that are empowered to deploy people.

Advocacy: The need for advocacy was also mentioned by the participants as an important component for the increment of health service uptake. Advocacy was seen as a key element in mobilising resources and encouraging demand creation, as elaborated by one participant:

"I have noted that advocating for the public health problems using public health emergency key messages was not only needed for the prevention of communicable diseases that might happen due to an emergency, but also helps to create awareness among the different actors who can support the affected populations. During a complex emergency, the host community could easily be affected when large numbers of people settle... Even a single case of a communicable disease could easily spread and cause an expensive disease outbreak." (ITDHO)

Another participant added:

“I personally recommend awareness creation among the affected community could protect the community from preventable diseases. Demand creation could also improve utilisation of primary health care services, including HIV prevention, and control key messages. The utilisation and importance of LLINs in malaria-endemic areas like Gambella is very important. Promoting improved shelter, sanitation and hygiene for internally displaced people and on the importance of immunisation services for reducing vaccine-preventable diseases like measles and others, needs advocacy. The provision of safe, clean water could also reduce water-borne diseases, which are a major problem for displaced people.” (AZHD)

Community involvement

The involvement of both host communities and the affected communities could enable programme designers to target interventions according to the priorities that reflect the realities people face, as elaborated by one participant:

“I have learned that the district health authority should inform the community leaders about the public health interventions provided in the existing health facilities.” (LRDHO).

The participants learned that the involvement of the emergency-affected populations in the implementation of public health service provision has a long-term benefit to individuals, as it addresses their needs, and ensures resilience if another emergency happens. The problems mothers face affect their children, and the same children’s problems affect their mothers. For any services designed for children, the programme owner should think of the mother as well. Depending on the context of the complex emergency and the need for public health services among affected people, these services should be offered with the involvement of local communities, especially mothers, who know their actual needs and those of their children better than anybody else.

Local communities were seen not only as better places to detect humanitarian needs but are also the immediate providers of live-saving interventions; humanitarian emergencies always need their support (Gingerich & Cohen 2015:18). A study conducted by Olu (2017:4) on resilient health systems determined that strong health system governance

should successfully coordinate the mobilisation of the required resources for emergency health service provision.

- **Strengthen the integration of health service delivery**

Participants discussed the benefits of integrating public health service provisions. The offer of integrated public health services could help the provider to present packages of public health programmes that are relevant to the people in need.

Lack of integration of health in emergency service delivery

The need for integrated essential public health services in all emergency-affected populations during humanitarian responses was mentioned by the participants.

One participant explained:

“There are no humanitarian responses that can ignore half of the population (reproductive health services to adolescents). During the public health service provision for South Sudanese refugees, most focus was initially on the targeted children, leaving out other population members. Polio immunisation, measles vaccination provisions, vitamin A supplements, and deworming tablets to targeted children, were the dominant services. I feel that the integration of all maternal, newborn, child and reproductive health services could be more helpful, as the lack of integration also affects other family members.” (LRDHO)

Most participants felt the need to go further, to holistically look at issues that affect the lives of human beings in general. Those services with a positive contribution to the health conditions of human beings should be convergently implemented to address the health needs of vulnerable populations. It was noted that the integration of public health services should also consider demand creation among emergency-affected communities by using different existing community platforms.

Humanitarian and development programmes

Most participants learned the importance of linking humanitarian and development programmes. The participants stated that the humanitarian responses in Gambella were not fit to address the needs of the vulnerable populations. Though there was no specific adopted protocol in place, the provision of public health services to both refugees and host communities were seen side by side as life-saving interventions. The region contains more than half of all refugees in Ethiopia, and their presence has had a visible impact on the politics and economy of Gambella, and a significant importation of communicable diseases that cannot be ignored.

One interviewee explained:

“The presence of refugees has not only exceeded the health needs, but also the socio-economic needs, of the region. The subsistence economy of local communities has been totally disrupted due to refugees’ increase in demand for firewood that results in deforestation, and grass needs for their shelters, as well as the overflow to local markets for foods that are not provided as rations in the refugee camps.” (GGDHO)

The participants recognised the need for the integration of development and humanitarian interventions. The humanitarian agencies should not wait for the occurrence of humanitarian situations; rather, they should continue supporting the local health system by strengthening existing structures. The extension of humanitarian partners supporting local health facilities in the host communities can enable the national health system to develop emergency response plans for humanitarian responses, while considering development interventions. Most participants mentioned that building local health institutions’ capacity could enable the systems to prepare and respond to any emergency, including complex emergencies.

One participant explained that linking humanitarian response to the development programme could enable the existing public health facilities to be resilient in managing the response and timely address the needs of vulnerable populations:

“The very good example is when our host community and refugee communities displaced to the same places, where you could not differentiate them. From that experience we learned the need to think about long-term interventions that can strengthen the whole system, rather than simply saving lives.” (MKDHO)

Most participants acknowledged the comparative advantage of linking the humanitarian and development programmes. The presence of humanitarian organisations – UN agencies and international NGOs – should be viewed as an asset to capacitate the sub-national system by closely working with local health systems.

One participant further explained:

“I personally recommend the international organisations to continue supporting the frontline health facilities even after the humanitarian responses, instead of waiting for the emergency to happen again. They should also increase their field presence at different levels, instead of selecting the urban and semi-urban areas ... Instead of their selective interventions, their presence could also enable the public health services to be provided as packages that include all essential health services that address the different health needs of different people who are similarly affected by the crisis.” (NZHD)

The participants learned that to respond to a man-made or natural disaster, the local health systems require capacity building above all else. The participants acknowledged that investing in the improvement of local health systems should be done concurrently with humanitarian responses to address the gaps in routine health programmes. Participants felt that current humanitarian responses to South Sudanese refugees had overstretched the capacity of the local health system, which was simply not ready for such sudden influxes.

The majority of the participants mentioned that addressing the health needs of refugees and internally displaced persons requires a well-prepared existing health system that can provide a package of public health services, including a plan to procure and distribute health commodities to health facilities.

One interviewee elaborated:

“Hosting a huge number of refugees in Gambella is like a child carrying an object that is bigger than the child – so support is needed.” (GRHB)

Communicable disease prevention and control

The study participants explained the lessons learned for the future consideration of communicable disease prevention and control in the region.

During the participant interviews with heads of the health departments, the majority of the participants agreed that scaling-up the prevention and control of communicable disease interventions for key populations can reduce the transmission of such diseases among the community at large. The provision of public health programmes, including prevention and control of HIV, ANC, PMTCT, and TB/HIV services to key populations based on geographical areas where the risks are high, could reduce the risks of communicable disease transmission.

Also, the prevention of chronic communicable diseases was suggested to be considered in humanitarian responses. The majority of the participants mentioned that the diagnosis and treatment of TB and services related to HIV prevention and control need to be considered in responding to the humanitarian situation in high HIV-prevalent areas such as Gambella.

Some participants recognised the need to assign experienced health workers for the provision of communicable disease prevention and the control of chronic diseases that require follow-up and linkage with other facilities.

One participant explained:

“The provision of diagnosis and treatment of diseases that have follow-ups requires a driven workforce who can provide the services and exchange the utilised resources into meaningful treatment outcomes ... resulting in the reduction of morbidity and mortality related to communicable diseases during humanitarian crises.” (DDHO)

It was mentioned that while the availability of VCT, HIV care and support, STI and reproductive health services (even just the free provision of condoms) can reduce the transmission of disease, more work is needed to raise awareness among people so that they use those services. Establishing behavioural change requires more work in terms of developing key messages on the risks of HIV transmission, getting HIV tests, and the availability of HIV services in the health facilities, including for those near emergency-affected populations.

One participant from Majang Zone explained that:

“Being the zone with high HIV prevalence, health promotion using the key messages on the prevention of HIV, including STIs, were part of public health emergency responses.” (MZDH)

Pastoralist health services

Most participants acknowledged the importance of public health service provision to populations ‘on the move’. Some participants said the government should consider introducing pastoralist services in Nuer Zone for health, nutrition, sanitation and hygiene interventions in its comprehensive health extension programmes:

“I have learned that primary health care services, including facility and outreach services, are very important to address the needs of the vulnerable populations. The pastoralist health services need to include health promotions and disease preventions that can minimise the immediate and underlying causes of illness in the community.” (WNDHO)

The important lesson in responding to a humanitarian crisis in the current study include integration of communicable diseases prevention and control among stakeholders during the humanitarian responses. Similar findings in South Sudan found that strengthening intersectoral among the stakeholders found to address challenges identified at the various levels of health services (Geleto, Chojenta, Musa & Loxton 2018:11). The current study also identified the integration of pastoralist health services and linking humanitarian responses into local health systems. Evidence showed that the use of local actors is

always preferable to international responses in responding to a humanitarian crisis; not only to save lives faster, but they are also better grounded in localities and less expensive, since existing structures would be used (Gingerich & Cohen 2015:38).

- **Strengthen and or establish strong monitoring and evaluation systems**

This category explains the lessons learned by the health managers on monitoring and evaluating public health in emergencies. The participants stated that a strong programme monitoring mechanism could help to address gaps related to the input required for programme implementation.

Improving service provision can be realised when there is an established strong public health emergency department at all levels that communicates information about interventions. Similarly, continuous monitoring of the quality of health services and surveillance data are essential, as most reportable diseases might challenge people who lack health-seeking behaviour in the accommodated shelters and villages, including for diseases that have the potential to become epidemics.

One participant explained:

“The facility health services should also be integrated with public health surveillance systems. Some communicable cases might happen in homes without medical attention. Without consideration of active surveillance in the communities, the disease outbreak could easily occur without the knowledge of the responsible authorities.” (DDHO)

Moreover, the majority of participants suggested that surveillance systems which address diseases with public health concerns should be established either at the health facilities or at the community level, as some ill individuals may display low health-seeking behaviour. The role of the surveillance system during public health responses should not be ignored, as it helps to monitor the health situation. After the intervention, it assists in measuring the progress that was made as a result.

One participant added:

“I have seen the surveillance data as very helpful for public health authorities to protect the public, and to verify and respond to the needs of the affected population.” (GRHB)

Rapid assessment and data use for planning implementations

The participants learned that the provision of any humanitarian responses should depend on evidence, such as information on the situation, the location of displaced people and refugees, and where they have come from. A quick assessment by the local authorities was seen as critical and informed the responses. Some participants also stated that the presence of humanitarian needs is confirmed through rapid assessment and can highlight the health impact of the emergency and the capacity gaps identified in the existing facilities. The findings of the rapid assessment include proposed priorities that can guide informed decision-making for mobilising resources. Supported with evidence, the concerned actors can plan based on the acknowledged gaps and the need for immediate responses.

One participant explained:

“Rapid assessment is very crucial, as different organisations have different mandates. The report should include not only the number of people affected, but should also be disaggregated by sex and age, and be shared with partners so that they prioritise needs. It also helps the partners to mobilise their limited resources at a minimal cost, as duplication is minimised.” (LRDHO)

Another stated:

“During the flooding that displaced the refugees and host communities in Nyinnyang, we carried out an assessment using participant interviews with community leaders on the needs of the displaced people, both refugees and hosts. We also conducted focus group discussions with the affected women on what needs they and their children had. Health facility records were roughly reviewed and quantitatively analysed to identify the top morbidities. Observation of the situation in the flood-affected areas was also conducted. Based on all the findings,

the decision was made to support public health interventions for both groups. The findings also helped the zonal and district authorities to convince humanitarian agencies to support health facilities with all the required resources. With the resources mobilised, the health workers in the existing health facilities were deployed to offer public health services. The health partners agreed to avail the required supplies for health services, including the operational cost for health workers who worked overtime.” (MKDHO)

Supervision and performance reviews

The majority of the participants revealed that the supervision of public health facilities in the emergency-affected areas is critical to identify gaps and plan for the immediate needs of the population. While participants learned the need for district health offices to conduct frequent supervision visits to health facilities, continuous supervision was found not to have taken place. All participants in the region and the districts admitted to inadequate visits to health facilities due to budget shortages.

One participant noted:

“Continuous supportive supervision can assess and address the public health gaps that might be related to resources for the provision of communicable diseases and maternal, new-born, child and adolescent health services at the facility level. However, issues don’t allow us to go and see health facilities in a timely manner.”
(GRHB)

The participants stated that the continuous supervision of public health facilities could help to replace staff who have left the facilities. With the high staff turnover observed in all districts, many health workers took the guidelines with them when they left the facilities, yet facilities have to remain operational, even with inadequate staff members and no guidelines on health programmes. The participants shared that health facilities need to have guidelines and trained health workers to act as rapid responders to communicate any unusual occurrences of public health concern. Supportive supervision by the senior staff members from the next level of administration can enable the health facilities to identify the required levels of prepositioned supplies to be in stock. The availability of certain minimum stock can allow health facilities to provide primary health care services until humanitarian partners are mobilised. One participant recognised that the poor

supervision of health facilities could lead to bad planning and inappropriate emergency responses:

“Without data at hand, the health needs of the affected populations could have not been addressed.” (MKDHO)

Similar findings support the need to strengthen or establish a strong monitoring and evaluation system to ensure a better response at various level of health service. Khan et al (2018:10) acknowledged the need of monitoring and evaluation functions to understand what works well or what did not work well in public health emergency management. According to Pyone et al (2015:652), the provision of public health services should be informed by evidence of the necessity for rapid assessments during the acute onset of an emergency. Supervision and performance reviews were among the positive lessons learned to improve on service provision. Disimilar findings were presented in a study by Avortri et al (2019:4), where supportive supervision was reported to have brought no change to the quality of health services despite massive investiments being made to supportive supervision.

- **Improve the availability of infrastructure**

In this sub-category, health managers explained the availability of infrastructure in existing health facilities as being vital for preparedness, response, and resilience building.

Emergency preparedness and responses

Many health experts learned that the preparedness plan was a resource mobilisation plan that highlights the required input to be procured and distributed to health facilities; it can also identify gaps. The gaps in health system capacity can be assessed by checking the availability and absence of required drugs, equipment, diagnostic tools and other equipment in the existing facilities, and then advocating to fill the gaps. It also includes mobilising funds for service provision and the procurement of supplies. It enables the facilities to have trained rapid response teams as a human resource for service provision.

The availability of preparedness-related resources was explained by the participants as tools that enable actors to offer public health services. Having no preparedness plan, or

a poor plan that has no detailed description of the resources needed for response, is linked to poor infrastructure.

Some participants recognised that an emergency preparedness plan enables the health system to consider who needs to do what during humanitarian responses. The distribution of tasks among the health partners was mentioned by participants to enable the timely implementation of public health interventions to people in need. The presence of an emergency preparedness plan is also important in strengthening the coordination mechanism using existing structures, and is used as a working document to identify and mobilise resources during public health responses.

Based on the context, the availability of an emergency preparedness plan for known public health problems was recognised as a framework document that activates resources for the development of key public health messages based on existing public health problems. It is also a working document to identify that health facilities need to have coordinating bodies that can organise the provision of public health services during emergencies. The emergency preparedness plan recommends that rapid assessment is immediately implemented after the occurrence of a crisis. The participants mentioned that the preparedness plan further proposes interventions informed by the results of rapid assessment. It also informs the development of output indicators with targets to be achieved, with the aims of increasing services to the targeted populations and reducing morbidity and mortality related to humanitarian crises.

Although public health emergency responses are informed by the findings of the rapid assessment, most participants learned that the successful provision of public health services to emergency-affected populations depends on the continuous provision of health commodities and the availability of good infrastructure.

Resilience in the health system

Participants recognised that different interventions make a significant contribution in developing the resilience of health systems. Providing health services to emergency-affected populations in existing public health facilities can promote the capacity of the local system, as many supplies for immunisation, maternal and new-born health services were received from humanitarian organisations. These supplies are being used for

humanitarian and routine health services in public health facilities. Local and national actors are always first responders at the onset of crises through different types of support (timely responses mean fewer losses, fewer injuries and less damage), and are often the only responders in the critical first 72 hours after the occurrence of an emergency (Gingerich & Cohen 2015:18).

Most participants stated that the incorporation of emergency preparedness into long-term development programming could save lives by establishing resilient health systems that can respond to any emergency.

One participant said:

“I have learned that the linkage of the humanitarian and development interventions can also help the stakeholders in coordinating, create accountability for the results achieved, and set clear job descriptions on who needs to do what.” (GGDHO)

Most participants stated that the presence of infrastructure in the health facilities plays a critical role during emergencies and capacitates the existing weak health system to know what to plan, prepare and do in response to any humanitarian situation. Making health facilities more resilient has long-term benefits, too.

One participant explained:

“The government should consider addressing the issues of infrastructure, medical equipment and essential drugs as well. By strengthening the existing health facilities that are the receivers of the emergency-affected populations, the government will develop the future resilience of the health system.” (NZHD)

Kumar and Gupta (2012:13) identified health infrastructure to play a critical role during emergencies and it is a determinant for health systems' functionality. Similar findings were reported by Khan et al (2018:9), who claim the availability of infrastructure emerged as essential for emergency responses.

- **Increase fund allocation**

The participants learned that poor infrastructure includes inadequate water and electricity supply. The poor diagnostic capacity, the stockout of supplies and high staff turnover in most public health facilities were linked to insufficient allocations of budget across all levels of health systems in Gambella.

The participants mentioned that the unavailability of diagnostic services forces health workers to empirically treat their clients, based on clinical judgements. The unavailability of diagnostic tests, some medical equipment and power supplies contribute significantly to morbidity and mortality.

One participant suggested that:

“I think the federal government should consider allocating more money to Gambella Region, apart from the equity formula, according to which the state only got 0.5% of the national budget based on its 0.5% of the population ... Gambella Region hosts not only refugees, but has an internal population burden as well. The region accommodates its brother and sisters from the various regions within Ethiopia due to economic opportunities and investment, as the land is suitable for agriculture ... gold mining in Dimma District ... and the presence of different INGOs for refugee operations.” (GRHB)

One participant learned that:

“We learned that better results could be achieved for host and emergency-affected people if the stakeholders supported the existing health system with all resources required for service delivery, like essential medicines, data management... and more, if the donors channel their resources, including funds through the regional government, especially for health services that have no borders.” (NZHD)

Another expert narrated that:

“It is crucial to capacitate the local health systems, as external support to humanitarian situations requires some procedures while the public health needs to the affected population seem most urgent. Bottlenecks that could prevent the

implementation of public health services need to be identified, and the affected individuals need to be aware as to where they should access the health facilities. Partnerships and the integration of different interventions are most important in effectively and efficiently using limited resources. Good collaboration maximises result-based interventions and limits duplications. There could be a needs-based protocol that describes the roles and responsibilities, and measurable results. It is very essential to have a results matrix, with each partner responsible for its implementation and reports.” (ITDHO)

Most participants mentioned that during humanitarian situations, the local health systems are the first respondents to both external and internal crises, although funds that are fundamental for running the services are not at hand. The humanitarian sectors were seen to lose ground in the battle of humanitarian responses by not giving due attention to building local capacity, which could significantly improve the effectiveness of the humanitarian responses (Delaney & Ocharan 2012:6). The allocation of sufficient funds can address gaps by building the local health systems’ capacity to respond appropriately to a humanitarian emergency (Gingerich & Cohen 2015:39)

- **Strengthen the development of human resources for health**

This sub-theme explains what health experts learned during the humanitarian responses in the Gambella Region.

One participant commented:

“I learned that human resources are the most needed element for any provision of public health services, either during humanitarian responses or in the routine program. The presence of the health workers trained in emergency preparedness and responses can support the programmes, although the high turnover has become another disaster in this district.” (LRDHO)

The implementation of public health services during humanitarian responses at existing health facilities can reduce emergency-related morbidities and mortalities if the appropriate health workers are recruited. Moreover, strengthening the local health system is the best approach to humanitarian responses, as people are being displaced or refugees are being received in areas where the host community health facilities exist.

Humanitarian responses can be linked with the existing health system to resolve issues related to inadequate supplies during emergencies.

One participant acknowledged the importance of multisectoral responses:

“During the acute emergency influx of refugees ... we were surprised when we received a huge influx via Buribiey and Akobo entry points, as we knew we had no supplies to respond. Through our networking with humanitarian organisations, our supplies were brought by UNHCR partners using a rented helicopter, as access via road was impossible. The partnership also helped in communicating the daily and weekly reports we were sending through text messages, using the Thuraya satellite phone provided by the UN agencies through the provided technical consultant.” (WNDHO)

During humanitarian situations, health facilities can share their resources with non-emergency-affected areas. The linkage of humanitarian and development programmes was also mentioned as being helpful in mobilising resources.

One participant noted that:

“The existing health facility where asylum seekers were settled was supported through the mobilised resources from other health facilities in the district while waiting for external support from the regional level.” (ITDHO)

xxx

Participants also acknowledged the importance of social mobilisation for the affected populations so that they know where to get public health services, including the locations and types of services available. The participants thus mentioned the need for rapid response teams at the district level. Similar findings were reported by Khan et al (2018:9), where the need for the availability of skilled staff members emerged as essential for public health emergency responses. Also, Sami et al (2018:10) found that reaching the stated sustainable development goals (SDGs) in 2030 will require continued investment in national health systems. Health system investments that include the development of health workforces were identified to improve access to services (Geleto et al 2018:11).

4.3.2.2.6 Theme 6: Role and responsibilities during humanitarian responses

This theme refers to the roles and responsibilities of the RHB, districts (*woredas*) and health facilities during humanitarian health emergencies.

Table 4.16 Theme 6: Roles and responsibilities during humanitarian responses

Theme	Sub-theme/Category	Problems and or issues
Role and responsibilities during humanitarian responses	Regional health bureau (RHB)	<ul style="list-style-type: none"> • Overall coordination
	Zonal health departments and district health offices	<ul style="list-style-type: none"> • Support health facilities
	Health facilities	<ul style="list-style-type: none"> • Provide public health services

Table 4.16 reveals that the provision of public health services needs to be supported by leadership commitment, with clear roles and responsibilities. Theme 6 has three sub-themes, namely role and responsibilities of RHB, zonal health departments and district health offices, and health facilities.

- **Regional health bureau (RHB)**

Most participants mentioned that the RHB’s public health emergency department had played a coordinating role in responses with partners. During an acute crisis, it requested the humanitarian organisations to actively support the local health systems, despite the absence of protocols. The RHB also mobilised required resources for humanitarian response, as the system is not prepared for massive influxes of refugees.

One participant explained the critical roles and responsibilities of the RHB in humanitarian responses:

“For instance, there was a time when asylum seekers were living with the host communities after crossing the borders and before they could claim refugee status via the UNHCR registration. The host communities and refugees shared the limited services that existed for the host communities. Later, one health humanitarian partner started providing health services to asylum seekers, but only during the daytime – services ended at 3:00pm due to the organisation’s policy of no overnight stays at entry points. After the failure of this humanitarian organisation to provide full humanitarian services to asylum seekers after 3:00pm, the RHB was forced to

request potential partners who could cover the operational cost of duty health workers. The bureau also played a critical role in requesting emergency drugs and other supplies from health partners. The regional health bureau directed the woreda health office and health facilities under district jurisdiction to select health workers, regardless of their nationality, who could provide public health services to emergency-affected populations. The intention was to serve the best interests of host communities to be protected against the communicable diseases, but later this programme benefitted both the host and refugee communities.” (GRHB)

Other participants mentioned that during emergency situations, the RHB conducted a quick assessment with health partners and prioritised the health needs of the affected people with other stakeholders. Based on the data, they developed a response plan that was implemented, despite having no contingency plan before the crisis happened.

During the participant interviews, the majority of participants shared that the RHB supports capacity-building training for frontline health workers and sometimes conducts supportive supervision of emergency health services carried out in the region.

One participant elaborated:

“I know the RHB follows the decentralised systems of governance, where their role has been to request health commodities and operational-related costs from partners and distributing supplies to the districts. The districts distribute the health supplies to health facilities and play a monitoring role. The health facility assigns health workers who offer public health services to emergency-affected populations.” (NZHD)

A participant stated that:

“Although the public health service provision to the emergency-affected population is most needed, monitoring the quality of the services, the demand generation and making resources available needs accountability on the part of those who provide the services to the beneficiaries.” (GRHB)

Another added:

“The RHB is mandated for capacity building, coordinating with partners, requesting supplies from donors, mobilising resources. It maintains the monitoring roles and evaluates the implementation of public health emergency interventions, provides mentoring, and supervises the zones and districts, while the health departments, health offices in the districts (DHOs) are closely working with frontline health facilities on the provision of public health programmes to emergency-affected areas.” (GRHB)

Another participant remarked:

“I thank the regional health bureau and health partners from UN agencies and INGOs for their support of the district health offices in responding to disease outbreaks, capacity building on early warning, and some preparedness training of rapid response teams.” (WNDHO)

Though the RHB plays a critical role in mobilising partners to cover operational costs during humanitarian responses that save the lives of vulnerable communities, it was not easy. Significant time was wasted by looking for resources. This was the result of the unavailability of a needs-based protocol to guide emergency preparedness and timely response, as noted by a participant:

“Gambella Regional Health Bureau is expected to develop a needs-based protocol aligned to international standards, establish and strengthen partnerships, procure and request health commodities, and distribute them to health facilities before the crisis happens. I can say most of the humanitarian situations are known to happen and the system could prepare ahead if we were strong enough.” (GRHB)

Ethiopia followed a decentralisation system of governance where the RHB is responsible for coordinating health care services at the state level (FMOH 2015:63). These findings are dissimilar to those reported in India, where all decisions were made at the central level (Kumar & Gupta 2012:10).

- **Zonal health departments and district health offices**

Health departments in zones and district health offices are the bodies responsible for coordinating the direct implementation of public health interventions to all functional health facilities in crisis-affected areas.

Participants mentioned that they request either technical or material support from the RHB, and the RHB should act based on those requests. In humanitarian situations, they were the concerned authorities who ensured that health workers were selected from the nearby health facilities for humanitarian responses, without disrupting routine health services. They also ensured that the selected team received the required supplies for public health provision, such as vaccines and essential drugs.

One participant elaborated that:

“Not only during the humanitarian situations, the zonal and districts health offices normally request supplies for routine health services provision from the Gambella Regional Health Bureau. They also communicate the health workers’ capacity-building needs with the regional health bureau. The district health offices that work with health facilities will also advise the RHB of the need for maintenance of ambulances in the health facilities that have them.” (NZHD)

A participant further explained:

“The district health offices and the frontline health facilities coordinate the service provision to the beneficiaries in the district, in all villages of Abobo.” (ABHO)

The district health offices also coordinate health promotion and community dialogues on the health challenges and bottlenecks that prevent mothers from utilising health services.

A participant added:

“The district health offices implement the advocacy and community dialogues where women discuss their health needs and to increase the uptake of services by their children.” (DDHO)

The participants mentioned that zonal and district health offices conduct integrated supportive supervision for health facilities in the emergency-affected areas and ensure the required resources for the implementation of identified interventions to address prioritised problems, including the use of data.

One participant noted:

“We provide the supplies, and monitor, supervise and conduct review meetings for the programme performance reviews. We also support the health facilities on data management, while the health facilities provide the services.” (DDHO)

Another participant remarked:

“The zonal and district health offices exercise all leadership functions in coordination with the health partners ... The district distributes and assigns the health workers, clinicians, pharmacists and laboratory technicians to address the health needs of the emergency-affected refugees and the surrounding host communities.” (ITDHO)

A further participant commented:

“District health offices work with RHB technical staff deployed to support the districts and follow the rapid response teams trained by the RHB.” (LRDHO)

As stated, the health system of Ethiopia follows the decentralised structure adopted in the 1995 constitution where regional states are divided into zones, woredas (districts) and kebeles, which is the lower administration level in Ethiopia (FMOH 2015:18). In Ethiopia, including Gambella Regional State, each zone and woreda has a zonal health department and woreda health office, respectively. Despite the existing structures, most regional states, zonal health departments and woreda health offices in Ethiopia were found to have inadequate capacities in planning, implementing and monitoring health interventions (WHO 2013f:22).

- **Health facilities**

The participants explained that health facilities were responsible for public health service provision in emergencies in the region. The public health facilities offer non-selective arrival vaccinations and medical consultations to South Sudanese asylum seekers entering Ethiopia via Gambella. The facilities collect and send situation reports to district health offices and monitor and request medical supplies. The facilities also receive supplies from their health partners.

The participants mentioned that health workers working in public health facilities not only respond during emergencies but participate in establishing emergency preparedness for humanitarian and development programmes. Health facilities also coordinate public health interventions by assigning supervisors who support the teams. Despite the recognised roles of health facilities in Ethiopia offering 89% of health service delivery, inadequate capacities at the local level, including the poor referral linkages among the facilities, were the most reported public health challenges identified in facilities (WHO 2013f:15). Nickerson et al (2014:681) identified functional health facilities as a point of contact where disease diagnosis and treatments happen.

4.3.3 Overview of key research findings

This section presents a summary of the key findings from the qualitative and quantitative results and the integration thereof.

The convergent parallel mixed-method approach was used for this study. The findings from the quantitative and qualitative data were mixed after both sets of data were collected concurrently, separately analysed and outlined.

The quantitative phase assessed and exposed what was available, as well as gaps in the public health services and the required resources for the provision of health services in the assessed public health facilities. The qualitative phase explored and identified health needs and responses in the context of the recent humanitarian emergency situation. The findings from the qualitative phase revealed how, why and who the players were in ensuring the availability of services. The findings further exposed the true experiences of those involved in humanitarian responses. The findings from both the quantitative phase

and qualitative phase exposed the challenges people were facing. In summary, according to this study, while public health services are being offered in the assessed public health facilities, major challenges were noted, which the protocol should address. In brief, these are:

- Lack of infrastructure: electricity supply was available in only 34% of assessed health facilities; only 15% of health facilities had a functioning landline telephone available to make calls outside the facility, and only 6% had internet connectivity to communicate data; inadequate supplies, as the government has no, or a limited budget allocated for emergency preparedness.
- Poor manpower, such as staffing with less experienced health workers with poor skills; staff turnover. Poor leadership and frequent changes of senior personnel in leadership roles added to manpower challenges.
- Weak referral systems and non-integration of services.
- Poor supply management system whereby there were stockouts in essentials, such as medicines and other important amenities.
- Poor supervision, monitoring and evaluation.
- Inadequate preparedness and contingency plans have resulted in humanitarian situations being under the auspices of international humanitarian organisations.

A proposed protocol was suggested based on the key findings which emerged from integrated findings from both qualitative and quantitative phases.

4.4 CONCLUSION

Chapter 4 presented the findings of the study. The analysis established that public health services are being offered in health facilities that lack critical infrastructure. The provision of public health services to humanitarian-affected communities was not up to standard due to inadequate resources, poor coordination, partnership and inadequate integration among actors. Making the required resources available could reinforce the capacity of the local health systems to offer the full packages of public health services to refugees, flood-affected individuals, internally displaced individuals, and during disease outbreaks. Most communities in Gambella were found to be a mobile population with the need for public health service expansion. However, the local authority cannot expand mobile

public health services through outreach programmes to those in need due to acknowledged limited supplies.

Thus, it is essential to propose appropriate interventions, in the form of a protocol, to address the barriers experienced by public health services in an effort to respond adequately in humanitarian situations in Gambella.

The next chapter presents a summary of the findings of the study, which should inform the proposed protocol for humanitarian emergency health responses in Gambella.

CHAPTER 5

PROPOSING A PUBLIC HEALTH SERVICE PROTOCOL FOR HUMANITARIAN EMERGENCY RESPONSES IN GAMBELLA, ETHIOPIA

5.1 INTRODUCTION

In this final chapter, the research findings are summarised with a focus on key issues in assessing the availability of public health services in humanitarian responses in Gambella. The findings should inform the development of a public health service protocol for humanitarian emergency responses in Gambella.

The chapter argues that meeting the needs of the affected population is a viable response during an emergency. It is in this light that the researcher developed a protocol to avail public health services in a humanitarian response. The protocol should be needs-based.

This chapter further discusses the strengths, weakness and the contribution of the study. The conclusions and the recommendations, as informed by the findings, are presented at the end of the chapter.

The objectives of the study were to:

- Explore and describe the availability of public health services and resources required for humanitarian emergency responses.
- Explore and identify current humanitarian emergency health needs and responses.
- Study and critically analyse different humanitarian responses in respect of health care services and the related protocols.
- Develop a public health service protocol for humanitarian emergency responses in Ethiopia – such a protocol must be context- and needs-based.
- Clarify the policy and programme implications of such a protocol.

Based on the objectives above, exploring and describing the availability of public health services and resources required, in line with objective 1 of the study, was discussed under subheading 4.3.2.1 in Chapter 4 of this thesis. Exploring and identifying current

humanitarian emergency health needs and responses in line with objective 2 was discussed under 4.3.2.2 in Chapter 4 of this thesis.

Studying and critically analysing different humanitarian responses in respect of health care services and the related protocols thus responding to objective 3 was discussed in Chapter 2 of this thesis.

Developing a public health service protocol for humanitarian emergency responses in Ethiopia as well as clarifying policy and programme implications of such a protocol in line with objectives 4 and 5 respectively were addressed in Chapter 5. It is therefore, the view of the researcher that all the study objectives have been met.

5.2 MAIN FINDINGS

Gambella Regional State is situated at the border of South Sudan where nine of its 13 districts have open borders to different counties of South Sudan. The Gambella State, which is a South Sudanese refugees' entry point to Ethiopia, has its own complex humanitarian situation. The study found that a high influx of refugees is further aggravated by social and demographic factors such as immigration flows of people escaping in-fighting and entering Ethiopia via Gambella State. Cross-border conflicts, inter-clan conflicts, flooding, and disease outbreaks in the neighbouring provinces of South Sudan are rampant causes of humanitarian emergencies and responsible for the massive entry of refugees into the Gambella Regional State. These factors caused population shifts, affecting population size and distribution, as well as disease patterns, and accordingly, public health needs and responses in the Gambella State.

5.2.1 The current humanitarian emergency needs and responses

5.2.1.1 The current humanitarian emergency needs

For this study, a need is a public health service required during a humanitarian emergency. The lack of clean and safe drinking water, overcrowding, poor shelters, and low immunisation at the refugee camps and host communities affect mostly children and contribute to an increase in morbidity and mortality rates. Diarrhoea, respiratory tract infections, measles outbreaks, polio, and other childhood-related illnesses are on the

increase, requiring tangible preventive measures and control of public health measures. For instance, the study found that South Sudanese refugees who fled their homes due to fighting presented with poor health, as explained above.

The poor living conditions were fertile ground for the transmission of communicable diseases. The researcher further established that there were refugees who came from South Sudan where cholera and measles were declared outbreaks. The refugees in Gambella, were vulnerable to exposure to such diseases, and it is extremely difficult to manage the transmission of these communicable diseases. The need for public health services in emergencies in this humanitarian situation was elevated as a result. Moreover, since women who were in their reproductive years formed a significant component of the refugees in Gambella, the study identified the provision of reproductive health services, including maternal health, as a need. In this study, the services that were needed therefore included FP, ANC, delivery services, and adolescent health services to address the public health problems affecting women and adolescents.

The study identified malaria, STIs and tuberculosis as problematic to the refugees, hence the need to develop prevention and control measures were identified as public health programmes. Gambella is deemed a watery state with seasonal flood emergencies and malaria; other vectors and water-borne diseases were thus rife, suggesting prioritising and establishing a strong malaria programme. The current study further identified HIV/AIDS services as a need and priority since Gambella Regional State has the highest prevalence of HIV/AIDS as a burden in Gambella State. The risks to HIV/AIDS were found to be associated with cultural, structural and behavioural factors.

It was determined that humanitarian-affected communities were susceptible to the risk of TB infection, mainly due to their living conditions, such as overcrowding and poor shelter. This finding suggested the need for an effective TB prevention and control programme to reduce the rate of cross-infections among the refugees, including contact tracing and follow-up.

In summary, the findings of this study identified the critical needs of MNCAH during humanitarian emergencies. Further, the prevention and control of communicable diseases such as malaria, HIV/AIDS and STIs and TB presented as a need requiring public health services to reduce the suffering of the affected communities who are part of

humanitarian emergency situations. The need for the robust implementation of public health promotions, social mobilisation and advocacy at various levels to create demand for maternal services related to ANC, FP, PMTCT, delivery and adolescent health service uptake was further reported.

5.2.1.2 The current humanitarian emergency response

For this study, a response is an established reaction to fulfilling or addressing the identified health needs in a humanitarian emergency situation. The study proposes the establishment of emergency preparedness and responses that will ensure the coordination of activities based on the identified needs. This requires coordination and cooperation between the department of health and other departments, the private sector, the NGOs, religious institutions, communities and women's organisations.

The needs-based humanitarian health emergency response at service level is required to:

- Ensure the provision of clean water, hygiene and sanitation to the refugee and humanitarian-affected communities in Gambella to prevent outbreaks and improve diarrhoea and other disease outcomes. In this regard, multisectoral engagements with an integrated package of responses between health, nutrition and WASH sectors could be essential to provide health services, food and sanitary services.
- Ensure the provision of public health services that address a comprehensive package of reproductive health needs such as FP and the provision of contraceptives, ANC, delivery services, postnatal care, adolescent reproductive health services, as well as immunisation and child health services.
- Develop public health programmes for the prevention and control of communicable diseases such as malaria, HIV/AIDS, STIs and other respiratory tract infections and TB.
- Acquire appropriate resources such as a skilled human workforce and funds, as well as adequate supplies, equipment and infrastructure at service level, including adequate shelter for the refugees.
- Ensure strong coordination and integration of services, leadership and partnerships, as well as functional referral systems.

- Recognise communication, advocacy and social mobilisation as a core element to mobilise resources for the prevention and control of diseases which could be caused in an emergency situation. However, the programme cannot be successful without properly managed data as an important pillar in resource mobilisation, planning and implementation. It is through available and reliable data on public health situations in an emergency that the extent of the gaps, bottlenecks and needs can be communicated to stakeholders, with the aim of developing a response plan for the identified health needs of populations.
- Develop a programme dedicated to managing, implementing, monitoring, evaluating and reporting on humanitarian health emergency responses in Gambella Region.

All the above should be backed by up-to-date and reliable data, which should be managed and used appropriately. Data and information flow should identify any gaps and their extent. Moreover, bottlenecks and community needs should be determined so that they can be communicated to stakeholders to facilitate the necessary improvements in the system. In light of the above, a protocol is proposed that will respond to communities' need for public health services in emergency responses in Gambella Region, Ethiopia.

5.3 PUBLIC HEALTH SERVICE PROTOCOL FOR HUMANITARIAN EMERGENCY RESPONSES IN GAMBELLA REGION

For the purpose of this study, a protocol refers to a programme that identifies public health problems in a given context and accordingly mobilises the resources required to address such problems and save and sustain lives. The programme should further define the procedures for acquiring resources to ensure public health service access as a humanitarian response to reduce morbidities and mortalities due to humanitarian consequences.

To reiterate, the study found that humanitarian responses in Ethiopia were provided without a contextualised protocol at the time of data collection. Based on the identified needs in Gambella, the protocol should serve as a guideline for the provision of public health services in humanitarian emergency responses. The suggested protocol should:

- strengthen the national health system through risk-informed planning to ensure a resilient health system.
- integrate public health services with other health and health-related interventions in order to create multisectoral emergency packages that can respond to public health needs. This should result in a partnership between public health with other sectors such as WASH, nutrition, education, and other sectors concerned with women and children's affairs who are in the majority during humanitarian emergencies.
- ensure communication, advocacy and social mobilisation structures are recognised as a core element to mobilise resources for the prevention and control of diseases which could be caused by an emergency. However, the programme cannot be successful without proper management of data as an important pillar in resource mobilisation, planning and implementation.
- recognise monitoring and evaluation as critical to the success of the humanitarian response during an emergency.

The political will and support of religious bodies should be sought in the management of the needs-based public health service protocol for humanitarian emergency responses in Gambella Region, while involving those affected. In addition, the involvement of a range of actors can help to improve the coordination of the responses. Communication, advocacy and social mobilisation are recognised in the protocol as a core element for resource mobilisation, the prevention and control of public health diseases. Figure 5.1 illustrates the elements of the needs-based public health service protocol for humanitarian emergency responses.

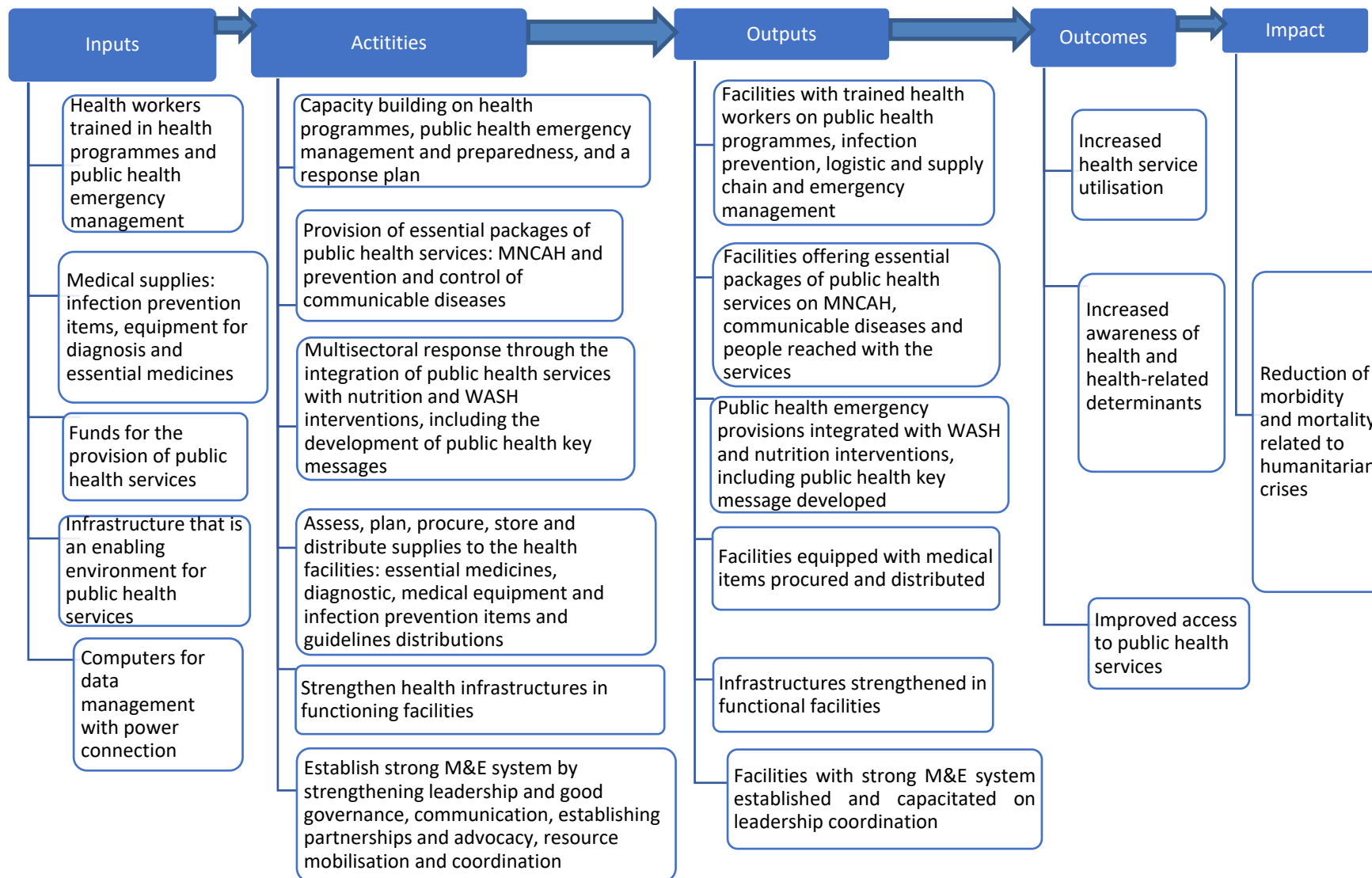


Figure 5.1 A needs-based public health service protocol for humanitarian emergency responses in Gambella Regional State, Ethiopia

5.3.1 The elements of a public health service protocol for humanitarian emergency responses

The three core elements of the public health service protocol for humanitarian emergency responses are problem identification, followed by context, and the programme cycle. The three elements are discussed next.

5.3.1.1 Problem identification

Problem identification refers to the identification of public health problems. The identification of public health problems is an entry point for systems' preparedness and establishing realistic humanitarian response strategies.

5.3.1.2 Context

The context or the setting refers to the space where emergency responses are implemented. The context determines the success of the proposed interventions. Eastwood, Woolfender, Miller, Shau, Garg, Liu, De Souza and Ettema (2019:2) recognise contextual influences on the implementations of programme interventions, and therefore identified context to be an essential element of the programme design.

5.3.1.3 Programme cycle

In this study, the programme cycle refers to the entire public health system in an emergency that links the resources (inputs), the interventions (activities), and the immediate results that can be achieved after implementing proposed programme activities. These are measured through the indicators of a programme (outputs), including a reduction of illnesses as a result of access to and utilisation of public health services in humanitarian responses (outcomes), and a marked effect of public health measures at the end of the intervention, such as reduced mortality rates (impact). The objectives of public health services in emergency responses must be clear at the beginning of the intervention as informed by up-to-date and reliable baseline information, ongoing analysis and analysis after the intervention. This will assist in the measurement of the extent to which needs have been met.

Programme implementation of the protocol depicted as a programme will be monitored and evaluated through indicators. The programme will be implemented through input activities and output indicators, and the effects through outcomes and impact indicators as logically presented in Figure 5.1 above.

5.3.1.3.1 Input

The input in this protocol are the resources required to provide public health services in emergency responses. The input in this protocol responds to the needs analysis in this study. These include human resources with required skills; guidelines on health programmes; medical supplies; essential medicine, equipment, and diagnostic tests. Other critical input factors were related to the infrastructure and include water and electrical power supplies, and computers with internet access. Functional communication equipment and services, as well as health information systems to strengthen the health system, need to be in place. Functioning transportation services for emergency services, especially for maternal, neonatal and child health emergency responses are absolutely vital in the proposed protocol.

5.3.1.3.2 Activities

Activities in this protocol refer to public health interventions during emergency humanitarian situations. The proposed activities comprise various capacity building or training programmes, and the provision of essential health service packages to humanitarian-affected people. Multisectoral responses are required in conducting a rapid assessment, procuring, storing and distributing medical supply based on the gaps identified. The activities are summarised below:

- **Capacity building on health programmes, public health management and preparedness, and response plan**

Staff must be trained on the essential packages of public health services, public health emergency management, the integration between health, nutrition and WASH interventions for a protocol to achieve its aim. Moreover, staff require capacity building in terms of emergency preparedness and responses to address health needs. This also

includes training or capacity building on infection prevention and control, supply chain management, and on data and information management and uses.

- **Provision of essential packages of public health services in humanitarian responses**

These include the provision of integrated maternal and adolescent health services; provision of integrated child health and neonatal intensive care services; provision of immunisation services; the prevention and controls of malaria; establishment of a TB programme; prevention and control of HIV/AIDS and other communicable diseases in functioning facilities; provision of health emergency services within 72 hours of crisis occurrences. These services should be driven by trained health workers and available resources in the facility.

- **Multisectoral response through the integration of public health services with nutrition and WASH interventions in emergencies**

The proposed protocol promotes integrated public health, nutrition and WASH in emergency interventions to holistically address the needs of humanitarian-affected communities. This includes malnutrition screening and treatments, food security interventions, the provision of vitamin A supplementations to targeted children, and deworming tablets to eligible children. Hygiene promoting activities, sanitation and water supply components should also be facilitated for the prevention of communicable diseases. A combination of interventions could not only address the health needs of emergency-affected communities, but also strengthen overall public health service delivery.

- **Assessing, planning, procuring, storing and distributing supplies to health facilities in respect of essential medicines, diagnostic, medical equipment and infection prevention items**

The proposed activities include rapid assessments on the existing capacities of the facilities and identification of the gaps in respect of the procurement and distribution of medical items and other equipment, including physical examination and laboratory equipment.

- **Strengthening health infrastructure in functioning facilities**

These include identifying rooms that have auditory and visual privacy for clinical consultations in the facility; establishing and ensuring clients' access to adequate sanitation facilities; supporting the implementation of institutional WASH in all functioning facilities, with improved water sources within 500m of the facility; supporting and ensuring the availability of emergency transportation in the health facility (including financial resources for transportation); supporting and ensuring the availability of communication equipment (including phones or a two-way radio). The protocol further proposes the installation of electric power supplies in the facilities with lights for communication purposes, and outages of fewer than two hours a day is important. Moreover, the availability of computers, internet services and email addresses are vital for official communications.

- **Strengthening leadership and good governance, communication, establishing partnership and advocacy, and resource mobilisation and coordination**

The protocol embraces capacity building and the establishment of appropriate leadership and good governance among health managers and experts at all levels. The protocol further proposes the deployment of communication service focal points. Communicating emergency key messages to the affected communities in order to empower them on disease prevention and health promotion underpin the proposed protocol. This should be coupled with advocacy, social and resource mobilisation and community dialogues using locally adopted public health emergency messages in order to increase awareness and create demand that improves uptake of available public health services during a humanitarian emergency. The NSW Ministry of Health (MOH) (2017:9) refers to programme activities as fundamental actions needed to yield output results.

5.3.1.3.3 Output

The output component in this protocol refers to immediate results achieved prior to the implementation of activities. The proposed output are facilities with trained health workers on public health programmes, infection prevention, logistic and supply chain and emergency management. Facilities should also offer essential health service packages on MNCAH and communicable diseases, and ensure people are being reached with the

services. Moreover, public health emergency provision, integrated with WASH and nutrition interventions, including public health key message development, are required. Facilities must be equipped with medical items that are procured and distributed; infrastructures should be strengthened in functional facilities; and facilities should be underpinned by a strong monitoring and evaluation (M&E) system.

At the service level, this will highlight the number of health workers trained on:

- public health emergency management, including emergency preparedness and responses
- supply chain management systems, monitoring and the evaluation of health programmes, including data management and uses

5.3.1.3.4 Outcomes

It is anticipated that communities affected during humanitarian emergencies could develop a positive behaviour towards the utilisation of existing public health services due to the demand that is created for services. Services include FP, ANC, delivery, postnatal care, immunisation, child health, adolescent reproductive health services, the management of diseases that threaten human lives (malaria, TB, HIV, PMTCT, STI), and basic surgical services.

The anticipated outcomes would therefore include increased immunisation, ANC attendance, and increased institutional delivery coverage. Increased utilisation of public health reflects and measures a return on investments in the public health programmes. Moreover, the humanitarian-affected communities could be made aware of communicable diseases and their prevention.

5.3.1.3.5 Impact

A well-coordinated, multisectoral, interdisciplinary and integrated intervention could have an impact on the factors that affect health statuses, disease profiles, and reduce related mortality, which characterise a humanitarian emergency crisis. Watson (2008:3) views an impact as the chain that starts with the identification of required input, proposes the activities, then output and outcomes to reach the anticipated impact results.

The suggested protocol logically follows the programme cycles by unpacking the link between the required resources and proposed programme interventions, and the expected results prior to the use of resources for public health service interventions. The directions in the suggested protocol show a possible significant reduction in morbidity and mortality rates as a result of humanitarian-related input and implemented activities.

5.4 POLICY AND PROGRAMME IMPLICATIONS IN RESPECT OF THE DEVELOPED PROTOCOL

Public health care service provision was assessed to identify any gaps that are experienced in meeting the health needs of humanitarian-affected people in Gambella Regional State. Interviews were held with participants at designated areas to identify needs. The facilities were further assessed through quantitative methodologies.

The findings pointed to a lack of service integration that addresses the health needs of humanitarian-affected communities in Gambella Regional State. The study revealed the importance of improving emergency preparedness in order to respond adequately to the identified humanitarian health needs in Gambella Regional State.

At policy level, the goal should be to focus on addressing conditions that expose the emergency-affected people to high risks of morbidity and mortality in Gambella Regional State. The findings suggested collective efforts to establish partnerships and the integration of services at policy level. The mobilisation of necessary public health resources was deemed essential at policy level.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

This study assessed the availability of public health services in humanitarian responses in Gambella Regional State in Ethiopia. Critical gaps due to poor health system preparedness and inadequate capacities to provide appropriate public health services to people in need were identified. There is a necessity for future research to include the private sector and a greater focus on national and international NGOs.

The study identified high staff turnover to be a burning issue, since facilities are being run by less qualified personnel. Future studies should embrace skills audits to review the

necessary capacity for humanitarian emergency responses. A deeper understanding of what preparedness means in the context of humanitarian emergencies is crucial and recommended for further studies. Furthermore, massive investments targeting long-term interventions for systems strengthening, strong coordination, and partnership strategies that involve all health actors to improve the observed weak leadership and governance, should be considered.

Most *woredas* were found to be located in South Sudan, from where refugees originated; the same *woredas* were affected by cross-border conflicts, cattle raiders and children abductions. Further research that links humanitarian development with peace-building efforts beyond humanitarian emergency responses is recommended to reduce instabilities that were found to be a root cause to humanitarian vulnerabilities.

The migration of South Sudanese refugees into the Ethiopian border in Gambella, where the prevalence of HIV/AIDS is high, is a public health concern. Research studies on the prevention and control of HIV, including availing HIV and TB services to vulnerable populations, are recommended. This should include the transmission of illnesses and diseases between host communities and refugees.

More research is also recommended to generate health data that would ensure appropriate planning, implementing, monitoring and evaluation of public health services in humanitarian emergency situations. There is also a need to keep programme owners updated on the current situation.

5.6 LIMITATIONS, STRENGTHS AND CONTRIBUTION OF THE STUDY

5.6.1 Limitations of study

Despite the strengths, the study was not without some limitations. The involvement of only health workers working in the public sector, and the inclusion of only public health facilities in Gambella Region, limit the generalisability beyond the public health sector. An examination of the involvement of the private health sector and NGOs could have contributed to the exploration of public health services during humanitarian responses. Similarly, this study involved only a small number of hospitals and health centres found in Gambella, located in a large country (Ethiopia) with different humanitarian situations.

The generalisability of the study's findings is limited to similar contexts only, as public health emergency responses might not be applicable in other parts of Ethiopia.

The study gathered the views of health workers working in health facilities. The views of health experts in humanitarian-affected communities may not be applicable to other districts or other regional states. In addition, the study did not include data on the views of the community who might have shared how the unavailability of public health services affect their utilisation. Furthermore, conducting interviews some time after humanitarian responses might have introduced recall bias among the health experts who were interviewed.

5.6.2 Strengths and contributions of the study

5.6.2.1 Strength of the study in relation to the protocol

The strength of this study lies in the development and consistent use of the suggested needs-based protocol. This study enabled the researcher to identify gaps that informed the development of protocol based on the analysed quantitative and qualitative findings. The required resources for the health system to be functional and the contextual factors mentioned during the face-to-face interviews with health experts were major components that added input to developing a viable protocol.

5.6.2.2 Strength of the study in relation to the system's strengthening

The study has contributed to the identification of critical gaps in the required resources that are essential elements in strengthening public health service provision in the Gambella Region. Strong partnerships, coordination, and integration of health service programmes at all levels among health partners is crucial for the successful implementation of the protocol. The domestic allocation of resources at state, zonal and district levels have been acknowledged by the study as important. The following aspects point to ensuring a functional protocol:

- Improvement of critical infrastructure that determines the quality of health care delivery, for instance, the electricity and water supplies.

- Community involvement, in particular the involvement of the affected population at all levels.
- Community participation in solving health problems can also increase acceptance of the available services and thereby improve health service coverage.

5.6.2.3 *Strength of the study in relation to the methodology*

The study used a convergent mixed-methods design as it was found to be the most appropriate design to explore this phenomenon. The quantitative and qualitative data collection and analysis took place concurrently, helping the researcher to gain an understanding of public health services. While the quantitative component allowed the researcher to examine the availability of health service resources, the face-to-face interviews with health experts explored the contextual factors that were seen to contribute to the availability of resources and health services in humanitarian responses based on identified needs. The integration of the quantitative and qualitative findings during the interpretation stage allowed the researcher to understand public health service needs in humanitarian responses. This was achieved through a description of similar responses from both data sets. The mixed-method approach enabled the researcher to identify critical findings that informed the development of the needs-based protocol.

5.6.3 The overall contribution of the study

The study aimed to develop a needs-based public health service protocol for humanitarian emergency responses. The researcher is of the view that a needs-based protocol can help in mobilising the resources required as a result of a crisis, which often results in a humanitarian emergency. In Ethiopia, emergency situations vary from state to state, and even within states, from zone to zone, and sometimes even within districts. Humanitarian emergencies are often characterised by unfortunate occurrences, such as population movements and displacements, refugees, floods, droughts, and disease outbreaks. Nonetheless, it does not make sense to only compare States; it is strategically important to differentiate and prioritise needs differently using multiple approaches. The study suggests the prioritisation of needs in order to reduce the impact of crises in respect of associated morbidity and mortality rates.

5.6.4 Strengths of the study in relation to its contribution at policy level

The study argued for a protocol that responds to the identified needs as informed by the findings. Strengthening public health delivery will result in strong and well-coordinated health systems, driven by multidisciplinary and multisectoral efforts. The protocol clearly provides guidance in terms of the necessary resources to ensure programme implementation and the desired outcomes. The researcher is of the view that the study objectives have been met.

5.7 CONCLUSION

The chapter discussed refugees' public health service needs while being hosted in Gambella, Ethiopia. The refugees are mostly displaced populations who entered the Gambella region for many reasons, including cross-border conflicts at the Gambella districts bordered with South Sudan, internal-clan conflicts, seasonal flooding, and disease outbreak. The study found that a viable response, befitting needs, should be provided in an emergency. The findings suggest that public health facilities and the services offered were ill-prepared and insufficient to ensure much-needed health responses. The study further established that the humanitarian emergency needs in Gambella were responded to by the overstretched, already weak health system, lacking resources, and not integrated with other appropriate services. In light of the findings, a needs-based protocol was developed. Such a protocol has three core elements, namely, problem identification, context, and the programme cycle. The latter embraces a typical series of actions that should be undertaken in the management of humanitarian response situations. The protocol emphasises integration and collaboration with existing partnerships in and outside the health sector.

The chapter concluded by discussing the weaknesses, strengths, as well as contributions of the study. The following section presents the final conclusion of this study.

5.8 OVERALL CONCLUSION

The purpose of the research was to assess the availability of public health services in response to humanitarian crises in Gambella, Ethiopia. This informed the development of a public health service protocol for humanitarian emergency responses in Ethiopia. The Gambella Regional State became a constant receiver of South Sudanese refugees with endless public health problems and inadequate responses to emergencies as a result of inadequate resources in the existing facilities.

An assessment of the availability of public health services in humanitarian responses was undertaken. The study found that the capacity of the existing health facilities of Gambella, Ethiopia, was sub-standard and overextended to effectively respond to the prevailing health challenges in the region.

The study further found that Gambella Regional State is prone to life-threatening emergencies and a severe refugee burden that is equal to or more than its local populace. Consequently, there is a noteworthy disparity in resource allocation, staff capacity, the provision of services and decentralised emergency responses when comparing populations in and around refugee camps to the rest of the local population. In addition to political-economic impacts, refugees also add to the risk-burden of uncontrolled communicable diseases in the region.

The study established that only 59% of facilities had FP guidelines and 62% had staff trained in FP. The availability of ANC services was inconsistent, despite the availability of tetanus toxoid vaccination in all facilities. Malaria preventive treatment to pregnant mothers is supposed to be available in all facilities, as the malaria risk is high in the region; however, only 50% of the ANC facilities offered intermittent preventive treatment for malaria. The study also found that only 50% of facilities had the necessary staff and guidelines to support women requiring intrapartum care.

Comprehensive obstetric care and caesarean sections were only provided in the single referral hospital for all cases in Gambella, including refugee referrals. Only 18% of facilities had emergency transportation (ambulances), which is critical to saving the lives of women during the complicated labour.

The provision of services related to maternal, new-born care, child health, and adolescent health was found to be inadequate due to poor infrastructure and inadequate medical supplies. The prevention and control of communicable diseases were also inadequate. Though the region is malaria prone, only 37% of facilities used malaria microscopy for diagnostics, and 50% had laboratory technicians on staff. Stockouts of essential medicines were reported in all facilities.

Despite the high TB burden and the high HIV/AIDS prevalence, more than 50% of health facilities neither had a trained health worker nor guidelines on the treatment of TB and TB/HIV co-infection. The study found only 37% of facilities offered laboratory examination using microscopy.

High staff turnover and frequent changes of leadership at different levels contributed to weak coordination in public health service delivery. Also, the study found:

- Poor integration of humanitarian and development programmes that could have improved the capacity of existing public health facilities responding to the emergency for long periods of time.
- The involvement of communities and emergency-affected populations was not considered.
- Despite the presence of mobile populations in some communities, pastoralist health services were also not taken into account.
- Underfunding to ensure the efficient operations of public health services and the acquisition of required resources for health system strengthening was reported.
- The lack of preparedness for humanitarian emergencies brought about by the massive movements across borders had an impact on the response required for health crisis management, as per the findings of this study.

In view of the findings of the assessment, a protocol to respond to the emergency situation brought about by the difficult situation in Gambella region was proposed.

The proposed protocol should assist the government of Ethiopia to:

- address the public health needs of populations during emergencies
- identify the resources needed in public health facilities to offer essential health service packages based on public health needs. This could be evidence-based informed preparedness and response plans that identify and fill existing gaps, in collaboration with all stakeholders engaging to minimise duplications, and collective efforts to reduce the suffering of emergency-affected people
- mobilise resources so that identified health intervention activities achieve the desired goals

The resilience of a strong functional health system is therefore vital in responding to the complex emergency situation at Gambella region as captured below in the words of NZHD and ITDHO, respectively.

“The government should consider addressing the issues of infrastructure, medical equipment and essential drugs as well. By strengthening the existing health facilities that are the receivers of the emergency-affected populations, the government will develop the future resilience of the health system.” (NZHD)

“It is crucial to capacitate the local health systems, as external support to humanitarian situation requires some guidance in the form of procedures as we to respond the public health needs to the affected population”. (ITDHO).

The researcher believes that the study objectives have been met. The insights arrived at in this study will hopefully alert the government of Ethiopia to give special attention to the refugees at the Gambella Regional State who do not always receive the necessary public health services required in humanitarian emergency responses.

Copies of this study will be made available to the MOH of Ethiopia, the Gambella Peoples' National RHB, ZHDs, *woreda* health offices, hospitals and health centres. Moreover, articles will be extracted from the thesis and published to reach the wider scientific community.

LIST OF REFERENCES

Abdella, Y., Hajjeh, R & Sibinga, C. 2018. Availability and safety of blood transfusion during humanitarian emergencies. *East Meditter Health Journal*, 24(8):778-788.

Active Learning Network for Accountability and Performance. 2015. *The state of the humanitarian system*. ALNAP, Overseas Development Institute, London, UK: ALNAP.

Adefemi, K, Awolaran, O, Yates, C & Bokare, J. 2017. Effects of donor HIV/AIDS funding on primary health care delivery in South West Nigeria: Evidence from hospital administrators. *International Journal of Health Care Management*, 10(3):160-166.

African Union. 2016. *Catalytic framework to end AIDS, TB and eliminate malaria in Africa by 2030: Stride towards sustainable health in Africa*. Addis Ababa: African Union.

Akl, E, El-Jardali, F, Karroum, L, El-Eid, J, Brax, H, Akik, C, Osman, G, Itani, M, Farha, A, Pottie, K & Oliver, S. 2015. Effectiveness of mechanisms and models of coordination between organizations, agencies and bodies providing or financing health services in humanitarian crises: A systematic review. *PLoS ONE*, e0137159:10(9):1-21.

Akoh, WE, Ateudjieu, J, Nouetchognou, JS, Yakum, MN, Nembot, FD, Sonkeng, SN, Fopa, MS & Watcho, P. 2016. The expended program on immunization service delivery in the Dschang health district, West Region of Cameroon: a cross sectional survey. *BioMed Central Public Health*, 16(801):1-8.

Available from: <https://doi.org/10.1186/s1889-016-3429-7>. Accessed 21 September 2017.

Alemu, T, Gutema, H, Legesse, S, Nigussie, T, Yenew, Y & Gashe, K. 2019. Evaluation of public health surveillance system performance in Dangila district, Northwest Ethiopia: A concurrent embedded mixed quantitative/qualitative facility-based cross-sectional study. *BioMed Central Public Health*, 19(1343):1-9.

Available from: <https://doi.org/10.1186/s12889-019-774-y>. Accessed 29 October 2019.

Ali, M, Farron, M, Ramachandran, D & Folz, R. 2018. Assessment of family planning service availability and readiness in 10 African countries. *Global Health Science and Practice*, 6(3):473-483.

ALNAP **see** Active Learning Network for Accountability and Performance.

Anselmi, L, Lagarde, M & Hanson, K. 2015. Health service availability and health seeking behaviour in resource poor settings: evidence from Mozambique. *Health Economics Review*, 5(26):11.

Antwi, S & Hamza, K. 2015. Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, 7(3):217-225.

Assefa, Y, Damme, WV, Williams, OD & Hill, PS. 2017. Successes and challenges of the Millennium Development goals in Ethiopia: Lessons for the sustainable development goals. *British Medical Journal Global Health*, 2:1-8.

Available from: <https://doi.org/10.1136/bmjgh-2017-000318>. Accessed 29 October 2019.

Athanasou, JA, Elias, MJ, Gitchele, MD, Difabio, A, Ferrera, R, Jansen, JD, McMahon, M, Malindi, MJ, Perry, J, Nieuwenhuis, J, Seabi, J, Pretorius, G, Watson, M, Theron, LC & Sklar, RH. 2012. *Complete your thesis or dissertation successfully: Practical guidelines*, edited by JG Kobus Maree. Cape Town: Juta.

Avortri, GS, Nabukalu, JB & Nabyonga-Orem, J. 2019. Supportive supervision to improve service delivery in low-income countries: Is there a conceptual problem or a strategy problem? *British Medical Journal Global Health*, 4(9):1-6.

Available from: <https://doi.org/10.1136/bmjgh-2018-001151>. Accessed 8 July 2020

Baytun, C, Rockenschaub, G & Murray, V. 2012. Developing a health system approach to disaster management: A qualitative analysis of the core literature to complement the WHO toolkit for assessing health-system capacity for crisis management. *PLOS Current Disasters*, 1:1-13. Available from: <https://doi.org/10.1371/5028b6037259a>. Accessed 12 November 2018.

Béné, C, Frankenberger, T & Nelson, S. 2015. *Design, monitoring and evaluation of resilience interventions: Conceptual and empirical consideration*. London: Institute of Development Studies.

Bhattacharjee, A. 2012. *Social science research: Principles, methods, and practices*. 2nd edition. USA: University of South Florida.

Bhattacharya, AA, Allen, E, Audu, A, Umar, N, Felix, H, Marchant, T & Schellenberg, J. 2019. Quality of routine facility data for monitoring priority maternal and new-born indicators DHIS2: A Case study from Gombe State, Nigeria. *Plos One*, 14(1):1-21. Available from: <https://doi:10.1371/journal.pone.0211265>. Accessed 16 July 2020.

BJegovic-Mikanovic, V & Otok, R. 2017. Preparation of European public health professionals in the 21st Century. *Public Health*, 5(18):1-6.

Black, RE, Laxminarayan, R, Temmerman, M & Walker, N. (eds). 2016. *Reproductive, maternal, new-born, and child health. disease control priorities*. 3rd edition. Volume 2. Washington, DC: World Bank.

Boell, SK & Cecez-Kecmanovic, D. 2014. On 'systematic' in literature reviews in Information System (IS). *Journal of Information Technology*, (30):161-173.

Brink, H, Van der Walt, C & Van Rensburg, G. 2012. *Fundamentals of research methodology for health care professionals*. 3rd edition. Cape Town: Juta.

Brun, C. 2016. There is no future in humanitarianism: emergency, temporality and protracted displacement. *History and Anthropology*, 27(4):393-410.

Bwalya, J & Kalu, F. 2017. What makes qualitative research good research? An exploratory analysis of critical elements. *International Journal of Social Science Research*, 5(2):43-56.

Carver, F & Nigusie, AA. 2019. *the comprehensive refugee response framework: progress in Ethiopia*. London: Overseas Development Institute (ODI).

Catholic Relief Services (CRS). 2013. *Humanitarian responses in violent conflict: A toolbox of conflict sensitive indicators*. Baltimore, USA.

CDC **see** Centre for Disease Control.

Centre for Disease Control. 2011. *Introduction to Program evaluation for Public Health Programs: A self-study guide*. US Department of Health and Human Services Centers for Disease Control and Prevention office of the Director, Office of Strategy and Innovative. Atlanta, USA.

Centre for Disease Control. 2012. *Global Disease Detection and Emergency Responses Activities at CDC 2012*. Center for Global Health, Division of Global Disease Detection and Emergency Response. Atlanta, USA.

Centre for Disease Control. 2016. *Updates from the Field, Emergency Response and Recovery: Summer, 2016, issue 22*. Department of Health and Human Science, USA.

Central Statistical Agency (CSA). 2013. *Population projections for Ethiopia. 2007-2037*. Addis Ababa, Ethiopia.

Centre for Disease Control. 2017. *Public Health Response to humanitarian emergencies (2007-2016)*. *Emerging Infectious Diseases*, 23:196-202.

Central Statistical Agency (Ethiopia). 2014. *Ethiopia Mini Demographic and Health Survey 2014*. Addis Ababa, Ethiopia.

Central Statistical Agency (Ethiopia). 2016. *Welfare Monitoring Survey 2016. Statistical Report: Basic population characteristics, education, Health, Child Care and Breastfeeding. Volume I*. Addis Ababa, Ethiopia.

Central Statistical Agency and ICF International. 2016a. *Ethiopia Demographic and Health Survey 2016*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.

Central Statistical Agency and ICF International. 2016b. *Ethiopia Demographic and Health Survey 2016: Key Indicator Report*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.

Central Statistical Agency and ICF International. 2016c. *Ethiopia Demographic and Health Survey 2016: HIV Report*. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF.

Chaudhary, P, Valese, G, Thapa, M, Alvarez, V, Pradhan, L, Bajracharya, K, Sekine, K, Adhikari, S, Samuel, R & Goyet, S. 2017. Humanitarian response reproductive and sexual health needs in a disaster: the Nepal Earthquake 2015 case study. Reproductive health matters. *International Journal on Sexual and Reproductive Health and Rights*, 25(51):25-39.

Chee, G, Pierlemeier, N, Lion, A & Connor, C. 2013. Why differentiating between system support and health systems strengthening is needed. *The international Journal of Health Planning and Management*, 28(1):85-94.

Cheechi, F, Warsame, A, Treacy-Wong, V, Polonsky, J, Van Ommeren, M & Prudhon, C. 2017. Public health information in crisis-affected populations: A review of methods and their use for advocacy and action. *Lancet*. ISSN 0140-6736(17):1-43.

Christian Action Research and Education (CARE). 2012. *Humanitarian and Emergency Strategy 2013-2020*. Geneva, Switzerland.

Clarke, D, Rajan, D & Schmets, G. 2016. Creating a supportive legal environment for universal health coverage. *Bulletin World Health Organization*, 94:482.

Corbet, A, Ambrosetti, D, Bayle, G & Labaze, M. 2017. *Public authorities and humanitarian actors: The stakes in a negotiated Interdependence. Case study in Gambella*. Paris, France: French Red Cross Fund.

Core Humanitarian Standard (CHS) Alliance, Sphere Project, Group URD. 2014. *Core Humanitarian Standard on Quality and Accountability*. 1st edition. Geneva, Switzerland.

Creamer, E. 2016. A Primer about mixed methods research in an educational context. *International Journal of Learning, Teaching, and Educational Research*, 15(8):1-13.

Creswell, JW. 2014. *Research design: Qualitative, quantitative and mixed method approaches*. 4th edition. Thousand Oaks: Sage.

CSA **see** Central Statistical Agency (Ethiopia).

CSA & ICF **see** Central Statistical Agency and ICF International.

Cosgrave, J. 2014. *Responding to flood disasters: Learning from previous relief and recovery operations*. London: ALNAP.

Culver, A, Rochat, R & Cookson, ST. 2017. Public health implications of complex emergencies and natural disasters. *BioMed Central Conflict and Health*, 11(32):1-7. Available from: <https://doi:10.1186/s13031-017-0135-8>. Accessed 22 January 2019.

Dalinjong, PA, Wang, AY & Homer, CSE. 2018. Are health facilities will be equipped to provide basic quality childbirth services under the free maternal health policy? Findings from rural Northern Ghana. *BioMed Central Health Services Research*, 18(959):1-9. Available from: <https://doi.org/10.1186/S12913-018-3787-1>. Accessed 13 July 2020.

Dean, SV, Lassi, ZS, Imam, AM & Bhutta, ZA. 2014. Preconception care: Closing the gap in the continuum of care to accelerate improvements in maternal, newborns and child health. *Reproductive Health*, 11(3):1-8. Available from: <https://doi.org/10.1186/1742-4755-11-S3-S1>. Accessed 24 June 2020.

De Cock, KM, Davison, V, Simone, PM & Slutsker, L. 2013. The new global health: Emerging infectious diseases. *Centre for Disease Control and Prevention*, 19(3):1192-1197.

Dejong, J, Ghatas, H, Bahour, H, Akik, C, Mourtada, R & Reese-Materson, A. 2017. Reproductive, maternal, neonatal and child health in conflict: A case study on Syria using Countdown indicators. *British Medical Journal Global Health*, 2:1-13. Available from: <https://doi.org/10.1136/bmjgh-2017-000302>. Accessed 11 March 2018.

Delaney, M & Ocharan, J. 2012. *Local capacity in humanitarian response: Vision or mirage?* Boston, OXFAM USA.

Dessaiegn, DM, Taye, B & Abay, S. 2016. The availability and functional status of focussed antenatal care laboratory services at public health facilities in Addis Ababa, Ethiopia. *BioMed Central Research Notes*, 9(403):1-8. Available from: <https://doi.10.1186/s13104-016-2207-z>. Accessed 21 September 2017.

Development Initiatives. 2017. *Global Humanitarian Assistance (GHA) Report 2017*. Bristol, UK.

DI **see** Development Initiatives.

Du Plooy-Cilliers, F, Bezuidenhout, R & Davis, C. 2012. *Research matters*. Cape Town: Juta.

Eastwood, JG, Woolfender, S, Miller, E, Shau, M, Garg, P, Liu, H, De Souza, D & Ettema, RG. 2019. Implementation, Mechanisms of effect and context of an integrated care intervention for vulnerable families in central Sydney Australia: A research and Evaluation protocol. *International Journal of Integrated Care*, 19(3):1-13.

ECHO **see** European Commission.

ECDC **see** European Centre for Disease Prevention and Control.

El Haji, H, Lamrini, M & Rais, N. 2013. Quality of care between Donabedian model and ISO9001V2008. *International Journal for Quality Research*, 7(1):17-30.

Elias, N & Accorsi, S. 2014. The last lap towards millennium development goals: The performance of the health sector in EFY 2005. *Quarterly Health Bulletin Policy and Practice*, 6(1):13-26.

EPHI, FMOH & ICF **see** Ethiopian Public Health Institute, Federal Ministry of Health and International Classification of Functioning, Disability and Health.

Etamessor, S, Ottih, C, Salihu, IN & Okpani, AI. 2018. Data for decision making: Using a dashboard to strength routine immunization in Nigeria. *British Medical Journal Global Health*, 3:1-7

Ethiopian Public Health Institute, Federal Ministry of Health and International Classification of Functioning, Disability and Health. 2014. *Ethiopia Service Availability Provision Assessment Plus 2014. Final report*. Addis Ababa, Ethiopia and Rockville, Maryland, USA: ICF International.

Ethiopian Public Health Institute, Ministry of Health and World Health Organization (EPHI, MOH & WHO). 2017. *Ethiopia Service Availability and Readiness Assessment 2016. Summary report*. Addis Ababa, Ethiopia.

Etikan, I & Bala, K. 2017. Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, 5(6):1-3.

Etikan, I, Mussa, S & Alkassim, RS. 2016. Comparison of convenience sampling and purposive sampling. *America Journal of Theoretical and Applied Statistics*, 5(1):1-4.

European Centre for Disease Prevention and Control. 2015. *Best Practices in ranking emerging infectious disease threats*. Stockholm: ECDC.

European Centre for Disease Prevention and Control. 2017. *Public Health emergency preparedness-Core competencies for EU member States*. Stockholm, Sweden.

European Commission. 2017. *Fact sheet*. Addis Ababa, Ethiopia. [Bit.ly/echo.fi](https://bit.ly/echo.fi).

Federal Democratic Republic of Ethiopia Ministry of Health. 2013a. *Quarterly Bulletin: Policy and practice information for action*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2013b. *Public Private Partnership (PPP) in Health Strategy Framework for Ethiopia*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2014a. *Ethiopia's Fifth National Health Accounts, 2010/2011*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2014b. *National Malaria Strategic Plan 2014-2020*. Disease Prevention and Control Directorate, Malaria Control Programme. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2015. *Health Sector Transformation Plan 2015/16-2019/20*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2016. *National Reproductive Strategy (2016-2020)*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia National Planning commission. 2016. *Growth and Transformation plan II (GTP) (2015/16-2019/20)* May 2016. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2017a. *National comprehensive and integrated prevention of mother-to child transmission of HIV (PMTCT) Guideline*. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health. 2017b. *Health and Health Related Indicators (2016/2017)*. Addis Ababa, Ethiopia.

Federal HIV/AIDS Prevention and Control Office. 2014. *HIV/AIDS strategic plan: 2015-2020 in an investment case approach*. Addis Ababa, Ethiopia.

Fetters, M, Curry, L & Creswell, J. 2013. Achieving integration in mixed methods designs – principles and Practices. *Health Services Research*, 4(2):2134-2156.

FHAPCO **see** Federal HIV/AIDS Prevention and Control Office.

FMHACA **see** Food, Medicine and Health Care Administration and Control Authority of Ethiopia.

FMOH **see** Federal Democratic Republic of Ethiopia Ministry of Health.

Food Medicine and Health Care Administration and Control Authority of Ethiopia. 2014. *National Essential Medicine List*. 5th edition. Addis Ababa, Ethiopia.

Fusheini, A & Eyles, A. 2016. Achieving universal health coverage in South Africa through a district health system approach: Conflicting ideologies of health care provision. *BioMed Central Health Services Research*, 16:1-11.

Gebresilassie, A, Yemane, D & Kumei, A. 2014. Standard precautions practice among health care workers in public health facilities of Mekelle special zone, Northern Ethiopia. *Journal of Community Medicine & Health Education*, 4(3):1-5.

Geleto, A, Chojenta, C, Musa, A & Loxton, D. 2018. Barriers to access and utilization of emergency obstetric care at health facilities in Sub-Saharan Africa: A systematic review of literature. *BioMed Central*, 7(183):1-14.

Getahun, W, Tadeg, H, Ejigu, E & Kora, A. 2015. *Health facility assessment on availability of the 13 reproductive, maternal, new-borns, and child health commodities prioritized by UN commission on life-saving commodities for women and children*. Arlington, USA: Management Sciences for Health.

Giedion, U, Alfonso, EA & Diaz, Y. 2013. *The impact of universal of universal coverage schemes in the developing world: A review of the existing evidence*. Washington DC, World Bank. Universal Health Coverage Studies Series (UNICO), No. 25.

Gingerich, TR & Cohen, MJ. 2015. *Turning the humanitarian system on its head: Saving lives and livelihoods by strengthening local capacity and shifting leadership to local actors*. Oxford: Oxfam International, UK.

Githinji, S, Oyando, R, Malinga, J, Ejersa, W, Soti, D, Rono, J, Snow, RW, Buff, AM & Noor, AM. 2017. Completeness of malaria indicator data reporting via the district health information software 2 in Kenya, 2011-2015. *Malaria Journal*, 16(344):1-11.

Gonzalez, G. 2016. Thinking ahead: Displacement, transition, solutions. *Forced Migration Review*, (52):26-28. Available from: www.fmreview.org/solutions. Accessed 16 January 2019.

Government of Ethiopia. 2017. *Roadmap for the implementation of the Federal Democratic of Ethiopia Government Pledges and the practical application of the CRRF in Ethiopia*. Addis Ababa.

Government of Kenya Ministry of Health. 2014. *Service availability and readiness assessment mapping (SARAM)*. Nairobi, Kenya.

Government of Sierra Leone's Ministry of Health and Sanitation (GoSLMoHS). 2012. *Service Availability and Readiness Assessment: 2011 Report*. Freetown: Ministry of Health and Sanitation.

Greer, L, Wismar, M & Figueras, J. (eds). 2016. *European observatory on health systems and policies. Strengthening health system governance: Better policies, stronger performance*. Copenhagen: WHO.

Guraro, MB. 2016. Hitting two birds with one stone? Role of humanitarian responses in peace-building processes. *Horn of Africa Bulletin*, 28(2):20-25.

Gwaikolo, W, Kohrt, B & Cooper, J. 2017. Health system preparedness for integration of mental health services in rural Liberia. *BioMed Central Health Services Research*, 17(508):1-10.

Hafne, T & Shiffman, J. 2013. The emergence of global health attention to health systems strengthening. *Health Policy and Planning*, 28:41-50.

Haider, A & Islam, MR. 2018. Service availability and readiness assessment of maternal and child health services using the WHO tool in Kapasia and Sreepur Upazila of Gazipur District in Bangladesh. *Journal of Public Health and Epidemiology*, 10(2):34-42.

Halcomb, E & Hickam, L. 2015. Mixed methods research. *Nursing Standards: Promoting Excellence in Nursing Care*, 29(32):1-17.

Holloway, I. 2005. *Qualitative research in health care*. Berkshire, UK: Open University.

House of Commons Health Committee. 2011. *Public health: Twelfth report of session 2010-2012*. Vol. II. London, UK.

Hunter, P. 2016. The refugee crisis challenges national health care system: Countries accepting large number of refugees are struggling to meet their needs which range from infectious diseases to chronic diseases to mental illnesses. *Science and Society*, 4(17):492-495.

ICF **see** International Classification of Functioning, Disability and Health.

IDMC & NRC **see** Internal Displacement Monitoring Centre and Norwegian Refugee Council.

IOM **see** Institute of Medicine.

IPCC **see** Intergovernmental Panel on Climatic Change.

Imenda, S. 2014. Is there a conceptual difference between theoretical and conceptual frameworks? *Journal of Social Sciences*, 38(2):185-195.

Institute of Medicine. 2012a. *Crisis Standards of Care: A systems framework for catastrophic Disaster Response*. Washington, DC: The National Academies Press.

Institute of Medicine. 2012b. *For the public's health: Investing in a Healthier future*. Washington, DC: The National Academies Press.

Inter-Agency Standing Committee (IASC). 2015. *IASC Reference Module for the implementation of the humanitarian programme cycle. Version 2*. UNOCHA.

Intergovernmental Panel on Climatic Change. 2012. *Managing the risks of extreme events and Disasters to advance climate change adaptation. A special report of working group I and II of the Intergovernmental Panel on Climatic Change*, [CB Field, V Barros,

TF Stocker, D Qin, DJ Dokken, KL Ebi, MD Mastrandrea, KJ Mach, G-K Plattner, SK Allen, M Tignor, and PM Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA.

Internal Displacement Monitoring Centre and Norwegian Refugee Council. 2017a. *Global Report on Internal Displacement (GRID) 2017*. Geneva, Switzerland.

Internal Displacement Monitoring Centre and Norwegian Refugee Council. 2017b. *Africa report on Internal Displacement*. Geneva, Switzerland.

International Classification of Functioning, Disability and Health. 2013. *Trends in demographic and reproductive health indicators in Ethiopia*. Calverton, Maryland, USA.

Islam, MR, Macer, D & Laskar, SP. 2016. A study on services availability and readiness assessment of non-communicable diseases using the WHO tool for Gazipur district in Bangladesh. *Bangladesh Journal of Bioethics*, 7(2):1-13.

Italian Development Cooperation. 2016. *Italian contribution to the health sector development programme in Ethiopia*. Addis Ababa, Ethiopia.

Jabareen, Y. 2009. Building a conceptual framework: Philosophy, definitions, and procedure. *International Journal of Qualitative Methods*, 8(4):49-62.

Jarris, P & Sellers, K. 2013. Strategies for public health in a transforming health system. *Journal Public Health Management Practice*, 19(1):93-96.

Jarvis, T. 2017. *Defining public health systems: A critical interpretive synthesis of how public health systems defined and classified*. Master Thesis, McMaster University, Ontario, Canada.

Jones, M, Haeghebaert, S, Merlin, B, Antona, D, Simon, N, Elmouden, M, Battist, F, Jaseens, M, Wyndels, K & Chaud, P. 2016. Measles outbreak in a refugee settlement in Calais, France. *Euro Surveil*, 21(11):1-3.

Kallio, H, Pietilä, A, Johnson, M & Kangasniemi, M. 2016. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 00(0):1-12. [Doi:10.1111/jan.13031](https://doi.org/10.1111/jan.13031).

Kamadjeu, R, Mulugeta, A, Gupta, D, Hirsi, A, Belayne, A, Clark-Hattingh, M, Adams, C, Abed, P, Kyeyune, B, Ahmed, T, Salih, M, Biauou, C & Toure, B. 2015. Immunizing nomadic children and live-stock- experience in North East Zone of Somalia. *Human Vaccine & Immunotherapeutics*, 11(11):2637-2639.

Kebede, A, Hassen, K & Teklehaymanot, AN. 2016. Factors associated with institutional delivery service utilization in Ethiopia. *International Journal of Women's Health*, 8(1):463-475.

Khan, Y, Ósullivan, T, Brown, A, Tracey, S, Gibson, J, Génieux, M, Henry, B & Schwartz, B. 2018. Public health emergency preparedness: A framework to promote resilience. *BioMed Central Public Health*, 18(1344):1-16.

Kiberu, VM, Matovu, JK, Makumbi, F, Kyoziira, C, Mukooyo, E & Wanyenze, RK. 2014. Strengthening district-based health reporting through the district health management information software system: The Uganda experience. *BioMed Central Medical Informatics and Decision Making*, 14(40):1-9.

Kotsiou, O, Kotsios, P, Srivastava, D, Kotsios, V, Gourgoulisanis, K & Exadaktylos, A. 2018. Impact of the refugee crisis on the Greek Healthcare system: A long Road to Ithaca. *International Journal of Environmental Research and Public Health*, 15(1790):1-18.

Kozuki, N, Rashidi, T, Gupta, S, Mtimuni, A, Oseni, I, Rawlins, B, Sethi, R & Kachale, F. 2017. Health facility service availability and readiness for intrapartum and immediate postpartum Care in Malawi: A cross-sectorial survey. *Plos ONE*, 12(3):1-12. Available from: <https://doi.org/10.1371/journal.pone.0172492>. Accessed 10 May 2018.

Kruk, ME, Myers, M, Varpilah, ST & Dahn, BT. 2015. What is a resilient health system? Lessons from Ebola. *Lancet*, 385:1910-1912.

Kumar, A. & Gupta, S. 2012. *Health infrastructure in India: Critical analysis of policy gaps in the Indian health care delivery*. New Delhi, India: Vivekananda International Foundation.

Kumar R. & Boke, A. 2015. Assessment of decentralized local governance performance for service delivery in Ethiopia: The case study of Angacha District. *European Academic Research*, 3(31):3607-3635.

Kutzin, J, Witter, S, Joweet, M & Bayarsaikhan, D. 2017. *Developing a national health financing strategy: A reference guide*. Geneva: WHO.

Kuyinu, Y, Mohammed, A, Adeyeye, O, Odugbenin, B, Goodman, O & Odusanya, O. 2016. Tuberculosis infection control measures in health care facilities offering TB services in Lkeja local government area. Logos, South West, Nigeria. *BioMed Central Infectious Disease*, 16(126):1-7.

Lam, E, Diaz, M, Maina, A & Brennan, M. 2016. Displaced populations due to humanitarian emergencies and its impact on global eradication and elimination of Vaccine-Preventable diseases. *Conflict and Health*, 10(27):1-3. [Doi:10.1186/s13031-016-0094-5](https://doi.org/10.1186/s13031-016-0094-5).

Lam, E, McCarthy, A & Brennan, L. 2015. Vaccine-preventable diseases in humanitarian emergency among refugee and internally displaced population. *Human Vaccines and Immunotherapeutic*, 11(11):2627-2636.

Leinhos, M, Johnson, MW & Qari, SH. 2014. Preparedness and emergency response research centers: Using a public health system approach to improve all hazards preparedness and responses. *Public Health Reports*, 4(129):8-18.

Leppink, J. 2017. Revisiting the quantitative – qualitative – mixed methods labels: Research questions, developments, and the need for replication. *Journal of Taibah University Medical Sciences*, 12(2):97-101.

Levesque, JF, Harris, MF & Russel, G. 2013. Patient-centred access to health care: Conceptualizing access at the interface of Health systems and populations. *International Journal for Equity in Health*, 12(18):1-9.

Lindsay, G. 2013. The benefits of combined (mixed) methods research: The large-scale introduction of parenting programmes. *Social Work and Social Science Review*, 16(1):87-96.

Lomazzi, M. 2016. A global character for public's health – the public health system: roles, functions, competencies and education requirement. *European Journal of Public Health*, 26(2):210-212.

Lomazzi, D, Boris, D & Jenkin, C. 2016. Global public health today: Connecting dots. *Glob Health Action*, 9(28772):1-11.

London School of Hygiene and Tropical Medicine, Harvard School of Public Health and Overseas Development Institute. 2015. *An evidence review of research on health interventions in humanitarian crises*. ODI: UK.

Lorenizini, E. 2017. Mixed method research in health science. *Revista Cuidarte*, 8(2):1553-1556.

Loveday, J, Sachdev, SP, Cherian, MN, Katayama, F, Akhtaruzzaman, AKM, Thomas, J, Huda, N, Faragher, EB & Johnson, WD. 2017. Survey of emergency and essential surgical obstetric and anaesthetic services available in Bangladeshi government health facilities. *World Journal of Surgery*, 41:1743-1751.

Ludwick, T, Turyakira, E, Kyomuhagi, T, Manalili, K, Robinson, S & Brenner, JL. 2018. Supportive supervision and constructive relationships with healthcare workers support CHW performance: Use of a qualitative framework to evaluate CHW programming in Uganda. *BioMed Central Human Resources for Health*, 16(11):1-8.

Maxwell, D, Conostas, M, Frankenberger, T, Klaus, D & Mock, M. 2015. *Qualitative data and subjective indicators for resilience measurement: Resilience measurement technical working group*. Technical series No: 4 Rome: Food Security information Network.

Maxwell, J. 2012. *Qualitative research design: An interactive approach*. 3rd edition. Los Angeles: Sage.

Maxwell, J & Loomis, D. 2003. Mixed methods design: An alternative approach. In *Handbook of mixed methods in social and behavioural research*, edited by Tashakkori, A., and Teddlie, C. Thousand Oaks, CA: Sage.

McEwen, M & Wills, E. 2014. *Theoretical basis for nursing*. 4th edition. Lippincott Williams & Wilkins.

McGoldrick, C. 2015. The state of conflicts today: Can humanitarian action adapt. *International Review of the Red Cross*, 97(900):1179-1208.

MEASURE Evaluation. 2013. *Household survey indicators for malaria control*. Rockville, MD, USA: MEASURE Evaluation.

MEASURE Evaluation. 2014. *Guidance for evaluating the impact of national malaria control programs in highly endemic countries. Mortality Taskforce of roll back malaria's monitoring and evaluation reference group*. Rockville, MD, USA: MEASURE Evaluation.

MEASURE Evaluation. 2015. *Health service integration in senegal: A case study*. Chapel Hill, NC: USA.

MEASURE Evaluation. 2019. *Adolescent friendly health services in public health facilities in Lusaka, Zambia*. Chapel Hill, NC: USA.

Melosini, L, Ventrano, U, Dente, FL, Cristofano, M, Giraldi, M, Gabrielli, L, Novelli, F, Aquilini, F, Rindi, L, Menichetti, F, Freer, G & Paggiaro, PL. 2012. Evaluation of underreporting tuberculosis in Central Italy by means of record linkage. *BioMed Central Public Health*, 12(472):1-6.

Ministry of Health Ethiopia, Partnership for Maternal, New-born and Child Health, Action Health Policy and Systems Research and World Health Organization (MOH, PMNCH, AHPSR & WHO) 2015. *Success factors for women's and children's health: Ethiopia*. Geneva, Switzerland.

Morgan, DL. 2014. *Integrating qualitative and quantitative methods: A pragmatic approach*. Thousand Oaks: Sage.

Mpunga, D, Lumbayi, JP, Dikamba, N, Mwembo, A, Ali Mapantano, M & Wembodinga, G. 2017. Availability and quality of family planning services in Democratic Republic of Congo: High potential for improvement. *Global Health: Sciences and Practice*, 5(2):274-285.

Nagbe, T, Yealue, K, Yeabah, T, Rude, JM, Fallah, D, Skrip, L, Agbo, C, Mouhamoud, N, Okeibunor, JC, Tuopileyi, R, Talisuna, A, Yahaya, AA, Rajatonirina, S, Frimong, JA, Stephen, M, Hamblion, E, Nyenswah, T, Dahn, B, Gasasira, A & Fall, IS. 2019. Integrated disease surveillance and responses implementation in Liberia, Finding from a data quality audit, 2017. *The Pan African Medical Journal*, 32(2):1-6.

National Academies of Sciences, Engineering and Medicine. 2015. *Improving quality of care in low- and middle-income countries: workshop summary*. Washington, DC: The National Academies Press.

National Disaster and Risk Management Commission (NDRC). 2018. *Ethiopia Humanitarian and Disaster Resilience Plan*. Addis Ababa, Ethiopia.

Negussie, A, Kassahun, W, Assegid, S & Hagan, AK. 2016. Factors associated with incomplete childhood immunization in Arbogona district, Southern Ethiopia: A case control study. *BioMed Central Public Health*, 16(27):1-9.

NMOH, NHSSP & ICF **see** Nepal Ministry of Health, Nepal New ERA, Health Sector Support Program and International Classification of Functioning, Disability and Health.

Nepal Ministry of Health, Nepal New ERA, Health Sector Support Program and International Classification of Functioning, Disability and Health. 2016. *Nepal Health facility survey 2015 preliminary report*. Kathmandu. New ERA, Nepal; NHSSP, Nepal; and ICF International.

Neuman, WL. 2014. *Social research methods: Qualitative and quantitative approaches*. 7th edition. Harlow, England: Pearson New International Edition.

New Zealand Blood Service (NZBS). 2016. *A Guide to the clinical use of Blood components, Blood products and Blood transfusion procedures in New Zealand: Transfusion medicine Handbook*. 3rd edition. Auckland: NZBS.

Newton-Levinson, A, Leichter, JS & Chandra-Mouli, V. 2016. Sexually transmitted infection services for adolescents and youth in low- and middle-income countries: Perceived and experienced barriers to accessing care. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 59(1):7-16.

Nickerson, JW, Adams, O, Attaran, A, Hatcher-Roberts, J & Tugwell, P. 2014. Monitoring the ability to deliver care in low- and middle-income countries: A systematic review of health facility assessment tools. *Health Policy and Planning*, 30(5):675-686.

Nickerson, J, Hatcher-Roberts, J, Adams, O, Attaran, A & Tugwell, P. 2015. Assessments of health services availability in humanitarian emergencies: A review of assessments in Haiti and Sudan using health system approach. *Conflict and Health*, 9(20):1-11. Available from: <https://doi.org/10.1186/s13031-0150045-6>. Accessed 15 September 2018.

Nnandi, C, Etsano, A, Uba, B, Ohuabunwo, C, Melton, M, Nganda, G, Esapa, L, Bolu, O, Mahoney, F, Vertefeuille, J, Wiesen, E & Durry, E. 2017. Approaches to vaccination among populations in areas of conflict. *Oxford University Press JID*, 2016(S1):S368-S372.

NSW Ministry of Health (MOH). 2017. *Developing and using program logic: Guide. Evidence and evaluation Guidance series population and public health division*. Centre for Epidemiology and Evidence. Sydney: NSW MOH.

O'Neill, K, Takane, M, Sheffel, A, Abou-Zahr, C & Boerma, T. 2013. Monitoring service delivery for universal health coverage: The services availability and readiness assessment. *Bulletin of the World Health Organization*, 91(12):923-931.

OHA **see** Oregon Health Authority.

Okwaraji, YB, Berhanu, D & Persson, LA. 2017. *Community-based childcare: household and health facility perspectives. Dagu baseline survey, Ethiopia, December 2016 to February 2017*. Addis Ababa, Ethiopia.

Olu, O. 2017. Resilient health system: As conceptual framework for strengthening public health disaster risk management: An African Viewpoint. *Front. Public Health*, 5(263):1-6.

Oregon Health Authority. 2014. *Modernizing Oregon's public health system. House Bill 2013: Task force report. Future of public health services*. Oregon, USA: OHA.

Ovesen, P & Heisselberg, SG. 2016. The humanitarian response to the 2015 Nepal Earthquake. *UN Chronicle*, 1:23-25.

Owuondo, PA, Tenembergen, WM, Adoyo, M & Kiilu, EM. 2015. Prepared of county referral health facilities in implementing adolescent friendly health services: A case study of Mama Lucy Kibaki Hospital. *Global Journal of Health Science*, 7(6):11-23.

Oyekale, AS. 2017. Assessment of primary health care facilities' service readiness in Nigeria. *BioMed Central Health Services Research*, 17(172):1-12. Available from: <https://doi.org/10.1186/s12913-017-21128>. Accessed 12 September 2017.

Palinkas, LA, Horwitz, SM, Green, CA, Wisdom, JP, Duan, N & Hoagwood, K. 2015. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health*, 42:1-20. Author Manuscript, Department of Health and Human Services, USA.

Parmar, P & Greenough, PG. 2017. Optimizing the use of a precious resource: The role of emergency physicians in a humanitarian crisis. *Western Journal of Emerg Medicine*, 18(4):607-615.

Pawson, R, Greenhalgh, T, Harvey, G & Walshe, K. 2004. *Realist synthesis: an introduction*. University of Manchester, UK.

Pearce, E & Lee, B. 2018. From vulnerability to resilience: Improving humanitarian response. *Forced Migration Review*, (57):31-33.

Available from: www.fmreview.org/yria2018. Accessed 10 May 2018.

Phalkey, R, Dash, S, Mukhopadhyay, A, Rung-Ranzinger, S & Marx, M. 2012. Prepared to react? Assessing the functional capacity of the primary health care system in rural Orissa, India to respond to the devastating flood of September 2008. *Global Health Action*, 5(1):1-10. Available from: <https://doi:10.3402/GHA.V5I0.10964>. Accessed 29 December 2018.

Plano-Clark, V, Anderson, N, Wertz, J, Zhou, Y, Schumacher, K & Miaskowski, C. 2014. Conceptualizing Longitudinal Mixed Methods Designs: A methodological Review of Health Science Research. *Educational Psychological Papers and Publications*,160:1-23. [doi.10.1177/1558689814543563](https://doi.org/10.1177/1558689814543563).

Podewils, LJ, Bantunhani, N, Bristow, C, Bronner, LE, Peters, A, Pym, A & Mametia, LD. 2015. Completeness and reliability of the Republic of South Africa National Tuberculosis (TB) surveillance system. *BioMed Central Public Health*, 15(1765):1-11.

Polit, DF & Beck, CT. 2012. *Nursing research: Generating and assessing evidence for nursing practice*. 9th edition. Philadelphia: Lippincott Williams & Wilkins.

Prabhakaran, S, Dutta, A, Saxena, A, Stromberg, K, Clarke, D & Sharma, S. 2017. *Do better laws and regulations promote universal coverage? A review of the evidence October 2017. Marshalling the evidence for health governance*. Washington DC, USA: Thematic Working Group.

Prinja, S, Bahuguna, P, Tripathy, JP & Kumar, R. 2015. Availability of medicines in public sector health facilities of two North Indian States. *BioMed Central Pharmacology and Toxicology*, 16(43):1-11.

Puchner, K, Karamagioli, E, Pikouli, A, Tsiamis, C, Kalogeropoulos, A, Kakalow, E, Pavlidou, E & Pikoulis, E. 2018. Time to rethink refugee and migrant health in Europe: Moving from emergency response to integrated and individualized health care provision for migrants and refugees. *International Journal of Environmental Research and Public Health*, 15(1100):1-6.

Pundhir, RK & Boke, A. 2015. Assessment of decentralized local governance performance for services delivery in Ethiopia: The case study of Angacha District. *European Academic Research*, 3(3):3607-3635.

Pyone, T, Dickinson, F, Kerr, R, Boschi-Pinto, C, Mathai, M & Van den Broek, N. 2015. Data collection tools for maternal and child health in humanitarian emergency: A systematic review. *Bulletin of World Health Organization*, 93:648-658.

Rajan, D, Adam, T, ElHusseiny, D, Porignon, D, Ghaffar, A & Schmetts, G. 2015. *Briefing Note: Policy dialogue: What it is and how it can contribute to evidence-informed decision making*. Geneva, WHO.

Ramiandrison, E, Bazant, E, Dao, B, Andriantsimietry, SH, Favero, R, Gomez, P, Rakotomanga, R, Razakariasy, ME & Rakotovao, JP. 2016. Service availability and readiness assessment of maternal, newborns and child health service at public health facilities in Madagascar. *African Journal of Reproductive Health*, 20(3):149-159.

Rathish, D, Jayathilake, T, Premarathna, I, Kandegedara, C, Anamda, L, Punchihewa, K, Bandara, T, Jayasumana, C & Siribaddanas, S. 2017. Availability of essential medicines in selected public, primary and secondary health care institutions of a rural Sri Lankan district: a spot survey. *BioMed Central Health Services Research*, 17(11):1-9.

Renggli, S, Mayumana, I, Charles, C, Mboya, D, Mshana, C, Glass, TR, Kessy, F, Lengeler, C, Aerts, A, Schulze, A & Pfeiffer, C. 2019. Towards improved health service quality in Tanzania: contribution of a supportive supervision approach to increased quality of primary healthcare. *BioMed Central Health Services Research*, 19(848):1-16.

Republic of Uganda Ministry of Health. 2013. *Service availability and readiness. Summary report: Key findings in figures*. Kampala: Ministry of Health.

Research Council of Norway. 2012. *Mixed methods in educational research: Report from the March Seminar 2012*. Oslo, Norway.

Rowe, F. 2014. What literature review is not: Diversity, boundaries and recommendations. *European Journal of Information Systems*, 23(3):241-255.

Rubin, A & Babbie, ER. 2016. *Research methods for social work*. 9th edition. London: Cengage Learning.

Rull, M, Peyraud, N, Dorion, C, Cigleneki, I, Luquero, F, Masson, S, Uzzeni, F & Ventura, A. 2018. The new WHO decision-making framework on vaccine use in acute humanitarian emergencies: MSF experience in Minkaman, South Sudan. *Conflict and Health*, 12(11):1-9.

Sahar, L, Faler, G, Hristov, E, Hughes, S, Lee, L, Westnedge, C, Erickson, B & Nichols, B. 2015. Development of the Inventory Management and Tracking System (IMATS) to track the availability of Public Health Department: Medical counter measures during public health emergencies. *Online Journal of Public Health Informatics*, 7(2):1-15. Available from: <https://doi.10.5210/ojphi.v7i2.5873>. Accessed 11 March 2018.

Sami, S, Amsalu, R, Kenyi, S, Jackson, D, Meyers, J, Dimiti, A, Mullany, LC, Scutter, E, Tomczyk, B & Kerber, K. 2018. Understanding health systems to improve community and facility level new-born care among displaced populations in South Sudan: A mixed methods case study: *BioMed Central Pregnancy and Childbirth*, 18(325):1-12.

Scheffler, E, Visagie, S & Schneider, M. 2015. The impact of health services variables on health care access in a low resourced urban setting in the Western Cape, South Africa. *African Journal of Primary Health Care and Family Medicine* 7(820):1-11. Available from: <https://dx.doi.org/10.4102/phcfm.v7i1.820>. Accessed 15 April 2018.

Scholz, S, Ngoli, B & Flessa, S. 2015. Rapid assessment of infrastructures of primary health care facilities- a relevant instrument for health care systems management. *BioMed Central Health Service Research*, 15(183):1-10.

Schoonenboom, J & Johnson, R. 2017. How to construct a mixed methods research design. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 69(2):107-131.

Schryen, G, Wagner, G & Berlian, A. 2015. Theory of knowledge for literature reviews: An epistemological model, taxonomy and empirical analysis of information systems (IS) literature, in 36th International Conference on information systems, Fort Worth.

Seaman, P, McNeice, V, Yates, G & McLean, J. 2014. *Resilience for public health supporting transformation in people and communities*. Glasgow: GCPH.

Shosha, GA. 2012. Employment of Collaizzi's strategy in descriptive phenomenology: A reflection of a researcher. *European Scientific Journal*, 8(27):31-43.

Silbermann, M, Daher, M, Kebutu, R, Nimri, O, Al-jadiry, M & Baider, L. 2016. Middle Eastern conflicts: Implications for refugees' health in the European Union and Middle Eastern Host Countries. *Journal of Global Oncology*, 2(6):422-430.

Savoia, E, Lin, L, Bernard, D, Klein, N, James, LP & Guicciardi, S. 2017. Public health system research in public health emergency preparedness in the United State (2009-2015): Actionable knowledge base. *American Journal of Public Health*, 107(2):e1-e6. Available from: <https://doi.org/10.2105/AJPH.2017.304051>. Accessed 19 September 2018.

Sphere Association (SA). 2018. *The Sphere handbook: Humanitarian charter and minimum standards in humanitarian response*. 4th edition. Geneva, Switzerland:SA.

Sphere Project. 2011. *Sphere Handbook-humanitarian charter and minimum standards for disaster response*. Geneva, Switzerland: Sphere Project.

Ssempirra, J, Kasirye, I, Kissa, J, Nambuusi, B, Mukooyo, E, Opigo, J, Makumbi, F, Kasasa, S & Vounatsou, P. 2018. Measuring health facility readiness and its effects on severe malaria outcomes in Uganda. *Scientific Reports*, 8(17928):1-11.

Tanahashi, T. 1978. Health Services coverage and its evaluation. *Bulletin of the World Health Organization*, 56(2):295-303.

Tanzania Ministry of Health and Social Welfare. 2013. *Tanzania service availability and readiness assessment 2012*. Ifakara Health Institute, Dar es Salaam: Tanzania Ministry of Health and Social Welfare.

Tellier, S, Kiaby, A, Nissen, L, Ohlsen, J, Doedens, W, Davies, K, Petersen, D, Christensen, V & Roche, N. 2017. Basic concepts and current challenges of public health in humanitarian action. *International Humanitarian Action*:229-317.

Terwindt, F, Rajan, D & Soucat, A. 2016. *Priority-setting for national health policies, strategies and plans*. Chapter 4, in *Strategizing National Health in the 21st Century: A handbook*, edited by G Schmets, D Rajan & S Kadandale. Geneva, WHO.

Thunhurst, CP. 2013. Public health systems analysis - where the river Kabul meets the River Indus. *Globalization and Health*, 9(39):1-10.

Available from: <https://www.globalizationandhealth.com/content/9/1/39>. Accessed 11 July 2018.

Tittala, P, Tuomisto, K, Puumalainen, T, Lyytikainen, O, Ollgren, J, Snellman, O & Helve, O. 2018. Public Health Responses to large influx of asylum seekers: Implementation and timing of infectious diseases screening. *BioMed Central Public Health*, 18(1189):1-10.

Tripathy, RM. 2014. Public health challenges for universal coverage. *Indian Journal of Public Health*, 58(3):156-160.

Umar, H & Madugu, U. 2015. The imperative of population sampling in social science research. *Global Journal of Political and Science and Administration*, 3(3):49-57.

UN **see** United Nations.

UNAIDS **see** United Nations Programme on HIV/AIDS.

UNHCR **see** United Nations High Commissioner for Refugee.

UNICEF **see** United Nations Children's Fund.

UNOCHA **see** United Nations Office for Coordination of Humanitarian Affairs.

United Nations Children's Fund 2015. *Ethiopia's annual report of 2015*. Addis Ababa, Ethiopia: UNICEF.

United Nations Children's Fund. 2016. *UNICEF Approach to health systems strengthening: A Resources paper for the UNICEF strategy for Health 2016-2030*. New York: UNICEF.

United Nations Children's Fund. 2017a. *Committing to Child Survival: A promise renewed progress report, legacy and lessons*. New York: UNICEF.

United Nations Children's Fund. 2017b. *Ethiopia humanitarian situation report. Situation report number 18, from 6 November to December 5, 2017*. Addis Ababa, Ethiopia: UNICEF. Available from: <https://www.unicef.or/appeal/ethiopia.html>. Accessed 12 December 2017.

United Nations Children's Fund. 2017c. *United Nations Inter-Agency Group for Child Mortality Estimation (UN IGME), Levels and trends in child mortality: Report 2017, Estimates Developed by the UN Inter-Agency Group for child mortality estimation*. New York: UNICEF.

United Nations Development Programme (UNDP). 2015. *Resilience building in response to the Syria crisis*. Amman, Jordan: UNDP.

United Nations High Commissioner for Refugee. 2016a. *Global trends forced displacement in 2015*. Geneva, Switzerland: UNHCR.

United Nations High Commissioner for Refugee. 2016b. *Revised South Sudan refugees response plan January-December 2016. July 2016*. Geneva, Switzerland: UNHCR.

United Nations High Commissioner for Refugee. 2017a. *Developing the comprehensive refugee response framework: Special Appeal 2017*. Geneva, Switzerland: UNHCR.

United Nations High Commissioner for Refugee. 2017b. FACT SHEET on refugee's situation Ethiopia. December 2017. Geneva, Switzerland: UNHCR. Available from: www.unhcr.org. Accessed 4 September 2018.

United Nations High Commissioner for Refugee. 2017c. *Working towards inclusion: Refugees within the national systems of Ethiopia*. Geneva, Switzerland: UNHCR.

United Nations High Commissioner for Refugee. 2017d. *South Sudan regional refugee response plan – revised, January-December 2017*. Geneva, Switzerland: UNHCR.

United Nations High Commissioner for Refugee. 2018a. *Global trends: Forced displacement in 2017*. Geneva, Switzerland.

United Nations High Commissioner for Refugee. 2018b. *South Sudan situation update. Refugees population in Gambella Region as of July 31, 2018*. Geneva, Switzerland: UNHCR. Available from: <https://data.unhcr.org/south-sudan-regional.php>. Accessed 13 August 2018.

United Nations High Commissioner for Refugee. 2018c. South Sudan Situation: Refugees population in Gambella Region as of November 2018. Gambella Sub Office. Geneva, Switzerland: UNHCR. Available from: https://dat.unhcr.org/SouthSudan/_regional.php. Accessed 4 March 2019.

United Nations High Commissioner for Refugee. 2018d. South Sudan Situation: Refugees population in Gambella Region as of 11 May 2018. Gambella Sub Office. Geneva, Switzerland: UNHCR. Available from: <http://dat.unhcr.org/SouthSudan/regional.php>. Accessed 15 May 2018.

United Nations Office for Coordination of Humanitarian Affairs. 2016. *Humanitarian Needs Overviews*. Juba, South Sudan: UNOCHA.

United Nations Office for Coordination of Humanitarian Affairs. 2017a. *World Humanitarian Data and Trends 2017*. New York: UNOCHA.

United Nations Office for Coordination of Humanitarian Affairs. 2017b. *Annual Report. Humanitarian Fund*. Addis Ababa, Ethiopia: UNOCHA.

United Nations Office for Coordination of Humanitarian Affairs. 2017c. *Humanitarian Bulletin Ethiopia*. Issue 42/November 27 to December 10, 2017. Addis Ababa, Ethiopia: UNOCHA. Available from: www.humanitarianresponse.info/en/operations/Ethiopiawww.uocha.org/ethiopia. Accessed 4 March 2018.

United Nations Population Fund (UNFPA). 2015. *State of world population 2015 - shelter from the storm: A transformative agenda for women and girls in a crisis-prone world*. New York: UNFPA.

United Nations Programme on HIV/AIDS. 2017. *UNAIDS DATA 2017*. Geneva: UNAIDS.

United Nations. 2015a. *Addis Ababa action agenda of the Third International Conference on financing for development (Addis Ababa, Ethiopia) and endorsed by the general assembly in its resolution 69/313 of 27 July 2015*. New York: UN.

United Nations. 2015b. *Every woman every child: The global strategy for women's, children's and adolescents' health (2016-2030): Survive, thrive and transform*. New York: UN.

United Nations. 2015c. *Transforming our world: The 2030 agenda for sustainable development*. New York: UN.

United Nations. 2016a. *Every woman every child: Indicator and monitoring framework for the global strategy for women's, children's and adolescents' health (2016-2030)*. New York: UN.

United Nations. 2016b. *New York declaration for refugees and migrants, resolution adopted by the UN General assembly on 19 September 2016. A/RES/71/1*. Available from: <https://www.refworld.org/docid/57ceb74a4.html>. Accessed 19 June 2020.

United Nations. 2017. *The sustainable development goals report*. New York, USA: UN.

Van Berlaer, G. 2017. Disaster and humanitarian response: The importance of field medical data registration. Doctoral Thesis, VRIJE University Brussel: VUBPRESS.

Verwimp, P & Maystadt, J. 2015. *Forced displacement and refugees in Sub-Saharan Africa: An economic inquiry. Policy Research Working Paper 7517*, Washington DC: World Bank Group, Africa Region.

Watson, C. 2008. *Impact assessment of humanitarian response: A review of the literature*. Feinstein International Center: Tufts University.

Wenjuan, W, Winner, W, Burget, C & Colston, J. 2014. *Influence of service readiness on use of facility delivery care: A study linking health facility data and population data in Haiti. DHS Working paper No. 114*. Rockville, Maryland, USA: ICF International.

WHCA **see** World Health Communication Associates.

White, F. 2015. Primary health care and public health: Foundations of universal health systems, *Medical Principles and Practice*, 24(2):103-116.

WHO **see** World Health Organization.

WHO & WB **see** World Health Organization and World Bank.

WHO & UNICEF **see** World Health Organization and United Nations Children's Emergency Fund.

WHO, UNICEF, UNFPA, UNDP and World Bank Group. 2014. *Trends in maternal mortality: 1990-2013*. Geneva, Switzerland.

WHO, UNICEF, UNFPA, UNDP and World Bank Group. 2015. *Trends in maternal mortality: 1990 to 2015*. Geneva, Switzerland.

Wild, H, Mendonsa, E, Trautwein, M, Edwards, J, Jowell, A, Kidanu, A, Tschopp, R & Barry, M. 2020. Health Interventions among pastoralists: A systematic review to guide health service design. *Tropical Medicine and International Health*, 2(25):1332-1352.

Winslow, CEA. 1920. The untitled field of public health. *Science*, 51(1306):23-33. Available from: <https://www.jstor.org/stable/a645011>. Accessed 7 November 2018.

Wirtz, V, Horgerzeil, H, Gray, A, Bigdeli, M, De Joncheere, C, Ewen, M, Gyansa-Lutterodt, Jing, S, Luiza, V. 2017. Essential medicines for universal health coverage. *Lancet*, 389(10067):403-476.

Wisdom, J & Creswell, JW. 2013. *Mixed methods: Integrating qualitative and quantitative data collection and analysis while studying patient-centered medical home model*. Rockville, MD: Agency for Health Care Research and Quality AHRQ publication No.13-0028-EF.

Worksowski, KA, Bolan, GA & Centers for Disease Control (CDC) and Prevention. 2015. Sexually transmitted diseases treatment guidelines, 2015. MMWR. Recommendations and reports: Morbidity and mortality weekly report. *Recommendations and Reports*, 64(RR-03):1-137.

World Health Communication Associates. 2017. *The “unofficial” World Health Communication Associates Action Guide to the: WHO - 70TH World Health Assembly in Geneva from May-22-31,2017*. Somerset, United Kingdom.

World Health Organization. 2007. *Every body’s business: Strengthening health systems to improve health outcomes available*. Geneva, Switzerland: WHO.

World Health Organization. 2009. *System thinking for health systems strengthening. Alliance for Health policy and systems research. Don de Savigny and Taghreed Adam (eds)*. Geneva, Switzerland: WHO.

World Health Organization. 2010. *Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies*. Geneva, Switzerland: WHO.

World Health Organization. 2011a. *Health systems strengthening glossary*. Geneva, Switzerland: WHO.

World Health Organization. 2011b. *Strengthening public health capacities and services in Europe: A framework for action*. Regional Office for Europe, Copenhagen, Denmark.

World Health Organization. 2012a. *European action plan for strengthening public health capacities and services*. Regional Office for Europe. Copenhagen, Denmark.

World Health Organization. 2012b. *Strengthening health system emergency preparedness: Toolkit for assessing health-system capacity for crisis management, Part 1. User manual*. Regional Office for Europe. Copenhagen, Denmark.

World Health Organization. 2012c. *World health statistics 2012*. Geneva, Switzerland: WHO.

World Health Organization. 2013a. *Emergency response framework (ERF)*. Geneva, Switzerland: WHO.

World Health Organization. 2013b. *Global polio eradication initiative: Polio eradication and endgame, strategic plan 2013-2018*. Geneva, Switzerland: WHO.

World Health Organization. 2013c. *Health 2020. A European policy framework and strategy for the 21st Century*. Copenhagen, Denmark.

World Health Organization. 2013d. *Service availability and readiness assessment (SARA). An annual monitoring system for services delivery. Reference Manual, Version 2.1*. Geneva, Switzerland: WHO.

World Health Organization. 2013e. *Vaccination in acute humanitarian emergencies: A framework for decision making*. Geneva, Switzerland: WHO.

World Health Organization. 2013f. *WHO Country Ethiopia Cooperation Strategy 2012-2015*. Regional Office for Africa, Brazzaville, Republic of Congo.

World Health Organization. 2014a. *Public health risk assessment and intervention. conflict and humanitarian crisis in South Sudan*. Geneva, Switzerland: WHO.

World Health Organization. 2014b. *South Sudan humanitarian crisis: Health emergency response funding proposal*. Juba, South Sudan: WHO.

World Health Organization. 2015a. *Accelerating progress on HIV, tuberculosis, malaria, hepatitis and neglected tropical diseases: A new agenda for 2016-2030*. Geneva, Switzerland: WHO.

World Health Organization. 2015b. *Consolidated guidelines on HIV testing services, 5Cs: consent, confidentiality, counselling, correct results and connection*. Geneva, Switzerland: WHO.

World Health Organization. 2015c. *Global polio eradication initiative: Polio eradication and endgame, midterm review July 2015*. Geneva, Switzerland: WHO.

World Health Organization. 2015d. *Health in 2015: From MDGs, Millennium development goals to SDGs, sustainable development goals*. Geneva, Switzerland: WHO.

World Health Organization. 2015e. *Humanitarian response: Summary of priorities and WHO projects in interagency strategic response plans for humanitarian assistance to protracted emergencies*. Geneva, Switzerland: WHO.

World Health Organization. 2015f. *Improving health system efficiency. Ethiopia: Human resources for health reforms*, Alebachew, A & Waddington, C (editors). Geneva, Switzerland: WHO.

World Health Organization. 2015g. *Service availability and readiness assessment (SARA). An annual monitoring system for service delivery. Reference manual, version 2.2*. Geneva, Switzerland: WHO.

World Health Organization. 2015h. *Strategies toward ending preventable maternal mortality (EPMM)*. Geneva, Switzerland: WHO.

World Health Organization. 2016a. *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach*. 2nd edition. Geneva, Switzerland: WHO.

World Health Organization. 2016b. *Recovery toolkit. Supporting countries to achieve health service resilience: A library of tools and resources available during the recovery period of a public health emergency*. Geneva, Switzerland: WHO.

World Health Organization. 2016c. Schmets, G, Rajan, D, Kandandale, S. (eds). *Strategizing national health in the 21st century: A handbook*. Geneva, Switzerland: WHO.

World Health Organization. 2016d. *Standards for improving quality of maternal and newborn care in health facilities*. Geneva, Switzerland: WHO.

World Health Organization. 2016e. *The Innov8 approach for reviewing national Health programmes to leave no one behind: Technical handbook: living document*. Geneva, Switzerland: WHO.

World Health Organization. 2016f. *Toolkit for assessing health system capacity to manage large influxes of refugees, asylum-seekers and migrants*. Regional Office for Europe. Copenhagen, Denmark.

World Health Organization. 2017a. *A strategic framework for emergency preparedness*. Geneva, Switzerland: WHO.

World Health Organization. 2017b. *Assessment of essential public health functions in Countries of Eastern Mediterranean Region: Assessment tool*. Regional Office for the Eastern Mediterranean Region. Cairo: WHO.

World Health Organization. 2017c. *Data quality review: A toolkit for facility data quality assessment. Module 1. Framework and metrics*. Geneva, Switzerland: WHO.

World Health Organization. 2017d. *Ethics guidance for implementation of the end TB strategy*. Geneva, Switzerland: WHO.

World Health Organization. 2017e. Shanghai declaration on promoting health in the 2030 agenda for sustainable development. *Health Promotion International*, 32(1):7-8.

World Health Organization. 2017f. *Global tuberculosis report 2017*. Geneva, Switzerland: WHO.

World Health Organization. 2017g. *Health diplomacy: European perspectives*. Regional Office for Europe. Copenhagen, Denmark.

World Health Organization. 2017h. *Primary health care systems (PRIMASYS): Case study from Ethiopia, Abridge version*. Geneva, Switzerland: WHO.

World Health Organization. 2017i. *Promoting health in the SDGs. Report on the 9th global conference for health promotion, Shanghai, China.21-24 November 2016: all for health. Health for all*. Geneva, Switzerland: WHO.

World Health Organization. 2017j. *Recommendations on maternal health: guidelines approved by the WHO guidelines review committee*. Geneva, Switzerland: WHO.

World Health Organization. 2017k. *Towards access 2030: who essential medicines and health products strategic framework 2016-2030*. Geneva, Switzerland: WHO.

World Health Organization. 2017l. *World health statistics 2017: Monitoring health for SDGs, sustainable development goals*. Geneva, Switzerland: WHO.

World Health Organization. 2017m. *World malaria report 2017*. Geneva, Switzerland: WHO.

World Health Organization. 2018a. *Essential public Health functions, health systems and health security: Developing conceptual clarity and a WHO roadmap for action*. Geneva, Switzerland: WHO.

World Health Organization. 2018b. *Latent tuberculosis (TB) infection: Updated and consolidated guidelines for programmatic management*. Geneva, Switzerland: WHO.

World Health Organization. 2018c. *Working together: an integration resource guide for immunization services throughout the life course*. Geneva, Switzerland: WHO.

World Health Organization. 2018d. *Working together: an integration resource guide for immunization services throughout the life course*. Geneva, Switzerland: WHO.

World Health Organization. 2019. *WHO guidelines on tuberculosis infection prevention and control, 2019 update* Geneva, Switzerland: WHO.

World Health Organization and United Nations Children's Emergency Fund. 2014. *Every new-born: an action plan to end preventable deaths*. Geneva, Switzerland: WHO.

World Health Organization and United Nations Children's Emergency Fund. 2015. *Water, sanitation and hygiene in health care facilities: Status in low- and middle-income countries and way forward*. Geneva, Switzerland: WHO.

World Health Organization and United Nations Higher Commissioner for Refugee (WHO & UNHCR). 2015. *mhGAP Humanitarian intervention Guide (mhGAP - HIG): Clinical management of mental, neurological and substance use conditions in humanitarian emergencies*. Geneva, Switzerland: WHO.

World Health Organization and World Bank. 2017. *Health systems for universal health coverage - a joint vision for healthy lives*. Geneva, Switzerland: WHO.

World Health Organization (WHO), Public Health England and the United Nation's (UN's) Office for Disaster Risk Management. 2013. *Emergency risk management for health: Communicable disease*. Available from: <https://www.who.int/hac/techguidance/preparedness/factsheets/en>. Accessed 23 March 2019.

Wright, J & Holtz, J. 2017. *Essential packages of health services in 24 countries: Findings from cross-country analysis*. Bethesda, MD: Health Finance and Governance project, Abt Associates Inc.

Yates, T, Hellen, J, Joseph, M & Lantagne, D. 2017. *Short-term WASH interventions emergency responses in low- and middle-income countries, 3ie Systematic review summary 8*. London: International Initiative for Impact Evaluation.

Yin, RK. 2014. *Case study research: Design and methods*. 5th edition. Thousand Oaks: Sage.

Zurynski, Y. 2014. Writing a systematic literature review: Resources for students and trainees. *Australian Paediatric Surveillance Unit*.p.1-7 June 2014. Available from: <http://www.apsu.org.au/assets/Resources/Writing-a-Systematic-Literature-Review.pdf>. Accessed 17 March 2019.

APPENDICES

APPENDIX A: ETHICAL CLEARANCE CERTIFICATE FROM UNISA



**RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES
REC-012714-039 (NHERC)**

1 November 2017

Dear Deng Chuol Yiech

Decision: Ethics Approval

HS HDC/729/2017

Deng Chuol Yiech

Student: 6193-396-1

Supervisor: Dr R Mmusi Phetoe

Qualification: D Litt et Phil

Joint Supervisor: -

Name: Deng Chuol Yiech

Proposal Assessment of the availability of public health services in Humanitarian responses in Ethiopia

Qualification: DPCHS04

Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted from 1 November 2017 to 1 November 2022.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 2 August 2017.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*



University of South Africa
Pretter Street, Maitlandsk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

4) [Stipulate any reporting requirements if applicable].

Note:

The reference numbers (top middle and right corner of this communiqué) should be clearly indicated on all forms of communication (e.g. Webmail, E-mail messages, letters) with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.

Kind regards,



Prof JE Maritz
CHAIRPERSON
maritje@unisa.ac.za



Prof MM Moleki
ACADEMIC CHAIRPERSON
molekmm@unisa.ac.za



Prof A Phillips
DEAN COLLEGE OF HUMAN SCIENCES

Approval template 2014

University of South Africa
Pretor Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

APPENDIX B: PERMISSION LETTER TO CONDUCT RESEARCH

Date June 4, 2018

PO BOX 013, Gambella, Ethiopia

mobile number: +251 911562348,

email: 61933961@mylife.unisa.ac.za

To: Gambella Peoples' National Regional State Health Bureau (RHB)

Gambella

SUBJECT: REQUEST FOR PERMISSION TO CONDUCT RESEARCH ON ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN ETHIOPIA

My name is Deng Chuol Yiech and I am a PhD student in Health Studies at University of South Africa (UNISA) in Pretoria. I will be conducting a study on ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA

The study will require me to collect data from public health facilities using the designed checklist and questionnaires by using mixed research methods. This project will be conducted under the supervision of **Prof. Rose Mmusi-Phetoe (UNISA, South Africa)**.

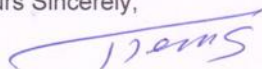
I am hereby seeking a permission from your good office to zonal, districts and Public health facilities (Hospitals and health centres) under this state. I have provided you with a copy of my proposal which includes data collection tool, consent form and confidentiality form. I have also included copy of the approval Ethical clearance certificate which I received from the UNISA Policy on Research Ethics/Scientific Review Committee.

Upon completion of the study, I will acknowledge your contribution for my Doctoral degree in Health studies. Please do not hesitate to contact me for any further information that might not be clear on mobile number: +251 911562348, student number: 61933961

email: 61933961@mylife.unisa.ac.za

Thank you so much for your time and consideration.

Yours Sincerely,



Deng Chuol,

PhD student, Department of Health Studies

APPENDIX C: APPROVAL LETTER TO CONDUCT RESEARCH



G/P/N/R/S/Health Bureau
Gambella

ጋ/ሕ/ብ/ክ/መ/ጤና ቢሮ
ጋምቤላ

Date 18/06/2018
ቀን
Ref. No Com-RHB/102/530/18
ቁጥር

- Abobo Woreda Health Office
 - All 28 functional health centres in Gambella Regional State
 - All 4 functional hospitals in Gambella Regional State
 - Anywaa Zonal Health Department
 - Dimma Woreda Health Office
 - Gambella City Administration Health Office
 - Gambella Woreda Health Office
 - Godere Woreda Health Office
 - Gog Woreda Health Office
 - Itang special Woreda Health Office
 - Jikow Woreda Health Office
 - Jor Woreda Health Office
 - Lare Woreda Health Office
 - Majang Zonal Health Department
 - Makuey Woreda Health Office
 - Mengeshi Woreda Health Office
 - Nuer Zonal Health Department
 - Wanthoa Woreda Health Office
- Gambella

Subject: Approval letter to conduct study in Gambella, Ethiopia

As enclosed above, on 4th of June 2018, **Mr. Deng Chuol Yiech** a **UNISA's PhD student** have requested Gambella Regional Health Bureau (RHB) to write an approval letter to Zonal Health Departments, Woreda health offices and health facilities under Gambella Regional State to conduct his study. Along with the submitted application letter of permission, the principal of investigator presented UNISA's ethical clearance certificate, and the approved Doctoral research proposal entitled as **"Assessment of the availability of public health services in humanitarian responses in Ethiopia"**.

The RHB's Research and Ethics Committee having reviewed his proposal hereby permits him to conduct the study among the study participants stated in the protocol. The study is accepted with the understanding that the **UNISA's** approved ethical clearance certificate (HSHDC/729/2017) will be followed. Departure from the stipulated proposal will constitute a breach of this permission.

Therefore, we kindly request the staff members of the above-mentioned public health institutions to assist and cooperate Deng Chuol Yiech to make this study a success.

Thank you in advance for your cooperation,

CC
Deng Chuol Yiech
RHB, Research and Ethical Committee
RHB, Public Health Emergency Management Department
Gambella



(Handwritten signature)
በጋምቤላ ጤና ቢሮ
ዋና ጠቅላይ ገዢ
ቢ.ሮ 546
- Bureau Head

Address - P.O.BOX 109 Fax 07-510141 Tel 07-510536/510138/510215/510142/510214/510538/510137/510569
 Gambella

APPENDIX D: RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM

Research Participant Information Statement

Research Study Title: **ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN ETHIOPIA**

Researcher's Name DENG CHUOL YIECH, 61933961@mylife.unisa.ac.za

Doctoral student of Health studies at University of South Africa (UNISA), College of Human Sciences

You are invited to participate in a study on "ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN ETHIOPIA". I hope learning the availability of public health services will help in developing a protocol for humanitarian health emergency responses in Ethiopia. You were selected as a possible participant in this study because of your technical expertise on public health services in humanitarian responses in this organization.

The research is being conducted by the above-mentioned researcher under the supervision of **Professor Rose Mmusi-Phetoe**. This study is a requirement that I should go through to obtain my Doctoral Degree in Health studies at University of South Africa, College of Human Sciences

As a participant in this study, you will be involved in activities such as, questionnaires, interviews and at the document reviews.

We will spend a time of 30 minutes to finalize our interviews, your participation is a volunteer with no any incentive deserves. I am also assured you that any information that is obtained in connection with this study will remain confidential and will be access to researcher and those involve in this research process.

Participation in this study is voluntary that no compensation would be paid, and there would be no benefits to respondents as an incentive for their participation. You are not under any obligation to consent and you can also withdraw at any stage without affecting your relationship with the University of South Africa (UNISA). You can withdraw your consent by advising the researcher either verbally, via email, or by completing and returning the 'Participant Withdrawal of Consent Form' that is supplied herein.

You may stop the interview at any time if you do not wish to continue.

Feel free to stop me for any clarification in between and I will answer any questions you may have. If you would like to know more at any stage, or for any areas of concerns please feel free to contact either me Deng Chuol through +251 922562348, or my Supervisor **Professor. Rose Mmusi- Phetoe, Senior Lecturer in Health Studies Department, College of Human Science, University of South Africa (UNISA),**

This information sheet is for you to keep.


Omod John Gilo
Executive Officer



Research Participant Consent Form

Research Study Title: ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN ETHIOPIA

Researcher's Name DENG CHUOL YIECH

Doctoral student of Health studies at University of South Africa (UNISA), College of Human Sciences

Participant Consent

I Omod John, agree to participate in this research study. I have read the Research Participant Information Statement and had any question I have about the research answered for me by the researcher.

I understand that:

- I may not directly benefit from taking part in this research.
- I am free to withdraw from the study at any time and am free to decline to answer particular questions.
- While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
- Whether I participate or not, or withdraw after participating, will have no effect on any treatment or service that is being provided to me.
- Whether I participate or not, or withdraw after participating, will have no effect on my work.

Name of Research Participant Omod John

Research Participant Signature [Signature]

Researcher's Signature Deng Chuol

Date

02/07/2018

Date 2/4/2018



Research Participant

Withdrawal of Consent Form

You can withdraw your participation consent by advising the researcher verbally, or returning this completed form to 61933961@mylife.unisa.ac.za

Research Study Title: **ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN ETHIOPIA**

Researcher's Name Deng Chuol Yiech, 61933961@mylife.unisa.ac.za

I hereby wish to WITHDRAW my consent to participate in the research study described above and understand that such withdrawal WILL NOT jeopardize any treatment or my relationship with the University of South Africa

Research Participant Name

Research Participant Signature _____

Date _____

APPENDIX E: DATA COLLECTION TOOLS

1.1. General characteristics

	General characteristics	Responses
	Name of town/city	
	Name of health facility	
	Type of health facility	
	Name of the <i>Woreda/district</i>	
	Date of interview	
	Experience	
	Qualification	

1.2. Availability of public health services and required resources (Quantitative)

1.2.1. Availability of public health services

Availability of family planning services		Yes	No	Remark
		1	2	
	Blood pressure apparatus			
	Combined oestrogen progestin oral contraceptive pills			
	Guidelines on family planning			
	Injectable contraceptives			
	Staff trained			
Availability of antenatal care services		Yes	No	Remark
		1	2	
	Iron-folic acid supplementations			
	Intermittent preventive treatment in pregnancy (IPTp) for malaria			
	Monitoring for hypertensive disorder for pregnancy			
	Tetanus Toxoid vaccination			
Availability of delivery services		Yes	No	Remark
		1	2	
	Antibiotic eye ointment available for new-born babies			
	Assisted vaginal delivery			
	Basic emergency obstetric care			
	Blank partographs			
	Delivery bed available in the facility			
	Delivery pack			
	Emergency transportation available			
	Examination light in the facility			
	Glove available			
	Guidelines available in the facility			
	Injectable antibiotics available in delivery services			
	Intravenous solution with infusion set			
	Manual removal of placenta			
	Manual removal of retained products			

	Manual vacuum extractors			
	Neonatal bag and mask			
	Neonatal resuscitations			
	New-born bag and mask (size 1 & 0% for preterm babies)			
	Oxytocin available in delivery service			
	Parenteral administration of anticonvulsants			
	Parenteral administration of misoprostol for home delivery			
	Parenteral administration of oxytocic drugs			
	Partograph available in the facility			
	Skin disinfectant available			
	Staff trained in the facility			
	Sterile latex available or equivalent			
	Sterilisation equipment			
	Suction apparatus available in the facility or mucus extractor			
	Vacuum aspirator or D and C kit			
Availability of comprehensive obstetric care services		Yes	No	Remark
		1	2	
	Anaesthesia equipment available			
	Blood screened for Syphilis and hepatitis B&C, and HIV			
	Blood transfusion available			
	Caesarean section available			
	Epinephrine (injectable)			
	Halothane (inhalation)			
	Lidocaine 5%			
	Staff trained in BEmONC			
	Staff trained on anaesthesia			
Availability of immunisation services		Yes	No	Remark
		1	2	
	BCG immunisation			
	BCG vaccine available			
	Cold box/ vaccine carrier with ice packs			
	Continuous temp. monitoring device in refrigerator			
	Country adapted guidelines available in facility			
	Energy source and power supply for vaccine refrigerator			
	HF's with at least one staff member trained in immunisation			
	Immunisation cards available			
	Immunisation tally sheet available			
	Measles vaccine available			
	PCV immunisation			
	PCV vaccine available			
	Pentavalent vaccine available			
	Polio vaccine available			
	Refrigerator			
	Rotavirus immunisation			
	Rotavirus vaccine			
	Routine child immunisation services			
	Routine measles vaccination service			

	Routine pentavalent vaccination service			
	Routine polio immunisation			
	Sharps container			
	Single use - standard disposable or auto-disable syringes			
Availability of child health services		Yes	No	Remark
		1	2	
	Amoxicillin (Dispensable tablet 250 or 500 mg syrup/suspension)			
	Child health services			
	Cotrimoxazole syrup/suspension			
	Growth chart			
	Growth monitoring			
	HFs with at least one staff member trained in the last two years			
	HFs with guideline on IMNCI and growth monitoring			
	Infant scale			
	Iron Supplementation			
	Length/height measuring equipment			
	Malaria diagnostic capacity			
	Me/albendazole cap/tab			
	ORS and zinc supplementation			
	ORS packet			
	Paracetamol syrup/suspension			
	Preventive and curative care for children under 5 malnutrition diagnosis and treatment			
	Stethoscope			
	Test parasite in school			
	Thermometer			
	Treatment of malaria in children			
	Treatment of Pneumonia administration of amoxicillin for the treatment of pneumonia in children			
	Vitamin A supplementation			
	Zinc sulphate tablets or syrup			
Availability of adolescent health services		Yes	No	Remark
		1	2	
	Adolescent health services			
	Presence of counselling services and HIV testing for adolescents			
	Provision of condom and one other FP method for adolescents			
	Provision of combinations of oral contraceptive pills (OCP)			
	Provision of male condoms			
	Provision of emergency contraceptives pills			
	Provision of intrauterine contraceptives devices (IUCDs)			
	Provision of ART to adolescent HIV patients			
	Health workers trained and guidelines available for adolescent health services			
	Guidelines on adolescent health services			
	At least one staff providing services for adolescents trained in adolescent health in the last two years			

	At least one staff providing family planning services trained in adolescent sexual and reproductive health in the last two years			
	At least one staff providing HIV testing and counselling services trained in HIV prevention, care and management in the last two years			
	HF with HIV diagnostic capacity			
	Medicine and health commodities for adolescent health services			
	Availability of oxytocin injectable			
	Presence of all forms of azithromycin in the facility			
	Presence of ampicillin injection in the facility			
	Presence of betamethasone or dexamethasone injections			
	Presence of cefixime capsules and tablets in the facility			
	Presence of gentamicin injections in the facility			
	Presence of hydralazine injections in the facility			
	Presence of injectable benzathine benzylpenicillins in the facility			
	Presence of injectable calcium glucose in facility			
	Presence of injectable metronidazole in the facility			
	Presence of injected solutions of sodium chloride			
	Presence of magnesium sulphate in facility			
	Presence of methyldopa tablets			
	Presence of misoprostol capsules and tablets in the facility			
	Presence of nifedipine capsules and tablets in the facility			
Availability of malaria programme		Yes	No	Remark
		1	2	
	Malaria diagnosis and treatment			
	Availability of malaria diagnosis test (microscopy)			
	Availability of anti-malaria drugs (for all adult and paediatric doses)			
	Health facilities have an accredited/certified laboratory technician			
	Capacity to conduct malaria microscopy			
	Capacity to conduct RDTs			
	Stockout of malaria commodities (reagents and drugs)			
Availability of tuberculosis services		Yes	No	Remark
		1	2	
	At least one staff member is a referral person and in charge of TB infection control and has received HIV/AIDS care and support services			
	At least one staff member trained in HIV/TB co-infection in the last two years			
	At least one staff member trained in MDR-TB in the last two years			
	At least one staff member trained in TB diagnosis and treatment in the last two years			
	Management and treatment follow up for TB patients			
	Prescription of drugs to TB patients			
	Present of diagnosis and treatment TB guidelines			
	Present of TB/HIV/AIDS coinfection guideline			

	Provision of drugs to TB patients			
	TB diagnosis available			
	TB diagnosis by chest X-ray			
	TB diagnosis by clinical symptoms			
	TB diagnosis by rapid test (GeneXpert MTB/RIF)			
	TB diagnosis by sputum smear microscopy examination			
	TB diagnostic testing available			
	TB treatment services available			
Availability of HIV/AIDS services		Yes	No	Remark
		1	2	
	HIV/AIDS services available in the facility			
	HIV/AIDS care and support			
	Treatment of opportunistic infections available			
	Provide condoms			
	Family planning counselling			
	Provide/prescribe micronutrient supplementation			
	Primary preventive treatment for opportunistic infections			
	Provide/prescribe preventive treatment for TB			
	Care for paediatric HIV/AIDS patients			
	Prescribe/ provide fortified protein supplementation			
	Nutrition and rehabilitation services			
	Provision of palliative care			
	Intravenous treatment of fungal infection			
	Treatment for Kaposi's sarcoma			
PMTCT services availability		Yes	No	Remark
		1	2	
	PMTCT services available			
	Testing and counselling services to pregnant women			
	Testing and counselling services to babies born to HIV tested positive women			
	ARV prophylaxis to HIV+ pregnant women			
	ARV prophylaxis to infants born to HIV+ women			
	Infant and young child feeding counselling			
	Nutritional counselling for HIV+ women and their infants			
	Family planning counselling to HIV+ women			
	PMTCT guideline available			
	Infant and young child feeding guideline available			
	At least one staff trained in some aspect of PMTCT in the last two years			
	At least one staff trained in some aspect of infant and young child feeding for HIV+ mothers in the last two years			
Availability of STI services		Yes	No	Remark
		1	2	
	STI diagnosis service available			
	STI treatment service available			
	Staff trained on STI			
	Guideline on STI management			
	Drugs for STI management			

Stockout report		Yes	No	Remark
		1	2	
	HF report stockout of medicine over the last three months			
	HF report stockout of FP medicine and commodities over the last three months			
	HF report stockout of new-born and child health medicine and commodities over the last three months			
	HF report stockout of maternal medicine and commodities over the last three months			
	HF report stockout of malaria medicine and commodities over the last three months			
Availability of basic surgical services		Yes	No	Remark
		1	2	
	Availability of surgical equipment and medication for procedures			
	Incision and drainage of abscesses available			
	Acute burn management available			
	Wound debridement available			
	Suturing available			
	HF provide closed treatment of fracture			
	HF with cricothyroidotomy service available			
	HF offer male circumcision			
	Hydrocele reduction available			
	HF offer chest tube insertion			
Availability of blood transfusion services		Yes	No	Remark
		1	2	
	Blood transfusion			
	Blood obtained only from Regional blood bank, but screened for syphilis, Hepatitis B and C, and HIV			
	HF with no interruption of blood availability in the last three months			
	Staff trained in the appropriate use of blood and safe blood transfusion			
	Guidelines on appropriate use of blood and safe transfusion			

1.2.2. Availability of the required resources in the facilities observation checklist

	Check the following essential medicines if each available medicine is observed valid including verification in facility store	Observed		Not observed in the facility		
		Observed at least one valid	Observed but not valid	Not seen, but reported available	Not available today	Never available
		1	2	3	4	5
	Amitriptyline tablet					
	Amlodipine tablet					
	Amoxicillin syrup/suspension					
	Amoxicillin tablet					
	Ampicillin tablet					
	Ampicillin powder for injection					
	Beclomethasone inhaler					
	Ceftriaxone injection					
	Enalapril tablet or alternative ACE inhibitor					
	Fluoxetine tablet					
	Gentamicin injection					
	Glibenclamide tablet					
	Ibuprofen tablet					
	Insulin injection					
	Metformin tablet					
	Omeprazole tablet					
	Oral rehydration solution					
	Paracetamol tablet					
	Salbutamol inhaler					
	Simvastatin tablet or another statin					
	Zinc sulphate syrup or tablet					

Facility receive the supervision from next level		Yes	No	Remark
		1	2	
	HF received the supervision this month			
	HF received the supervision in the last month			
	HF received the supervision in the last three months			
	Supervisor assess the stockout and expiry drugs			
	Supervisor assess the availability of the trained staff members			
	Supervisor assess the availability of the data management quality			
Infrastructure		Yes	No	Remark
		1	2	
	HFs with functioning landline telephone that is always available to call outside when client services are offered			
	HFs with functioning cellular telephone or a private cellular phone that is supported by the facility			
	HFs with a functioning computer			
	HFs with access to email or internet within the facility today			
	HFs with access to an ambulance or other vehicle for emergency transportation of clients that is stationed at another facility or that operates from another facility nearby			
	HFs with functional ambulance or other vehicle for emergency transportation of clients that is stationed at this facility or operates from this facility			
	HFs with a fuel for the ambulance or other emergency vehicle available today			
	HFs that have electricity from any source (e.g. electricity grid, generator, solar, or other), including for stand-alone devices for EPI cold chain			
Availability of basic amenities		Yes	No	Remark
		1	2	
	Power (electricity for lights and communication from any power source with outage of less than two hours per day)			
	Improved water source within 500m of facility			
	Room with auditory and visual privacy for patient consultations			
	Access to adequate sanitation facilities for clients			
	Communication equipment (phone or short-wave radio)			
	Access to computer with e-mail and internet			
	Emergency transportation			
Availability of basic equipment		Yes	No	Remark
		1	2	
	Adult scale			
	Child scale			
	Thermometer			
	Stethoscope			
	Blood pressure apparatus			
	Light source			

Availability of standard precautions for infection prevention		Yes	No	Remark
		1	2	
	Safe final disposal of sharps			
	Safe final disposal of infectious wastes			
	Appropriate storage of sharps waste (sharps box/container)			
	Appropriate storage of infectious waste			
	Disinfectant			
	Single-use, standard disposable or auto-disable syringes			
	Health facilities with running water available and soap or hand rub of alcohol-based presence			
	Latex gloves			
	Guidelines for standard precautions			
Availability of diagnosis capacity in HF		Yes	No	Remark
		1	2	
	Haemoglobin			
	Blood glucose			
	Malaria diagnostic capacity			
	Urine dipstick – protein			
	Urine dipstick – glucose			
	HIV diagnostic capacity			
	Syphilis RDT			
	Urine pregnancy test			

1.2.3. Document reviews

ANC document reviews

Presence of the main source of document used for the compilation of ANC services report for month 1 to 3. If presence, recount the number of ANC visits as recorded in the main ANC document for month 1 to Month 3.				
	A) Main source of document			B) If yes, re-count in number from the main source of document
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/or monthly report not available--5		
		Other (specified)-----		

Institutional delivery document reviews

Presence of the main source of document used to compile the number of institution deliveries recorded for month 1 to 3. If presence, recount the number of institutional deliveries as recorded in the main data sources for month 1 to Month 3.				
	A) Main source of document			B) If yes, re-count in number from the main source of document
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month 1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/ or monthly report not available--5		
		Other (specified)-----		

HIV/AIDS document reviews

Presence of the main source of document used to compile the number of pregnancy mothers received HCT, Prophylaxis, ART coverage and number of ART patients recorded for month 1 to 3. If presence, recount the number in the main data source for month 1 to Month 3.				
	C) Main source of document			D) If yes, re-count in number from the main source of document
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month 1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/ or monthly report not available--5		
		Other (specified)-----		

Immunisation data reviews

	Presence of the main source of document used to compile the number of children immunised for month 1 to 3. If available, recount the number of children vaccinated as recorded in the main EPI document for month 1 to Month 3.			
	A) Main source of document			B) If yes, re-count in number from the main source of document
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month 1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/ or monthly report not available--5		
		Other (specified)-----		

Availability of Tuberculosis data source

	Presence of the main source of document used to compile the number of Tuberculosis cases for month 1 to 3. If available, recount the number of notified TB cases as recorded in the main TB data source for month 1 to Month 3.			
	A) Main source of document			B) If yes, re-count in number from the main source of document
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month 1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/ or monthly report not available--5		
		Other (specified)-----		

Malaria document reviews

Presence of the main source of document used to compile the number of malaria cases for month 1 to 3. If available, recount the number of malaria cases as recorded in the main data source for month 1 to Month 3.				
A) Main source of document			B) If yes, re-count in number from the main source of document	
	Yes	Yes	If No, next month	
	Completely recorded	Partially recorded		
Month1	1→B	2→B		
Month 2	1→B	2→B		
Month 3	1→B	2→B		
	The reason for the discrepancy observed between the monthly reports and the main source of document	No discrepancy observed-----1		
		Data entry errors-----2		
		Arithmetic errors-----3		
		Information from all source documents not compiled correctly -----4		
		Source of document and/ or monthly report not available--5		
		Other (specified)-----		

1.3. Humanitarian emergency health needs and responses (Qualitative)

As per the consent form you agree, I will be asking you few questions in term of Humanitarian Health Emergency needs and responses in Gambella, Western Ethiopia.

General characteristics	Responses
Name of Town	
Name of health institution	
Name of District or Town	
Date of interview	
Title of participant	
Experience	A) 1-2yrs, B) 3-5 years, C) >5 years
Qualification	1. Diploma, 2. BSC, C. Masters
Name of Interviewer	

1. What are the public health problems in this community?
2. Why do you think are the problem(s), could you elaborate?
3. Which one can you put first in case you are told to list the most public Health problems in your area?
4. Could you tell me the time humanitarian response occurs in this region?
5. How do your organisation know that there is a need for Humanitarian Health Emergency situations?
6. When was the current Humanitarian responses in this region/Zone or district?
7. What are the possible causes of humanitarian emergency in this region?
8. What responses have been done so to provide public health services during the humanitarian health emergency crisis?
9. Why do you think is important to provide public health services during the humanitarian crisis?
10. What are the overall challenges?
11. What are the lessons learned?
12. What are the actions have you taken to address the gaps?
13. What are the RHB, Woreda and HFs' role during the humanitarian health Emergency?
14. Are there any things more you would like to add?

APPENDIX F: LANGUAGE EDITING CERTIFICATE

Between lines editing

Leatitia Romero
Professional Copy Editor, Translator and Proofreader
(BA HONS)

Cell: 083 236 4536
leatitiaromero@gmail.com
www.betweenlinesediting.co.za

17 December 2020

To whom it may concern:

I hereby confirm that I have edited the thesis entitled: "ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA". Any amendments introduced by the author hereafter are not covered by this confirmation. The author ultimately decided whether to accept or decline any recommendations made by the editor, and it remains the author's responsibility at all times to confirm the accuracy and originality of the completed work.



Leatitia Romero

Affiliations

PEG: Professional Editors Group (ROM001)
EASA: English Academy of South Africa
SATI: South African Translators' Institute (1003002)
SEEP: Society for Editors and Proofreaders (15687)
REASA: Research Ethics Committee Association of Southern Africa (104)

APPENDIX G: ORIGINALITY TURNITIN REPORT

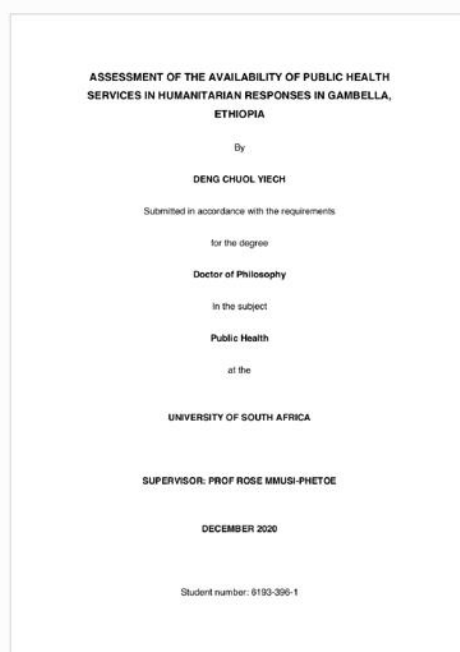


Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Deng Chuol YIECH
Assignment title: Complete dissertation/thesis submis...
Submission title: Thesis Final Deng Chuol, student # ...
File name: THESIS_FINAL,_DENG_CHUOL_S...
File size: 28.88M
Page count: 318
Word count: 79,415
Character count: 473,371
Submission date: 28-Dec-2020 01:32PM (UTC+0200)
Submission ID: 1481659882



preferences



Processed on: 28-Dec-2020 14:04 SAST
ID: 1481659882
Word Count: 79415
Submitted: 1

Thesis Final Deng
Chuol, student #
61933961
By Deng Chuol YIECH

Similarity by Source	
Similarity Index	1%
Internet Sources:	1%
Publications:	0%
Student Papers:	0%

Document Viewer

exclude quoted include bibliography excluding matches < 1%

mode: show highest matches together

Change mode

ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA By DENG CHUOL YIECH Submitted in accordance with the requirements for the degree Doctor of Philosophy In the subject Public Health at the UNIVERSITY OF SOUTH AFRICA SUPERVISOR: PROF ROSE MMUSI-PHETOE DECEMBER 2020 Student number: 6193-396-1 DECLARATION I, Deng Chuol Yiech, declare that "Assessment of the availability of public health services in humanitarian responses in Gambella, Ethiopia", is my own work and that all the sources that I have been used or quoted have been indicated and acknowledged by means of complete references. I further declare that I submitted the thesis to originality checking software and that it falls within accepted requirements for the originality. I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution. ----- SIGNATURE DENG CHUOL YIECH ----- DATE i DEDICATION The thesis is dedicated to frontline health workers who save and sustain the lives of humanitarian-affected people during emergencies, with very limited resources for service provision. The thesis is further dedicated to my wife and children for their love, and for standing firm with me during the writing of this study. ii ACKNOWLEDGEMENTS Always and now, I would like to thank GOD, the Father of all the earth and heaven, for caring and leading me during the study. I would like to acknowledge the following people; without their support, this thesis would not have been possible: ? Prof Rose Mmusi-Phetoe, my supervisor, for her courteous coaching, close mentoring and follow-ups, her patience and consistent encouragement. Her constant motivation, timely response to my work with solid feedback and direction from beginning to end motivated me to complete this thesis. It is with great honour and privilege that I recognise her wisdom and am very grateful to her. ? My relatives, friends, and colleagues for their support and encouragement during the difficult days when the PhD journey became difficult. I thank them for being there during those unforgettable days, where I felt like walking alone in the bush. ? The University of South Africa (UNISA) and Gambella Regional Health Bureau for allowing me to conduct the study. I am honoured to have been part of these institutions. ? The study participants, for their willingness to provide information and contribute to the study in different ways. ? My wife, Mrs. Nivedah Thi Devi, for her unwavering support and understanding, and for taking care of

1 1% match (Internet from 17-Sep-2015)
<http://www.who.int>

- Processed on 28-Dec-2020 14:04 SAST
- ID: 1481659882
- Word Count: 79415

Similarity Index

1%

Similarity by Source

Internet Sources:

1%

Publications:

0%

Student Papers:

0%

sources:

1

1% match (Internet from 17-Sep-2015)

http://www.who.int/healthinfo/systems/SARA_Reference_Manual_Full.pdf

paper text:

ASSESSMENT OF THE AVAILABILITY OF PUBLIC HEALTH SERVICES IN HUMANITARIAN RESPONSES IN GAMBELLA, ETHIOPIA By DENG CHUOL YIECH Submitted in accordance with the requirements for the degree Doctor of Philosophy In the subject Public Health at the UNIVERSITY OF SOUTH AFRICA SUPERVISOR: PROF ROSE MMUSI-PHETOE DECEMBER 2020 Student number: 6193-396-1

DECLARATION I, Deng Chuol Yiech, declare that "Assessment of the availability of public health services in humanitarian responses in Gambella, Ethiopia", is my own work and that all the sources that I have been used or quoted have been indicated and acknowledged by means of complete references. I further declare that I submitted the thesis to originality checking software and that it falls within accepted requirements for the originality. I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher education institution. -----

SIGNATURE DENG CHUOL YIECH ----- DATE i DEDICATION The thesis is dedicated to frontline health workers who save and sustain the lives of humanitarian-affected people during emergencies, with very limited resources for service provision. The thesis is further dedicated to my wife and children for their love, and for standing firm with me during the writing of this study. ii

ACKNOWLEDGEMENTS Always and now, I would like to thank GOD, the Father of all the earth and heaven, for caring and leading me during the study. I would like to acknowledge the following people;

Thesis Final Deng Chuol, student # 61933961

ORIGINALITY REPORT

1 %	1 %	0 %	0 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.who.int Internet Source	1 %
----------	---------------------------------------	------------

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	On		