ETHIOPIA
Services Availability and Readiness Assessment 2016

Summary Report

Ministry of Health

Ethiopian Public Health Institute

World Health Organization

Ethiopia
Service Availability and Readiness Assessment
2016 Summary Report

Ethiopian Public Health Institute
Addis Ababa, Ethiopia

Federal Ministry of Health
Addis Ababa, Ethiopia

World Health Organization (WHO)
Addis Ababa, Ethiopia

January, 2017

This report presents findings of the 2016 Ethiopia Service Availability and Readiness Assessment (SARA), which was implemented by the Ethiopian Public Health Institute. World Health Organization (WHO) provided technical assistance.

Additional information about the 2016 SARA may be obtained from the Ethiopian Public Health Institute (EPHI), Gulelle Arbegnoch Street, Gulelle Sub City, Addis Ababa, Ethiopia. Telephone: +251.11.275.4647; Fax: +251.11.275.4744; website: http://www.ephi.gov.et.

Table of Contents

List of Tables and Figures

FORWARD

The Ethiopia Service Availability Readiness Assessment (SARA) report provides information on a set of tracer indicators of service availability and readiness. It provides reliable information on service delivery (such as the availability of key human and infrastructural resources), on the availability of basic equipment, basic amenities, essential medicines and diagnostic capacities, and on the readiness of health facilities to provide basic health-care interventions relating to family planning, child health services, basic and comprehensive emergency obstetric care, HIV, TB, malaria, and non-communicable diseases.

This and subsequent reports will contribute favourably to monitoring service availability and readiness of the health sector and to generating evidence to support planning in the health system of the country.

It is my hope that the conclusions of the assessment will encourage our stakeholders and partners to continue with their support as we also improve on our contributions to come up with better interventions on how best to deliver health services.

We therefore implore all to use the information in this document for planning, monitoring and evaluation of our health programmes. Since no situation is static, the figures shown here are expected to change with time. Therefore, we intend to conduct similar surveys on an annual basis to determine the level of progress in these indicators.

Dr. Amha Kebede

Director General (EPHI)

ACKNOWLEDGEMENTS

The Service Availability and Readiness Assessment Report has been developed through a participative process involving considerable contributions and support from various individuals and institutions. EPHI therefore wish to extend sincere gratitude to all those who contributed to the process of writing this report.

The following persons contributed to the preparation of this report:

Mr. Theodros Getachew, Ethiopian Public Health Institute
Mr. Atkure Defar, Ethiopian Public Health Institute
Mr. Kassahun Amenu, Ethiopian Public Health Institute
Mr. Terefe Gelibo, Ethiopian Public Health Institute
Mr. Girum Taye, Ethiopian Public Health Institute
Mrs. Misrak Getnet, Ethiopian Public Health Institute
Ms. Abebech Asmamaw, Ethiopian Public Health Institute
Mr. Tefera Tadele, Ethiopian Public Health Institute
Mr. Habtamu Teklie, Ethiopian Public Health Institute
Mr. Geremew Gonfa, Ethiopian Public Health Institute
Mr. Asfaw Kelbessa, Federal Ministry of Health
Mr. Anteneh Tsige, Federal Ministry of Health
Mr. Berihu Sbagadis, Federal Ministry of Health
Mr. Dagnew Hagezom, Federal Ministry of Health
Ms. Eden Kassa, Federal Ministry of Health
Mrs. Tsega Hailu, Federal Ministry of Health
Mr. Getu Beyene, Health Insurance Agency
Mr. Obsa Mulatu, Health Insurance Agency
Dr. Sofonias Getachew, World Health Organization
Dr. Azmach Hadush, World Health Organization
Mr. Fetalew Dagnaw, World Health Organization
Mr. Abebe Bekele, Ethiopian Public Health institute

EXECUTIVE SUMMARY

Introduction: With the increased demand for accountability and the need to demonstrate results at country levels, information is needed to track how health systems respond to increased inputs and improved processes over time, and the impact such inputs and processes have on improved health outcomes and better health status. Despite heightened investments in health systems, few countries have up-to-date information on the availability of health systems that covers both the public and private sectors. The 2016 Service Availability and Readiness Assessment (SARA) for Ethiopia was conducted to assist the health sector in assessing and monitoring service readiness and capacity at region and health facility levels on a regular basis. The SARA provides key information on the state of the health system in terms of service availability and readiness of the facilities to provide key information for measuring progress in health system strengthening over time by generating a summary index that represents "readiness to provide key MNCH and other health related services". Following the successful implementation of the 2014 Service Provision Assessment plus (SPA+) survey, a lighter version of the assessment was carried out in 2016 to inform the annual health sector review and planning process; in particular, to fill key data gaps in service delivery and readiness.

Methods: The 2016 Ethiopian Service Availability and Readiness Assessment (ESARA) survey is a facility based cross sectional survey. A nationally representative sample of 705 health facilities was selected for the assessment, with an oversampling of hospitals. In this sampling procedure 16% was government hospital, 13% of private hospital, 23% of health centre, 25% of clinics and 23% of health posts. Therefore; all hospitals (228), 165 HCs, 173 Clinics and 139 Health posts were assessed. WHO SARA standard tool/facility inventory questionnaire was used for data collection. The facility inventory questionnaire collects information on the availability of specific items (including their location and functional status), components of support systems (e.g., logistics, maintenance, and management), and facility infrastructure, including the service delivery environment. The survey also used to obtain information on how the facilities are prepared to provide each of the priority services. The information entered in the PC-tablets by each interviewer was sent regularly to EPHI central server by the team supervisor when data collection was completed in each health facility. These data files were concatenated, reviewed and checked for any errors and inconsistencies. Data cleaning included the checking of range, structure and a selected set of checks for internal consistency. All errors detected during machine

editing were corrected. All data entry and editing programs were written using CSPro software, a statistical software package with built -in data collection functionality that allows for speedy data entry while also providing sufficient checks and data validation to ensure quality data. A descriptive analysis of SARA data was conducted using the standard core indicators (SARA automated tool for results graphs and tables). Where appropriate, methods of analysis, key assumptions or justifications, and key findings have been discussed under each section. In the data analysis, both tracer indicators and composite indicators were generated. Each service has a readiness indicator that consists of a set of domains, and each domain consists of a set of tracer items. All variables created for tracer items have got two possible values: one if the criteria are met and 0 if the criteria are not met which was also done using CSPro software. All results were weighted to take into account the national distribution of facilities. The Ethiopian Public Health Institute, Health System Research Directorate with technical assistance from the World Health Organization, undertook the assessment.

Result

The findings were stratified by facility type, region, managing authority, and urban/rural areas of the facility. Response completeness was higher than anticipated. The report comprises two parts; the first part examines general service readiness and the second part examines specific service availability and readiness.

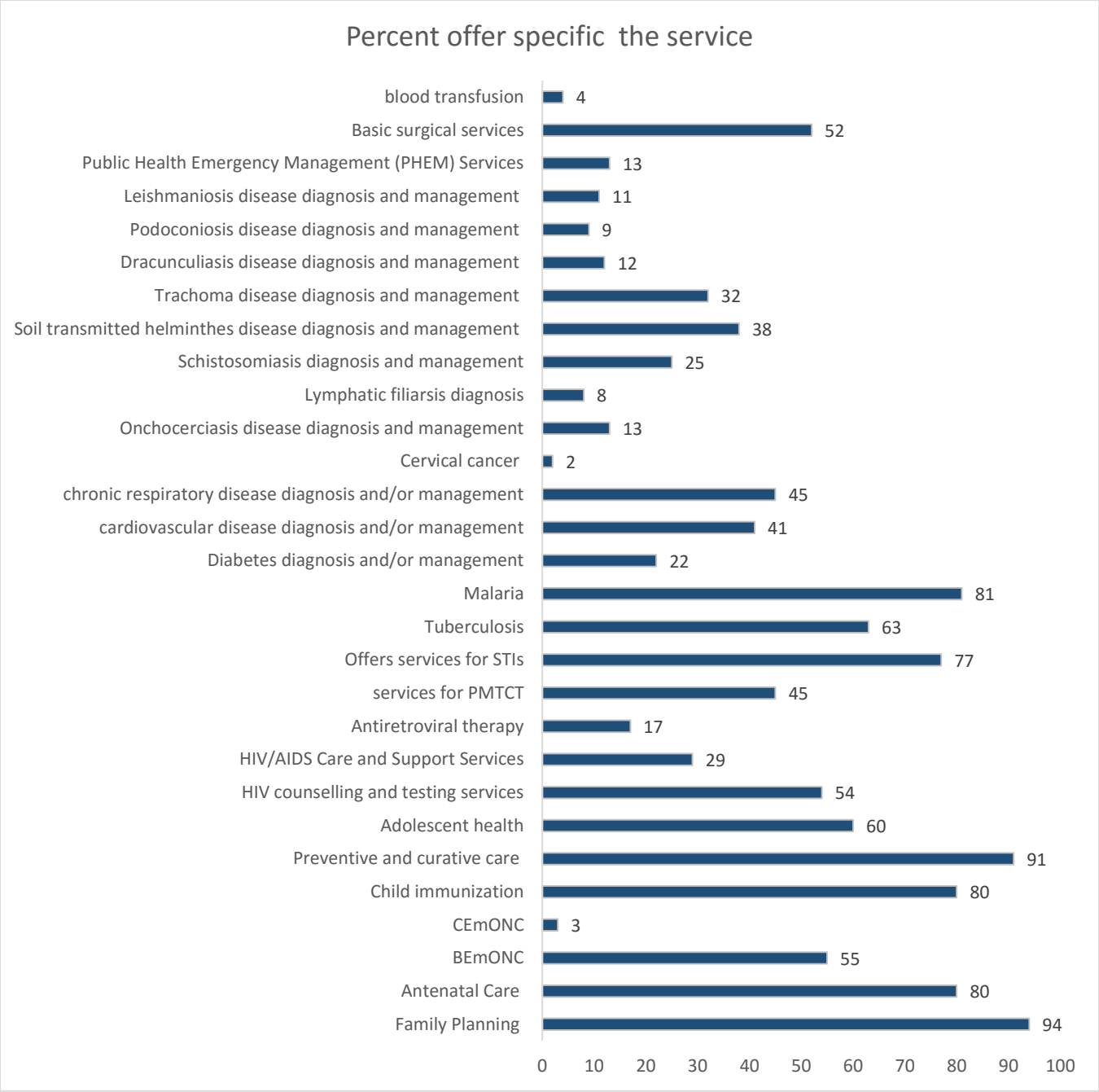
General Service Readiness

The capacity of the health facility to provide general health services showed that the mean availability of tracer item was available in six of ten health facilities. It appeared that there is regional disparity in the mean availability of tracer items with the highest score recorded in Dire Dawa City Administration (82 percent) and the lowest is in Gambela region (49 percent). Stethoscope is the most widely available equipment (98 percent) of all the basic equipment and child weighing scale is the least available (38 Percent) of all the basic equipment. At national level, the mean availability of diagnostic capacity is 39 percent, which varies by facility type; the highest (82 percent) is recorded in referral hospital and the lowest is 3 percent in lower clinic. The availability of most essential drugs was below 50 percent. Oral Rehydration Salt (ORS) is the most available essential medicine with 55 percent availability. The assessment shows that the general service readiness index was 54 percent, implying that 54 percent of all health facilities, excluding health posts are ready to provide the general health services. Of these, 78 percent have the basic amenities

to provide services, 69 percent have standard precautions, 60 percent have the basic equipment required, 39 percent have diagnostic capacity and 26 percent have essential medicines.

Specific Service availability and Readiness

Availability and readiness was assessed for 29 areas of specific service provision. "Availability" signifies the percentage of all facilities in the sample that said that they offered the specific service in question. "Readiness" is a composite measure and was restricted to the sub-set of facilities that offered the service. The component "domains" that make up the readiness score differ from service to service, but generally include: Staff & training; Equipment; Medicines & Supplies, and Diagnostics. A readiness score of 50 signifies that, on average, half of the facilities that offered the service had each of the requisite inputs for delivering that service. "Availability" varies considerably. Some services (such as immunization for children under five) are expected to be provided in almost all health facilities. Other more specialist services would only be expected to be provided by a minority of health facilities. Malaria services, ANC, family planning, child immunization and preventive and curative child health services were available in 80% or more of all facilities (see Figure next page).



The report provides an important insight into service availability and readiness – both for health care in general and for a range of specific services. It is our hope that the information provided may enable stakeholders, planners and managers to identify more clearly the deficits that need to be addressed in order to achieve higher scores in future.

ACRONYMS AND ABBREVIATIONS

ACT	Artemisinin-based combination therapy
ART-LUM)	Artemether-lumefantrine
AIDS	Acquired Immuno Deficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral
CBC	Complete blood count
DBS	Dry Blood Sample
DOTS	Directly Observed Treatment Short course
EDHS	Ethiopia Demographic and Health Survey
ESPA+	Ethiopian Service provision Assessment plus
HCT	HIV Counselling and Testing
HIV	Human Immuno Virus
HIV/AIDS	Human Immuno Virus/ Acquired Immuno Deficiency Syndrome
ITNs	insecticide treated nets
IPT	Intermittent Preventive Therapy
IV	Intravenous therapy
MAC-E	Millennium AIDS Campaign-Ethiopia
MDR-TB	Multiple drug resistant tuberculosis
PMTCT	Prevention of mother to child transmission
RDT	Rapid Diagnostic Test
SARA	Service Availability and Readiness Assessment
SNNP	Region of Southern People Nations and Nationalities
SPM	Strategic Plan Management
TB	Tuberculosis
UNAIDS	United Nations Programme on HIV/AIDS

1. Introduction

1.1 Background

Ethiopia's Growth and Transformation Plan (GTP) 2011-2015 has been designed to maintain the rapid and broad-based economic growth enjoyed by Ethiopia in the recent past and eventually to end poverty (MoFED, 2010). The Health Sector Development Program (HSDP) is a key component of the GTP and its primary objective is to improve the health of the population through the promotion of preventive, curative and rehabilitative health services by improving access to affordable health services and improving the quality of health services.

The current health policy in Ethiopia also takes into account broader issues such as population dynamics, food availability, acceptable living conditions, and other essentials of better health (TGE, 1993). The HSDP prioritizes maternal and newborn care, and child health, and aims to halt and reverse the spread of major communicable diseases such as HIV/AIDS, TB, and malaria (FMoH, 2010). The Health Extension Programme (HEP) serves as the primary vehicle for the prevention, health promotion, behavioural change communication, and basic curative care. The HEP is an innovative health service delivery programme that aims at universal coverage of primary health care. The programme is based on expanding physical health infrastructure and developing Health Extension Workers (HEWs) who provide basic preventive and curative health services in the rural community.

The major health problems of Ethiopia remains largely preventable communicable diseases, reproductive health related problems and nutritional disorders. Despite the major progresses made to improve the health status of the population in the last two decades, Ethiopia's population still face a high rate of morbidity and mortality and the health status remains relatively poor. Figures on vital health indicators from DHS 2011 show a life expectancy of 54 years (53.4 years for male and 55.4 for female), and an IMR of 59/1000; yet maternal mortality rate of 676/100,000 live births showed no improvement over the previous couple of years (CSA, 2011). There are multiple components that will influence these indicators: available infrastructure; staff deployment and presence; and quality of services provided. Although routine reporting will contribute to this understanding, at this stage of the implementation of routine reporting, national surveys are required to further complement the available routine reporting.

The Federal Ministry of Health (FMoH) included monitoring and evaluation as an invaluable component of HSDP IV. It is technically impossible to obtain all health and health related data exclusively through HMIS, conducting regular surveys is crucial to capture selected set of data and triangulate various sources in order to improve the accuracy of health interventions. The state of health in a country can be measured through indicators describing long-term program achievements and effects on the populations. Health Facility Assessments (HFA) or Health Facility Surveys (HFS) provide objective information of the preparedness of health facilities to provide the services required by the population. Thus, selected indicators need to be measured to obtain data on the facilities, supplies, and services for informed decision-making.

Sound information on the supply and quality of health services is necessary for health systems management, monitoring and evaluation. Efforts to achieve the Millennium Development Goals (MDGs) and to scale up interventions for HIV/AIDS, malaria, safe motherhood and child health through global health partnerships, have drawn attention to the need for strong country monitoring of health services, covering the public, private-for-profit and private not-for-profit sectors, and their readiness to deliver key interventions. With the increased demand for accountability and the need to demonstrate results at country and global levels, information is needed to track how health systems respond to increased inputs and improved processes over time, and the impact such inputs and processes have on improved health outcomes and better health status.

However, despite heightened investments in health systems, few countries have up-to-date information on the availability of health systems that covers both the public and private sectors. Fewer still have accurate, up-to-date information required to assess and monitor the "readiness" of health facilities to provide quality services. Ensuring access to quality health services is one of the main functions of a health system. Service access includes different components: availability, which refers to

the physical presence or reach of the facilities; affordability, which refers to the ability of the client to pay for the services; and acceptability, which refers to the sociocultural dimension.

The 2016 Service Availability and Readiness Assessment (SARA) for Ethiopia was conducted to assist the health sector in assessing and monitoring service readiness and capacity at region and health facility levels on a regular basis. The SARA provides key information on the state of the health system in terms of service availability and readiness of the facilities to provide key information for measuring progress in health system strengthening over time by generating a summary index that represents "readiness to provide key MNCH and other health related services".

1.2 Objectives

The objective of the survey is to generate reliable and regular information on service delivery including service availability, such as the availability of diagnostic, essential medicines, and infrastructure resources, and on the readiness of health facilities to provide basic health-care interventions relating to maternal health, child health services, HIV/AIDS, tuberculosis, malaria and noncommunicable diseases.

The survey generates a set of tracer indicators of service availability and readiness that can be used to:

- Detect change and measure progress in health system strengthening over time;
- Plan and monitor the scale-up of interventions;
- Generate the evidence base to feed into country annual health reviews, to better inform the development of annual operational plans and to guide more effective country and partner investments;
- Support national planners in planning and managing health systems.

1.3 Institutional framework

The 2016 Ethiopia SARA was undertaken by the Ethiopian Public Health Institute (EPHI). Technical support for the survey was provided by World Health Organization (WHO). World Bank, Global Fund and World Health Organization provided the financial support. A technical committee was constituted to oversee all policy and technical issues related to the survey. This information will help health programme managers and policy makers to prioritise interventions that will enhance the provision of quality health services.

1.4 Content of the Ethiopian SARA and methods for data collection

1.4.1 Content of SARA

The survey is designed to generate a set of core indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening over time. Tracer indicators aim to provide objective information about whether or not a facility meets the required conditions to support provision of basic or specific services with a consistent level of quality and quantity. Summary or composite indicators, also called indices, can be used to summarize and communicate information about multiple indicators and domains of indicators. Indices can be used for general and service-specific availability and readiness.

1.4.2 Data Collection Instruments

To achieve the objectives of the assessment and to capture information from the different categories, data were collected using a facility inventory questionnaire to obtain information on how the facilities are prepared to provide each of the priority services. The facility inventory questionnaire collects information on the availability of specific items (including their location and functional status), components of support systems (e.g., logistics, maintenance, and management), and facility infrastructure, including the service delivery environment.

1.4.3 Data Collection Approaches

After preparation of definitive questionnaires in English, the questionnaires were translated into Amharigna. English and Amharigna translation of the inventory questionnaire were loaded onto tablet computers, which were used during interviews to ask questions and also record responses (computer assisted personal interviewing–CAPI).

1.4.4 Sample health facility

The sampling method for SARA is a nationally representative sample stratified by health facility type and managing authority (WHO, 2013).

Ethiopia has a skewed health facility distribution at regional level; the sample allocation for the Ethiopian SARA took the skewed health facility distribution of the country into account.

The following formula was used to calculate the sample size:

$$n= [[(z2* p * q) + ME2] / [ME2+ z2* p * q / N]]*d$$

Where

n= the sample to be calculated,

z= the square of the normal deviate at the required confidence level (3.84 is the square of the normal deviate (1.96) needed to provide an estimate at the 95% level of confidence)

p= the proportion of facilities with the attribute of interest (Proportion of facilities with basic amenities were 47%) (Basic Amenities= Mean availability of seven basic amenities items (%): power, improved water source, room with privacy, adequate sanitation facilities, communication equipment, access to computer with Internet, emergency transportation) (WHO, 2013, SPA+ Survey, 2014).

q = 1-p

ME = margin of error (15%)

d = the design effect (we're assuming 1.5) because of regional stratification.

N= Total number of Facilities in each stratum.

Assuming that for each of the services that will be assessed in SARA, mean availability of seven basic amenities items is 46.8%(47%) which was taken from ESPA+, the sample size required to provide a national representation that is within 95% CL and +/- 15% precision, design effect of 1.5 and adding refusals or closed facilities (20% for private clinics and 10% for health posts and health centres) is approximately 689 facilities. Which is within the ranges of WHO recommendation for SARA surveys requiring regional estimates (500 to 800 facilities). In this sampling procedure 16% was government hospital, 13% of private hospital, 23% of health centre, 25% of clinics and 23% of health posts. Therefore; all hospitals (228), 165 HCs, 173 Clinics and 139 Health posts were assessed.

Table 1.4 1 Showing distribution of health facilities by region, Ethiopia SARA 2016

Table 1.4.1 Assessed health facilities by region									Total
	Referral hospital	General hospital	Primary hospital	Health centre	Health post	Higher clinic	Medium clinic	Lower clinic	
Addis Ababa	12	33	0	22	0	7	12	6	92
Afar	1	0	5	16	12	1	10	5	50
Amhara	5	11	11	17	16	1	3	13	77
Benishangul Gumz	0	2	0	14	14	0	3	11	44
Dire Dawa	2	4	1	11	11	3	2	7	41
Gambella	1	0	1	15	14	0	5	9	45
Harrari	1	3	0	8	11	0	10	1	34
Oromiya	7	31	43	17	17	0	1	16	132
S.N.N.P	3	13	11	16	16	1	4	13	77
Somali	0	5	5	16	16	5	11	1	59
Tigray	1	16	0	13	12	5	3	4	54
National	33	118	77	165	139	23	64	86	705

1.4.5 Training and Data Collection

The questionnaires were pretested to detect any possible problems in the flow of the questionnaires, gauge the length of time required for interviews, as well as any problems in the translations. The pretest also helped to detect any problems with the data entry programs. After the pre-test, the questionnaires and computer programmes were finalised for the main data assessment.

Eighty three, mostly health providers (nurses, nurse midwives, and clinicians) were trained in the application of survey instruments and computer programmes. The training included classroom lectures

and discussion, practical demonstrations, mock interviews, role plays, and field practices. The participants were also given daily homework—to conduct mock interviews among themselves using the survey tools.

1.4.6 Data management and analysis

The information entered in the PC-tablets by each interviewer was sent regularly to EPHI central server by the team supervisor, preferably when data collection was completed in a health facility. These data files were concatenated, reviewed and checked for any errors and inconsistencies.

Data cleaning included the checking of range, structure and a selected set of checks for internal consistency. All errors detected during machine editing were corrected. All data entry and editing programs were written using CSPro.

2. General Service Readiness

General Service readiness refers to the capacity of the health facility to provide general health services(WHO, 2013). It measures the availability of equipment and supplies necessary to provide services within the following five domains: basic amenities, basic equipment, standard precautions, diagnostic testing, and essential medicines.

2.1 Basic Amenities

Key Findings
• The most frequently available tracer indicator of basic amenities is emergency transport, which is available in 84 percent of facilities. • The least available tracer indicator of basic amenities is computer with internet, which is found in only 2 percent of facilities. • Of all the facilities only 1 percent had all tracer items • On average, 44 percent of the facilities have basic amenities domain tracer items available.

Basic amenities assessed based on the availability of the following tracer items: power (grid or generator), communication equipment, consultation room, improved water source, adequate sanitation facilities, and computer with internet access, and emergency transportation. Figure 2.1.1 shows the availability of tracer items for basic amenities domain. The findings shows that the most frequently available tracer indicator of basic amenities is emergency transport (i.e., the facility has a functioning ambulance or other vehicle for emergency transport that is stationed at the facility and had fuel available on the day of the survey) , or else the facility have access to an ambulance or other vehicle for emergency transport for clients that is stationed at another facility or that operates from another facility in near proximity, which is available in 84 percent of facilities. The least available tracer indicator of basic amenities is computer with internet, which is found in only 2 percent of facilities. Only 1 percent of facilities had all seven items (Figure 2.1.1).

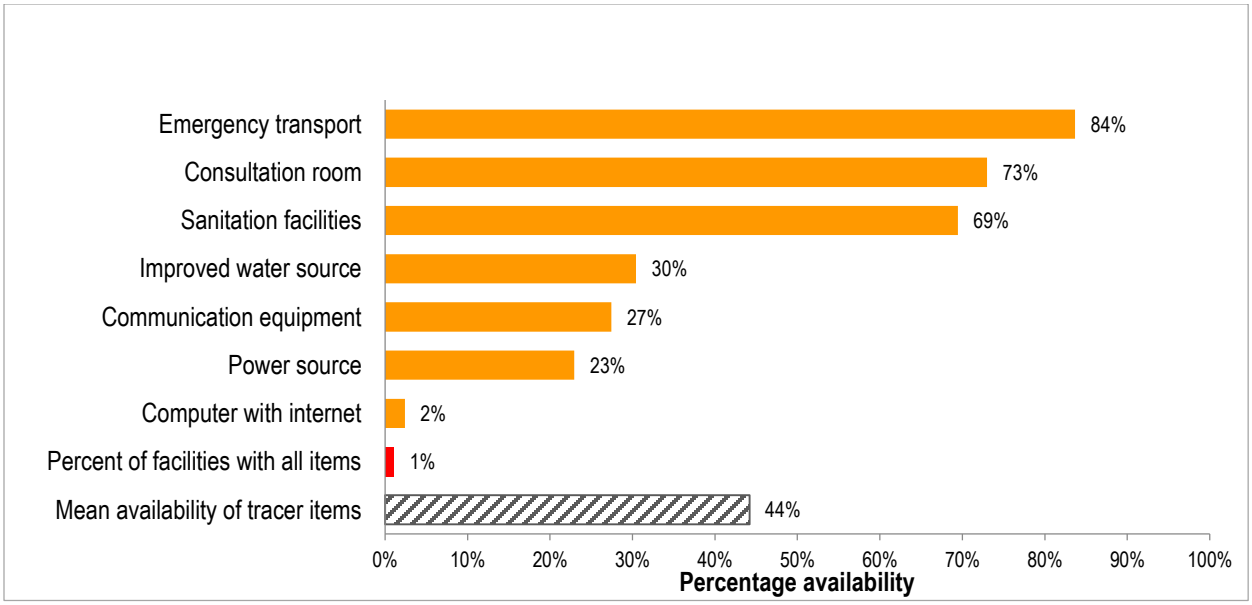


Fig 2.1.1. Percentage of facilities with basic amenities items available, *Ethiopia SARA 2016* (N=698)

Table 2.1.1 shows the availability of tracer items, percentage of facilities with all basic amenities and mean availability of tracer items for basic amenities domain by regions, managing authority, urban and rural area, and facility type. In general, approximately one fourth of the facilities (23 percent) have power source (e.g. electricity grid, generator, solar, or other) including for stand-alone devices (EPI cold chain), and power is interrupted less than 2 hours per day). Health posts (10 percent) are least likely to have a power source. Facilities that are managed by other authority type (59 percent) are more likely than government managed facilities (17 percent) to have power source.

In general, three in ten of facilities have an improved water source in the facility (i.e., water is piped into the facility or onto facility grounds, or else water is from a public tap or standpipe, a tube well or borehole, a protected dug well, or protected spring, or rain water, or bottle water), and water is available from this source on facility premises. However, health posts are less likely than other facility type to have an improved water source (17 percent).

About seven of ten facilities (69 percent) have a client latrine on premises that is accessible for general outpatient client use. However, health posts (60 percent) as well as health facilities managed by other government authority (66 percent) are less likely to have a client latrine on premises that is accessible for general outpatient client use.

Table 2.1. 1 Basic amenities tracer items, by region, type of Facilities, managing authority and Rural/Urban, Ethiopia SARA 2016 (N=698)

Background characteristics	Basic amenities									Total number of facilities
	Power source	Improved water source	Consultation room	Sanitation facilities	Communication equipment	Computer with internet	Emergency transport	Percent of facilities with all items	Mean availability of tracer items	
Regions										
Tigray	45%	42%	55%	89%	54%	2%	76%	0%	52%	54
Afar	20%	27%	70%	96%	38%	1%	94%	0%	49%	50
Amhara	39%	36%	73%	73%	32%	5%	77%	1%	48%	77
Oromiya	13%	29%	58%	66%	20%	0%	90%	0%	39%	120
Somali	9%	25%	100%	73%	29%	1%	65%	0%	43%	67

Beni. Gumz	20%	21%	41%	75%	26%	2%	90%	1%	39%	44
S.N.N.P.	17%	20%	91%	62%	22%	0%	88%	0%	43%	77
Gambela	16%	35%	93%	62%	51%	2%	65%	0%	46%	44
Harari	61%	60%	93%	96%	65%	6%	72%	1%	65%	34
Addis Ababa	83%	99%	93%	99%	90%	27%	71%	22%	80%	91
Dire Dawa	59%	74%	99%	99%	51%	30%	84%	22%	71%	40
Facility type										
Referral hospital	88%	100%	91%	97%	100%	84%	97%	63%	94%	32
General hospital	76%	98%	96%	98%	94%	63%	93%	43%	88%	120
Primary hospital	63%	82%	84%	87%	77%	42%	85%	27%	74%	62
Health centre	44%	53%	88%	92%	37%	4%	86%	0%	58%	167
Health post	10%	16%	69%	60%	15%	0%	90%	0%	37%	138
Higher clinic	99%	98%	85%	100%	82%	35%	59%	20%	80%	26
Medium clinic	82%	96%	93%	93%	93%	21%	53%	12%	76%	67
Lower clinic	47%	61%	64%	85%	69%	1%	50%	0%	54%	86
Managing authority										
Government	17%	23%	73%	66%	19%	1%	89%	0%	41%	463
Other	59%	73%	73%	88%	76%	10%	53%	6%	62%	235
Urban/Rural										
Urban	54%	76%	80%	93%	70%	11%	69%	6%	65%	455
Rural	16%	20%	71%	64%	17%	0%	87%	0%	39%	243
Total	**23%**	**30%**	**73%**	**69%**	**27%**	**2%**	**84%**	**1%**	**44%**	**698**

Overall, 44 percent of facilities had the mean availability of tracer item for basic amenities available. The mean availability of basic amenities with the highest percentage was in Addis Ababa city administration (80 percent) and lowest in Oromia (39 percent) and Benishangul Gumuz Regional state, respectively (Figure 2.1.2).

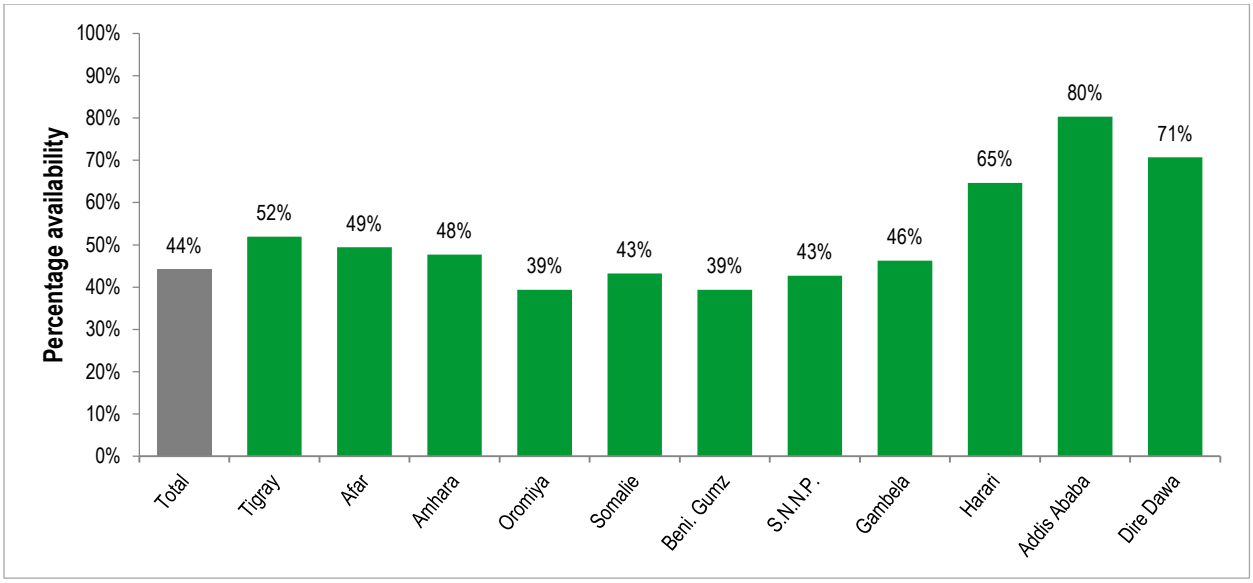


Figure 2.1.2 Mean availability of basic amenities tracer items, by region, *Ethiopia SARA 2016* (N=698)

2.2 Basic Equipment

Key Findings
• One tenth of the facilities have all of the basic equipment's • Mean availability of tracer items is 63 percent • Thermometer is the most widely available equipment (86 percent) of all the basic equipment and light source is the least available (29 Percent) of all the basic equipment. • There is a slight variation between urban and rural facilities in the mean availability of basic equipment's with 79 percent and 60 percent respectively. • There is also a slight difference in the mean availability of basic equipment's among facility types with the highest (89 percent) at referral hospital and lowest (57 percent) at health post.

For basic equipment, health facilities assessed on the availability of the following six Items: adult scale, infant scale, stethoscope, thermometer, blood pressure apparatus, and a light source for patient examinations. Figure 2.2.1 shows the percentage of facilities with basic equipment tracer items in 2016. One in ten of the facilities are equipped with all of the basic equipment's items; and the mean availability of basic equipment's tracer item in a facility is 63 percent. Thermometer is the most widely available equipment (86 percent) of all the basic equipment and light source is the least available (29 Percent) of all the basic equipment.

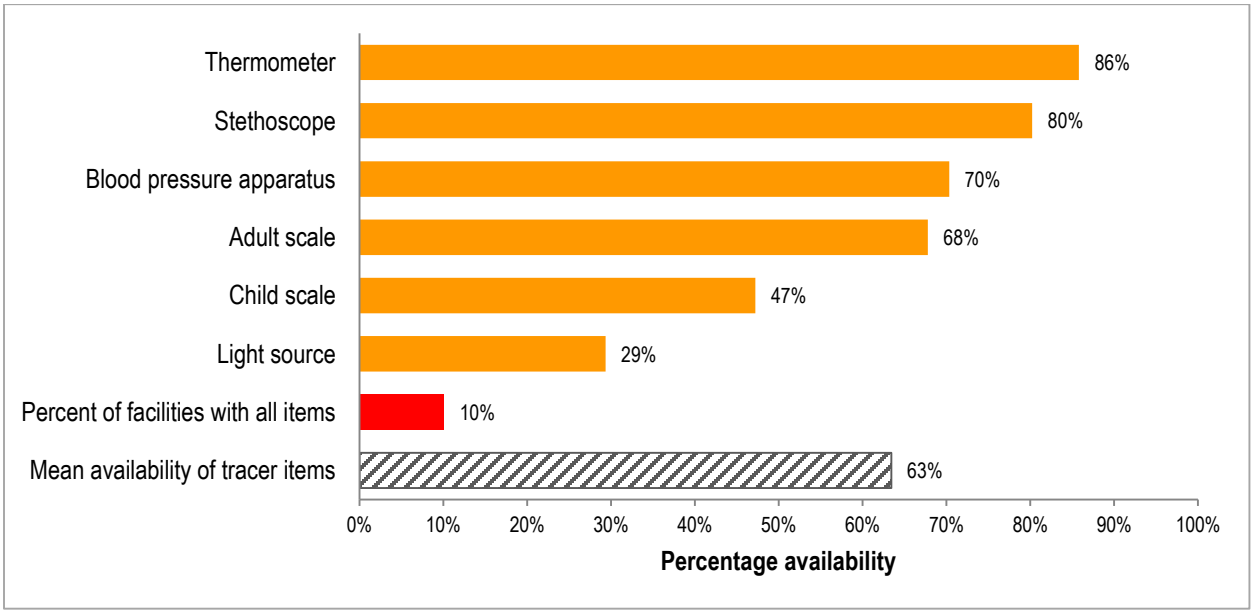


Figure 2.2.1. Percentage of facilities with basic equipment items available, *Ethiopia SARA 2016* (N=698)

There is a slight variation between urban and rural facilities in the mean availability of basic equipment's with 79 percent and 60 percent respectively. There is a difference in the mean availability of basic equipment's among facility types with the highest (89 percent) at referral hospital and lowest (57 percent) at health post. There is also a variation between urban and rural facilities in the availability of all tracer items of basic equipment's with 26 percent and 6 percent respectively. Except for child scale (14 percent at others vs 53 percent at government), all other basic equipment items were most frequently available at facilities managed by others than government (Table 2.2.1).

Table 2.2. 1 Shows the availability and percentage of basic equipment's items by region, facility type, managing authority, rural/urban in health facilities, Ethiopia SARA 2016 (N=698).

	Basic equipment								
Background Characteristics	Adult scale	Child scale	Thermometer	Stethoscope	Blood pressure apparatus	Light source	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions									
Tigray	58%	56%	93%	70%	70%	20%	6%	61%	54
Afar	72%	73%	71%	100%	100%	49%	32%	77%	50
Amhara	76%	67%	94%	84%	74%	39%	15%	72%	77
Oromiya	70%	50%	84%	81%	67%	20%	7%	62%	120
Somali	65%	39%	78%	79%	78%	42%	21%	64%	67
Beni. Gumuz	86%	63%	70%	59%	47%	23%	11%	58%	44
S.N.N.P.	55%	26%	84%	76%	66%	26%	5%	56%	77
Gambella	67%	34%	72%	69%	67%	43%	9%	59%	44
Harrari	88%	15%	74%	92%	89%	65%	6%	71%	34
Addis Ababa	93%	45%	99%	100%	100%	88%	40%	87%	91
Dire Dawa	87%	18%	87%	100%	100%	40%	12%	72%	40
Facility type									
Referral hospital	97%	63%	97%	100%	100%	75%	56%	89%	32
General hospital	92%	61%	93%	100%	99%	79%	50%	87%	120
Primary hospital	81%	55%	87%	90%	89%	69%	45%	78%	62
Health centre	83%	59%	89%	98%	94%	43%	31%	78%	167
Health post	61%	52%	83%	72%	59%	15%	4%	57%	138
Higher clinic	98%	42%	96%	100%	100%	89%	42%	88%	26
Medium clinic	95%	22%	99%	100%	100%	90%	22%	84%	67
Lower clinic	75%	5%	92%	98%	98%	75%	5%	74%	86
Managing authority									
Government	65%	53%	84%	77%	66%	21%	10%	61%	463
Other	82%	14%	94%	99%	99%	80%	14%	78%	235
Urban/Rural									
Urban	85%	36%	92%	96%	94%	69%	26%	79%	455
Rural	64%	50%	84%	77%	65%	20%	6%	60%	243
Total	**68%**	**47%**	**86%**	**80%**	**70%**	**29%**	**10%**	**63%**	**698**

Overall, there is a variation amongst regions in the mean availability of basic equipment's with the highest (87 percent) at Addis Ababa city administration and lowest (56 percent) at SNNP regional state. (Table 2.2.1 and Figure 2.2.2).

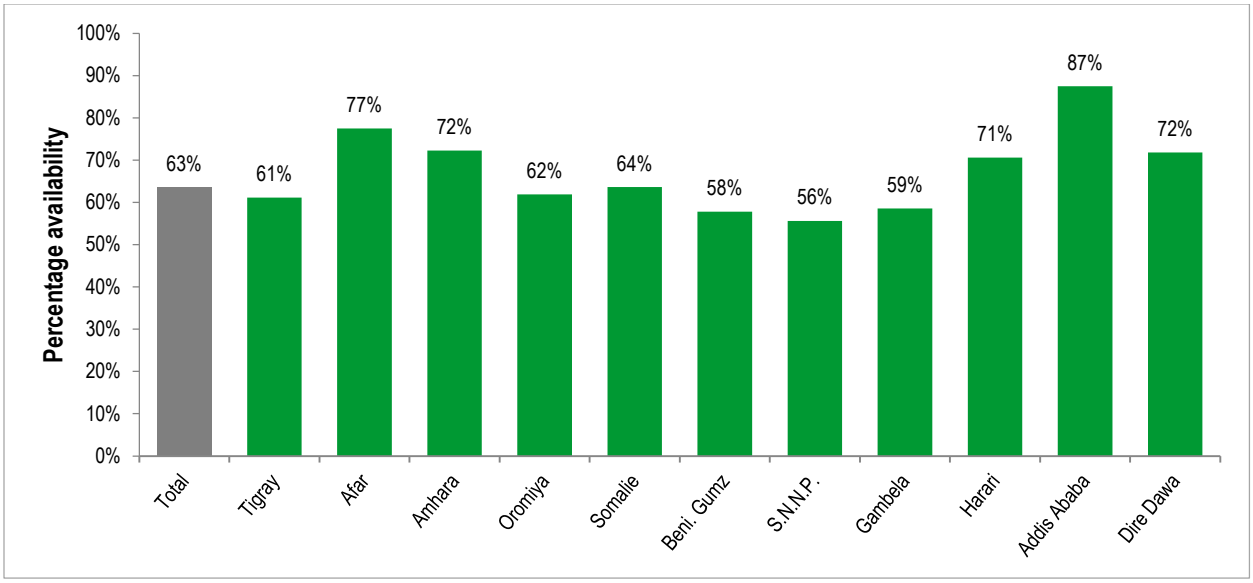


Figure 2.2.2 Mean availability of basic equipment tracer items, by region, *Ethiopia SARA 2016* (N=698)

2.3 Standard Precautions

Key Findings

- Four in ten of the health facilities have mean availability of items for standard precaution for infection prevention.
- Facilities with all items of standard precaution were only 2 percent.
- Health facilities in Afar regional state had the lowest standard precaution for infection prevention which accounts 34 percent.
- Facilities managed by other than governmental (73 percent) have by far highest percentage of mean availability of standard precautions for infection prevention items compared with facilities managed by government (36 percent).

The presence of standard precautions indicates implementation of infection control practices. The following nine tracer items were included in this domain: sterilization equipment, disposal of sharps and other infectious wastes, disinfectant, sharps box/container, single use-standard disposable or auto disable syringes, soap or hand disinfectant, latex gloves, masks, and guidelines for standard precautions.

Four in ten of the health facilities have mean availability of items for standard precaution for infection prevention. Only 2 percent of facilities have all items for standard precaution for infection prevention. The most frequently available items for standard precaution for infection prevention is disposable or auto disposable syringe which is found in all of the facilities whereas the least available is items for appropriate storage of infectious waste (17 percent) (Figure 2.3.1).

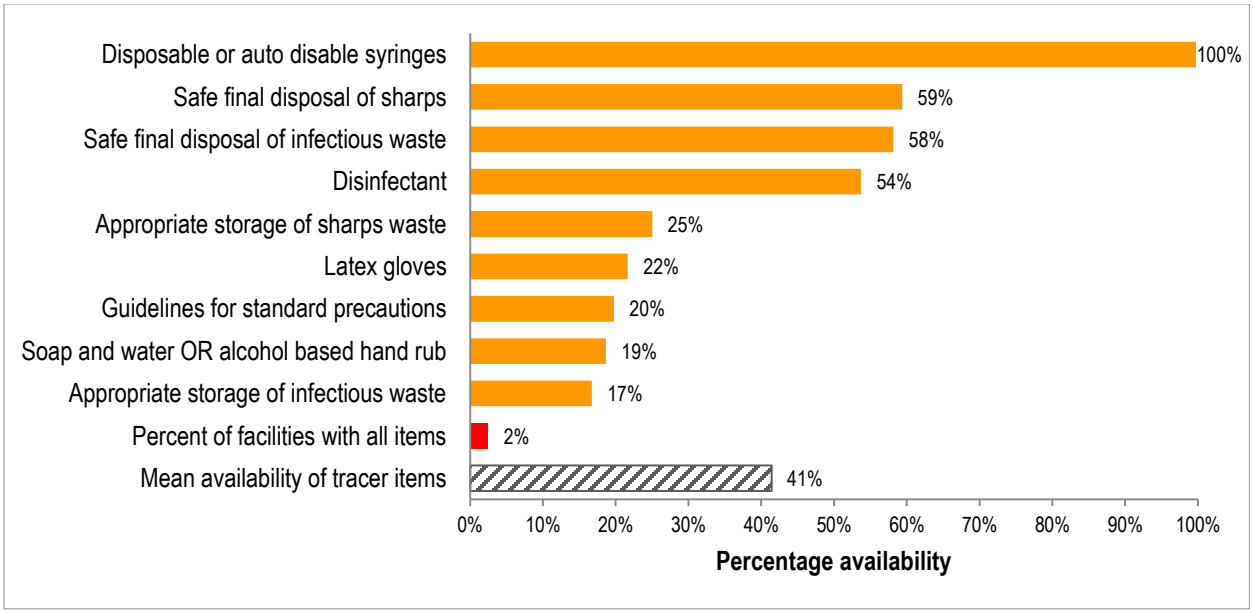


Figure 2.3.1 The availabilities of standard precaution for infection prevention in facilities, Ethiopia SARA 2016 (N=698)

The result showed that there were differences in mean availability of standard precaution for infection prevention among regions ranging from 34 percent in Afar to 84 percent in Addis Ababa city administration.

Health facilities in rural and urban settings, on average, had 35 and 69 percent mean availability of standards precaution for infection prevention item respectively. Facilities managed by other than governmental (73 percent) have by far highest percentage of mean availability of standard precautions for infection prevention items compared with facilities managed by government (36 percent). There is a difference in the mean availability of standard precautions for infection prevention items among facility types with the highest (93 percent) at referral hospital and lowest (29 percent) at health post (Table 2.3.1).

Table 2.3. 1 The availabilities of standard precaution for infection prevention in health facilities, by background characteristics, Ethiopia SARA 2016 (N=698)

Background characteristics	Standard precaution for infection prevention items											Total number of facilities
	Safe final disposal of sharps	Safe final disposal of infectious waste	Appropriate storage of sharps waste	Appropriate storage of infectious waste	Disinfectant	Disposable or auto disable syringes	Soap and water OR alcohol based hand rub	Latex gloves	Guidelines for standard precautions	Percent of facilities with all items	Mean availability of tracer items	
Regions												
Tigray	64%	86%	30%	27%	74%	99%	20%	27%	22%	7%	50%	54
Afar	28%	27%	31%	9%	56%	95%	13%	31%	18%	0%	34%	50
Amhara	64%	48%	27%	20%	67%	100%	19%	21%	23%	3%	43%	77
Oromiya	58%	55%	23%	15%	53%	100%	14%	20%	22%	1%	40%	120
Somalie	67%	66%	15%	9%	61%	100%	9%	14%	2%	1%	38%	67
Beni. Gumz	55%	56%	14%	19%	40%	99%	12%	13%	11%	1%	35%	44
S.N.N.P.	54%	63%	19%	8%	35%	100%	19%	15%	17%	0%	37%	77
Gambela	56%	61%	31%	15%	33%	100%	42%	47%	10%	5%	44%	44

Harari	95%	60%	57%	9%	81%	100%	51%	55%	28%	4%	60%	34
Addis Ababa	83%	77%	89%	92%	96%	97%	91%	92%	39%	29%	84%	91
Dire Dawa	99%	83%	58%	50%	90%	100%	54%	64%	28%	8%	69%	40
Facility type												
Referral hospital	94%	94%	100%	81%	100%	100%	88%	97%	88%	63%	93%	32
General hospital	95%	93%	95%	70%	100%	100%	86%	92%	64%	38%	88%	120
Primary hospital	77%	71%	87%	66%	89%	89%	68%	84%	53%	27%	76%	62
Health centre	80%	73%	84%	47%	79%	100%	36%	57%	28%	4%	65%	167
Health post	52%	52%	0%	0%	41%	100%	0%	0%	17%	0%	29%	138
Higher clinic	95%	97%	81%	95%	98%	95%	92%	95%	46%	42%	88%	26
Medium clinic	81%	77%	82%	69%	85%	100%	84%	71%	34%	20%	76%	67
Lower clinic	67%	63%	77%	55%	81%	99%	88%	88%	11%	3%	70%	86
Managing authority												
Government	57%	56%	16%	9%	49%	100%	7%	11%	20%	1%	36%	463
Other	73%	70%	79%	62%	84%	99%	87%	85%	20%	12%	73%	235
Urban/Rural												
Urban	73%	74%	73%	62%	80%	99%	67%	70%	27%	12%	69%	455
Rural	56%	54%	14%	6%	48%	100%	7%	10%	18%	0%	35%	243
Total	**59%**	**58%**	**25%**	**17%**	**54%**	**100%**	**19%**	**22%**	**20%**	**2%**	**41%**	**698**

2.4 Diagnostics

Key Findings

- About 4 in ten health facilities, excluding health post have mean availability of diagnostic capacity.
- Availability of facilities with all items is 4 percent
- The malaria diagnostic capacities of facilities is 61 percent
- HIV diagnostic capacity is the least test found in a facilities with 20 percent
- Facilities, except health posts in Harari regional state (73 percent) are more likely to have diagnostic capacity among regions and facilities in Oromia regional state (31 percent) are the least in diagnostic capacity.
- Government facilities are more likely to have diagnostic capacity (50 percent) than facilities managed by others authorities (26 percent).
- More than half (52 percent) of health posts have malaria diagnostic capacity, indicating that malaria diagnostic test is fairly widespread and accessible at all facility types except at lower clinic (6 percent).

Service delivery would not be complete without diagnostic capacities in the health facilities. Health facilities do not necessarily require the availability of a specific or designated laboratory building, but the mere presence of tests in the facility including the availability of reagents and equipment needed for each test depending on the level of the facility type. Facilities assessed on the capacity to conduct the following 8 diagnostic tests on-site: HIV test (RDT or ELISA), blood glucose test, malaria test (RDT or smear), syphilis rapid test (VDRL/RPR), haemoglobin test, urine pregnancy test, urine dipstick for protein, and urine dipstick for glucose.

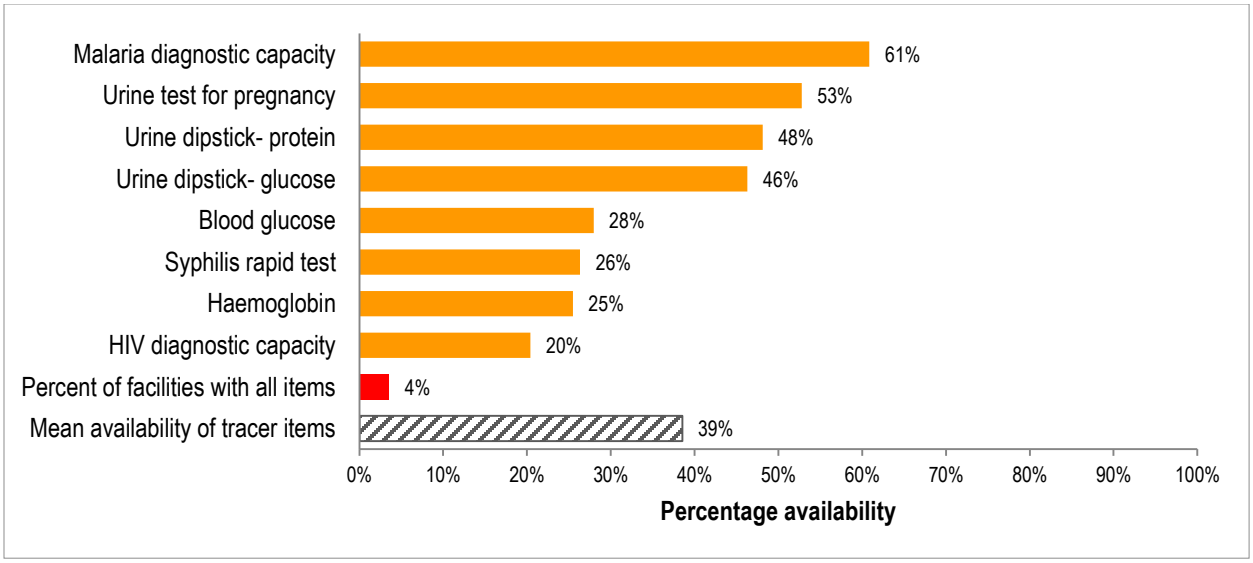


Figure 2.4.1 Percentage of facilities with diagnostic capacity items available, *Ethiopia SARA 2016* (N=547)

The capacity of facilities to conduct all types of diagnostic test is only four percent. Malaria diagnostic capacity of facilities except health post is 61 percent, which is the most common test and the least common diagnostic capacity observed is HIV test (20 percent). Only malaria diagnostic test is given at health post level. More than half (52 percent) of health posts have malaria diagnostic capacity, indicating that malaria diagnostic test is fairly widespread and accessible at all facility types except at lower clinic (6 percent).

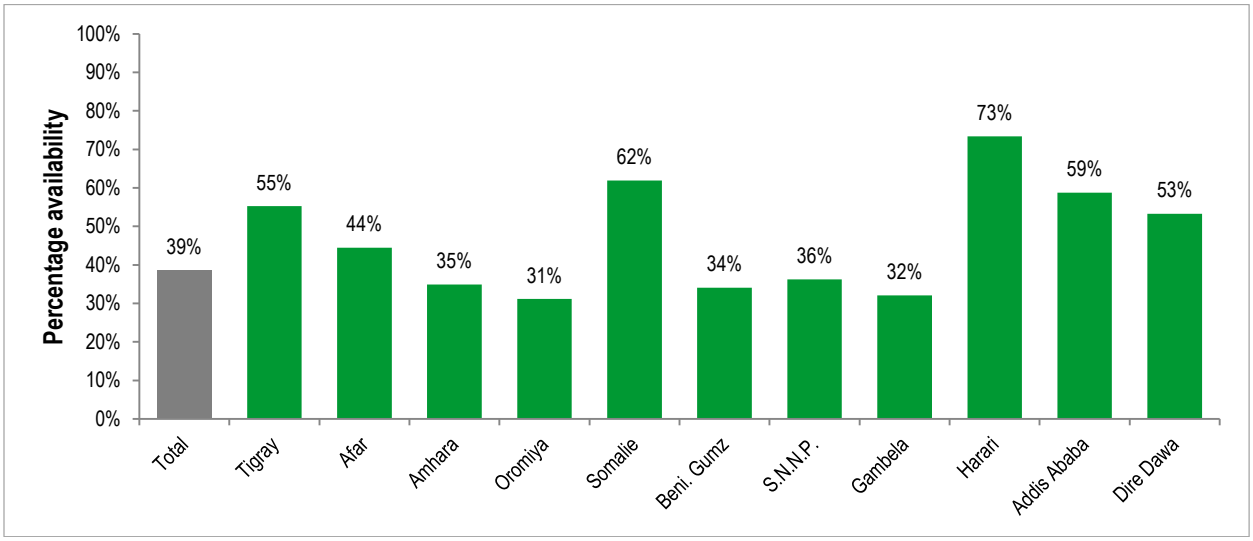


Figure 2.4.2 Mean availability of diagnostic capacity tracer items, by region, *Ethiopia SARA 2016* (N=547)

Diagnostic capacity of most facilities at regional level is below 50 percent where the highest observed in Harari and the lowest in Oromia regional states. The following table shows there is difference in diagnostic capacity of facilities owned by government (50 percent) and others (26 percent). Besides,

there is also diagnostic capacity variations among different facility types, referral hospitals (82 percent), and lower clinic (3 percent), as well as urban (50 percent) and rural facilities (26 percent) (Table 2.4.1).

Table 2.4. 1 Percentage of health posts with malaria diagnostic capacity items available, Ethiopia SARA 2016 (N=547)

	Diagnostics										
	Haemoglobin	Blood glucose	Malaria diagnostic capacity	Urine dipstick - protein	Urine dipstick - glucose	HIV diagnostic capacity	Syphilis rapid test	Urine test for pregnancy	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions											
Tigray	58	44	77	71	71	24	34	63	6	55	42
Afar	5	35	89	48	42	31	28	79	0	44	38
Amhara	18	25	59	39	39	24	24	51	9	35	61
Oromiya	25	8	59	41	37	12	22	44	1	31	99
Somali	23	57	87	83	83	25	59	78	8	62	43
Beni. Gumuz	18	29	56	32	35	31	22	49	4	34	30
S.N.N.P.	15	33	53	48	45	27	15	53	0	36	61
Gambella	9	20	71	37	37	13	29	39	0	32	30
Harrari	71	82	89	87	87	13	64	93	9	73	23
Addis Ababa	56	66	65	74	74	16	53	67	5	59	91
Dire Dawa	40	69	57	63	63	22	53	60	6	53	29
Facility type											
Referral hospital	63	81	88	100	100	72	66	91	22	82	32
General hospital	66	94	93	96	96	59	76	97	27	85	117
Primary hospital	43	77	75	85	85	59	54	80	15	70	61
Health centre	28	22	87	62	59	33	29	73	4	49	165
Higher clinic	69	96	98	99	99	23	90	96	6	84	23
Medium clinic	60	73	82	85	84	12	55	80	7	66	64
Lower clinic	0	7	6	3	3	0	0	3	0	3	85
Managing authority											
Government	29	25	85	63	60	34	29	73	4	50	320
Other	21	32	34	32	32	5	23	31	3	26	227
Urban/Rural											
Urban	32	38	55	54	51	19	30	54	4	42	431
Rural	16	14	70	40	39	22	21	52	2	34	116
Total	25	28	61	48	46	20	26	53	4	39	547

Only malaria diagnostic test is provided at health post level. More than half (52 percent) of health posts have malaria diagnostic capacity, indicating that malaria diagnostic test is fairly widespread and accessible at all facility types except at lower clinic (6 percent). At health post level, diagnostic capacity for malaria is lowest at Oromia regional state (31 percent) which is below the national average whereas the highest was observed in SNNP regional states (Table 2.4.2).

Table 2.4. 2 Percentage of health posts with malaria diagnostic capacity items available, Ethiopia SARA 2016 (N=138)

Background characteristics	Malaria diagnostics capacity
Tigray	92%
Afar	83%
Amhara	69%
Oromiya	31%
Somali	88%
Beni. Gumuz	93%

S.N.N.P.	50%
Gambella	71%
Harrari	91%
Addis Ababa	NA
Dire Dawa	91%
Urban/Rural	
Urban	99%
Rural	51%
Total	**52%**

2.5 Essential Medicines

Key Findings

- Oral Rehydration Salt (ORS) (55 percent) is the most available essential medicine whereas the least available essential medicine was Beclomethasone inhaler (1 percent)
- Six of ten health posts have Amoxicillin tablet/capsule which is the most available essential medicine at health post level.
- The mean tracer items availability of essential medicines was 26 percent, which ranges from 15 percent to 44 percent across regions.
- Only ORS, Amoxicillin tablet/capsule/ and Amoxicillin syrup/suspension/dispersible tablet are available above 50 percent of the health facilities.
- None of the facilities, excluding health posts, has all essential medicines tracer drugs available.
- Somali region (44 percent) has the highest availability of essential medicines and Gambella region (15 percent) has the least availability of essential medicines.
- Essential medicines are more likely available in Governmental facilities (43 percent) than facilities managed by others (7 percent).

Access to essential medicines and supplies is basic to a well-functioning health care delivery system. Essential medicines are those that satisfy the priority healthcare needs of the population. They are selected with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. Essential medicines are expected to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality and adequate information, and at a price, the individual and the community can afford.

Healthcare consumers and clients commonly mention availability of medicines as the most important element of quality, and the absence of medicines is a key factor in the underuse of health services. The essential medicines realm, in this context, consists of the following 20 tracer drugs: Amitriptyline tablet, Amlodipine tablet or alternative calcium channel blocker, Amoxicillin syrup/suspension/dispersible tablet, Amoxicillin tablet, Ampicillin injection, Beclometasone inhaler, Ceftriaxone injection, Enalapril tablet or alternative ACE inhibitor, Fluoxetine tablet, Gentamicin injection, Glibenclamide tablet, Ibuprofen tablet, Insulin regular injection, Metformin tablet, Omeprazole tablet or alternative, Oral rehydration solution, Paracetamol tablet, Salbutamol inhaler, Simvastatin tablet or other statin, Zinc Sulphate tablet.

Among the 20 essential drugs, Oral Rehydration Salt (ORS) (55 percent) is the most available essential medicine and Beclomethasone inhaler (1 percent) is the least available drugs. None of the health facilities, except health posts, have all the 20 essential drugs available (Fig 2.5.1).

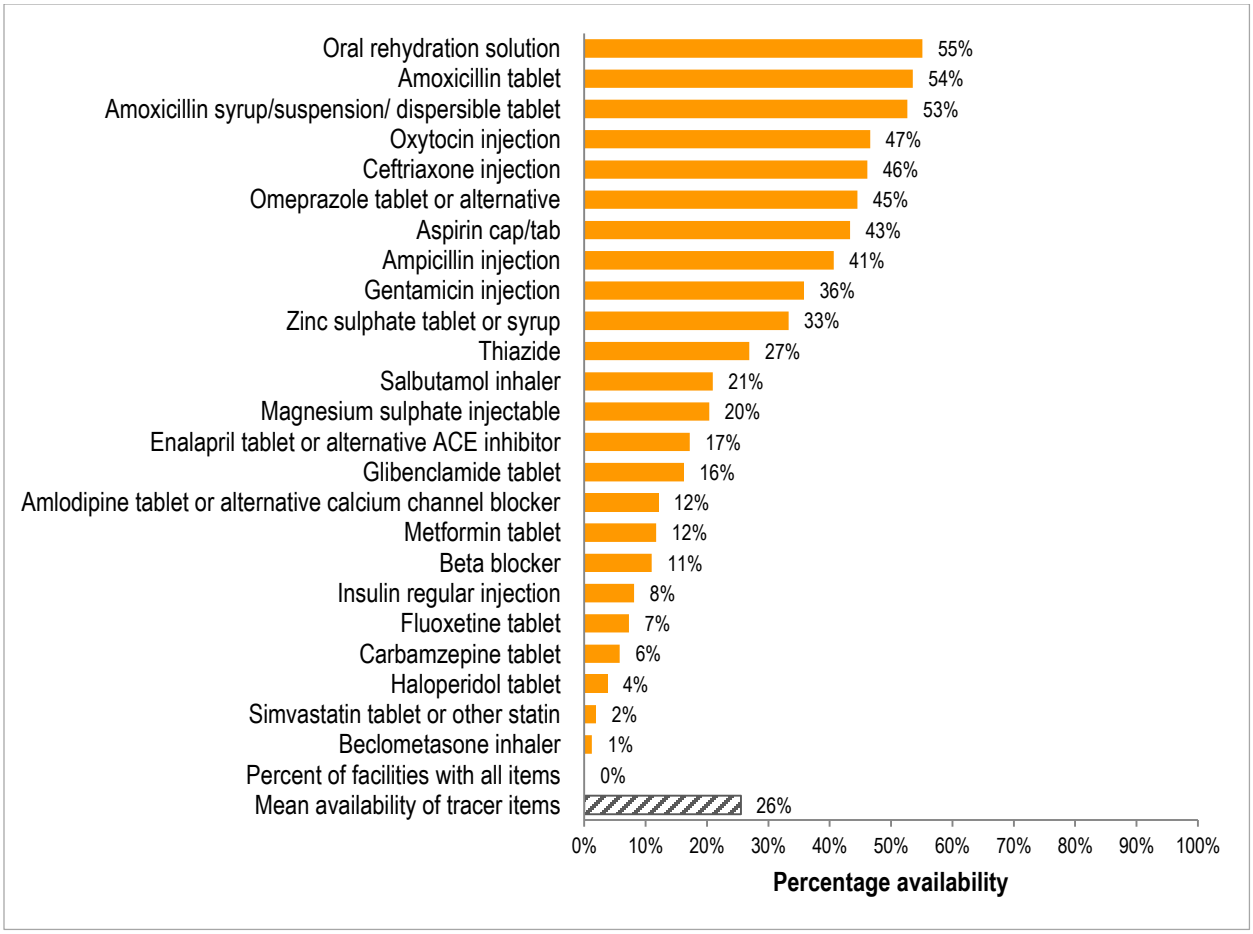


Figure 2.5.1 Percentage of facilities with essential medicines items available, *Ethiopia SARA 2016* (N=547)

Fig 2.5.2 shows the availability of essential medicines tracer items by region. The mean availability of essential medicines tracer items was 26 percent. Overall, the mean availability of essential medicine is below 50% across regions ranging from 15 percent to 44 percent. Facilities in Somali regions had the highest percentage (44%) of mean availability of essential medicines whilst facilities in Gambella region had the least (15%) (Table 2.5.1 Fig 2.5.2).

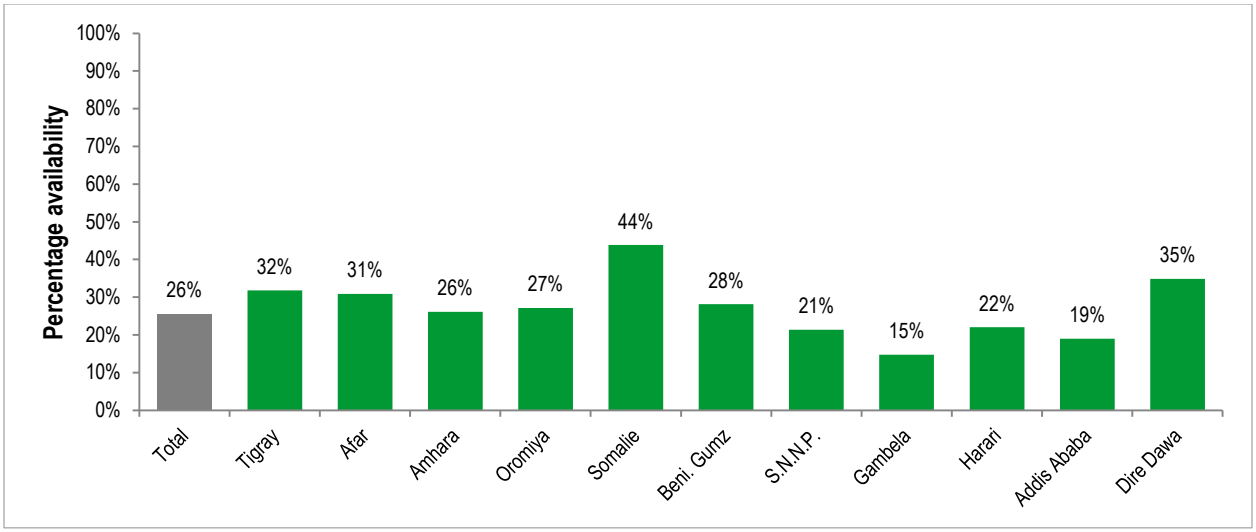


Figure 2.5.2 Mean availability of essential medicine tracer items, by region, *Ethiopia SARA 2016* (N=547)

Table 2.5.1 shows percentages of facilities, excluding health posts, having the 20 essential medicines available, by region. The highest percentage of mean availability of essential medicine at Somali regional state is because of the 11 of the essential medicines are more frequently available in Somali region as compared with other regions. The more frequently available 11 essential medicines at Somali regional state were Amoxicillin table, Oxytocin injection, Amoxicillin syrup/suspension/dispersible tablet, Gentamicin injection, Aspirin cap/tab, Oral rehydration solution (81 percent), Ceftriaxone injection, Zinc sulphate tablet or syrup, Ampicillin injection, Magnesium sulphate injectable and Salbutamol inhaler with percent of 95, 86 , 85, 83, 82,77, 72, 65,63, and 48 respectively.

Table 2.5. 1 Percentages of facilities, excluding health posts, having the 20 essential medicines available, by region, Ethiopia SARA 2016 (N=547)

	Region											**Total**
Essential Drugs	Tigray	Afar	Amhara	Oromiya	Somalie	Beni. Gumz	S.N.N.P.	Gambela	Harari	Addis Ababa	Dire Dawa	
Amlodipine tablet or alternative calcium channel blocker	7%	2%	10%	9%	35%	32%	10%	5%	23%	25%	39%	**12%**
Amoxicillin syrup/suspension/dispersible tablet	63%	67%	54%	57%	85%	62%	50%	32%	36%	26%	50%	**53%**
Amoxicillin tablet	64%	77%	54%	57%	95%	59%	50%	33%	39%	30%	56%	**54%**
Ampicillin injection	60%	61%	44%	46%	65%	30%	30%	20%	23%	23%	41%	**41%**
Aspirin cap/tab	47%	25%	42%	52%	82%	33%	38%	21%	25%	25%	51%	**43%**
Beclometasone inhaler	1%	1%	1%	1%	2%	1%	1%	4%	9%	3%	9%	**1%**
Beta blocker	10%	9%	10%	16%	7%	9%	4%	4%	15%	15%	26%	**11%**
Carbamazepine tablet	7%	3%	1%	9%	9%	5%	1%	5%	15%	13%	25%	**6%**
Ceftriaxone injection	61%	69%	51%	49%	77%	46%	39%	22%	34%	23%	45%	**46%**
Enalapril tablet or alternative ACE inhibitor	20%	17%	22%	17%	7%	9%	13%	5%	17%	21%	37%	**17%**
Fluoxetine tablet	3%	3%	4%	9%	5%	2%	10%	2%	17%	7%	27%	**7%**
Gentamicin injection	33%	53%	19%	42%	83%	66%	45%	29%	23%	19%	38%	**36%**
Glibenclamide tablet	12%	16%	16%	24%	20%	20%	2%	9%	28%	25%	39%	**16%**
Haloperidol tablet	3%	2%	7%	2%	3%	5%	1%	2%	8%	7%	25%	**4%**
Insulin regular injection	4%	17%	13%	6%	6%	2%	4%	2%	8%	14%	30%	**8%**

Magnesium sulphate injectable	42%	17%	10%	27%	63%	23%	16%	15%	21%	11%	13%	**20%**
Metformin tablet	8%	10%	13%	9%	8%	5%	10%	4%	30%	23%	34%	**12%**
Omeprazole tablet or alternative	54%	56%	48%	46%	73%	48%	42%	22%	34%	24%	59%	**45%**
Oral rehydration solution	62%	76%	48%	60%	81%	51%	56%	48%	34%	42%	66%	**55%**
Oxytocin injection	64%	51%	51%	56%	86%	45%	30%	21%	32%	29%	39%	**47%**
Salbutamol inhaler	24%	19%	16%	20%	48%	23%	27%	11%	24%	15%	29%	**21%**
Simvastatin tablet or other statin	6%	3%	1%	1%	3%	0%	1%	4%	18%	7%	21%	**2%**
Thiazide	38%	20%	33%	31%	23%	23%	16%	7%	23%	22%	44%	**27%**
Zinc sulphate tablet or syrup	66%	69%	56%	18%	72%	67%	24%	25%	0%	13%	10%	**33%**
Percent of facilities with all items	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Mean availability of tracer items	32%	31%	26%	27%	44%	28%	21%	15%	22%	19%	35%	**26%**
Total number of facilities	42	38	61	99	43	30	61	30	23	91	29	**547**

Table 2.5.2 shows percentages of facilities, excluding health posts, having the 20 essential medicines available, by facility type, managing authority and urban rural settings.

Essential medicines were more likely to be available in facilities managed by government (43 percent) than facilities managed by others (7 percent). Concerning essential medicines availability by facility type, different availability figures observed at different facility level. The mean availability of essential medicines tracer items was highest in referral hospitals (84 percent), but least is observed in lower clinics, which is only 3 percent. A slight Urban-Rural disparity in availability of essential medicines is observed; availability of essential medicines in rural settings was by far highest (31 percent) than facilities in urban settings (22 percent) (Table 2.5.2).

Table 2.5. 2 Percentages of facilities, excluding health posts, having the 20 essential medicines available, by background characteristics, Ethiopia SARA 2016 (N=547)

Essential Drugs	Facility type							Managing authority		Urban/rural		**Total**
	Referral hospital	General hospital	Primary hospital	Health centre	Higher clinic	Medium clinic	Lower clinic	Government	Other	Urban	Rural	
Amlodipine tablet or alternative calcium channel blocker	88%	80%	64%	16%	16%	4%	2%	19%	5%	11%	13%	**12%**
Amoxicillin syrup/suspension/dispersible tablet	97%	93%	87%	92%	20%	9%	7%	91%	10%	39%	73%	**53%**
Amoxicillin tablet	97%	97%	90%	93%	21%	13%	7%	92%	11%	40%	73%	**54%**
Ampicillin injection	72%	76%	82%	73%	15%	7%	3%	72%	7%	30%	56%	**41%**
Aspirin cap/tab	88%	80%	79%	75%	17%	6%	7%	75%	8%	35%	55%	**43%**
Beclometasone inhaler	59%	36%	34%	0%	1%	1%	0%	2%	1%	2%	0%	**1%**
Beta blocker	97%	71%	54%	16%	19%	1%	0%	18%	3%	14%	6%	**11%**
Carbamazepine tablet	94%	78%	67%	6%	8%	1%	0%	9%	2%	8%	3%	**6%**
Ceftriaxone injection	97%	93%	89%	78%	17%	16%	6%	78%	11%	36%	60%	**46%**
Enalapril tablet or alternative ACE inhibitor	94%	85%	82%	26%	19%	2%	2%	29%	5%	20%	14%	**17%**
Fluoxetine tablet	88%	72%	56%	10%	2%	1%	0%	13%	1%	11%	2%	**7%**
Gentamicin injection	75%	83%	75%	58%	39%	15%	5%	57%	12%	33%	40%	**36%**
Glibenclamide tablet	91%	91%	85%	23%	21%	10%	1%	26%	6%	18%	14%	**16%**
Haloperidol tablet	94%	60%	59%	4%	2%	0%	0%	6%	1%	4%	4%	**4%**
Insulin regular injection	97%	80%	87%	10%	16%	1%	0%	13%	3%	10%	5%	**8%**
Magnesium sulphate injectable	88%	69%	74%	36%	8%	0%	0%	37%	2%	20%	22%	**20%**
Metformin tablet	94%	85%	77%	16%	17%	2%	2%	18%	5%	16%	6%	**12%**

Omeprazole tablet or alternative	94%	91%	79%	78%	15%	13%	3%	78%	8%	30%	65%	**45%**
Oral rehydration solution	100%	97%	82%	81%	37%	43%	18%	81%	26%	49%	64%	**55%**
Oxytocin injection	97%	92%	90%	82%	41%	7%	2%	81%	9%	33%	65%	**47%**
Salbutamol inhaler	44%	58%	67%	32%	16%	15%	3%	32%	8%	20%	23%	**21%**
Simvastatin tablet or other statin	63%	41%	18%	1%	9%	2%	0%	1%	3%	3%	1%	**2%**
Thiazide	97%	80%	87%	46%	15%	2%	2%	47%	5%	21%	36%	**27%**
Zinc sulphate tablet or syrup	38%	41%	51%	51%	24%	26%	9%	50%	15%	25%	45%	**33%**
Percent of facilities with all items	6%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Mean availability of tracer items	84%	75%	71%	42%	17%	8%	3%	43%	7%	22%	31%	**26%**
Total number of facilities	32	117	61	165	23	64	85	320	227	431	116	**547**

Availability of Essential Medicines in Health Posts

According to the Ethiopian FMHACA health post requirements, the health post shall not maintain medicines, medical supplies or equipment, which is not included in the health post medicines list. Only a number of essential medicines needed by Health Extension Workers (HEWs) in their endeavour to serve the community. Hence, only a few of the essential medicines tracer items should be expected to be found at Health Post level. Therefore, health posts are assessed for the availability 4 of the essential medicines: Amoxicillin tablets/capsules, Amoxicillin syrups or suspensions/dispersible tablets, oral rehydration solution and Zinc sulphate tablet or syrup to identify general service readiness at health post level.

Amoxicillin tablet/capsule is the most available essential medicine at health post level which is found in six of ten health facilities followed by Amoxicillin syrup or suspension or dispersible tablet (56 percent). ORS, a very important medicine in the management of diarrhoea was available in four of ten-health posts. The availability of ORS at health posts varies by region. It is most frequently available at Afar regional state (92 percent) but it is least available at facilities located in Benishangul Gumuz (21 percent). Oral rehydration solution and Zinc sulphate tablet or syrup are more frequently available essential medicines at facilities in urban setting (83 and 75 percent) than facilities in rural setting (39 and 30 percent) respectively (Table 2.5.3).

Table 2.5. 3 Percentages of health posts, having the 4 of the essential medicines available, by background characteristics, Ethiopia SARA 2016 (N=138)

Background Characteristics	Essential Medicines assessed at health post level				Total number of facilities
	Amoxicillin syrup/suspension/dispersible tablet	Amoxicillin tablet	Oral rehydration solution	Zinc sulphate tablet or syrup	
Regions					
Tigray	75%	83%	83%	92%	12
Afar	83%	83%	92%	42%	12
Amhara	50%	44%	44%	63%	16
Oromiya	56%	75%	31%	19%	16
Somalie	50%	56%	50%	50%	16
Beni. Gumuz	43%	50%	21%	57%	14
S.N.N.P.	56%	44%	38%	6%	16
Gambella	71%	71%	64%	36%	14
Harrari	82%	73%	45%	9%	11
Addis Ababa	NA	NA	NA	NA	0
Dire Dawa	100%	100%	82%	9%	11
Urban/Rural					

Urban	45%	85%	83%	75%	13
Rural	56%	59%	39%	30%	125
Total	**56%**	**59%**	**40%**	**31%**	**138**

2.6 General Service Readiness Summary Score

The general health service readiness score is a composite summary measure designed through combining information from the five general service readiness domains: basic amenities, standard precautions, basic equipment, diagnostics and essential medicines. For each domain, the average availability of tracer items is revealed as the domain score.

The assessment shows that the general service readiness index was 54 percent, implying that 54 percent of all health facilities, excluding health posts are ready to provide the general health services. Of these, 78 percent have the basic amenities to provide services, 69 percent have standard precautions, 60 percent have the basic equipment required, 39 percent have diagnostic capacity and 26 percent have essential medicines.

Across the five domains, the basic amenities mean score was the highest (78 percent) and the essential medicines mean score is the lowest (26 percent).

Health facilities from Dire Dawa and Harari regions had the highest general health service readiness index of 67 percent followed by Addis Ababa with 66 percent. In addition, referral hospitals had the highest general health service readiness index of 88 percent followed by general hospital with 85 percent and primary hospital with 74 percent. On the other hand, the government owned facilities have the highest general health service readiness index (59 percent) compared with the facilities under other managing authority (49 percent). There was no more difference between urban (56 percent) and rural (51 percent) health facilities.

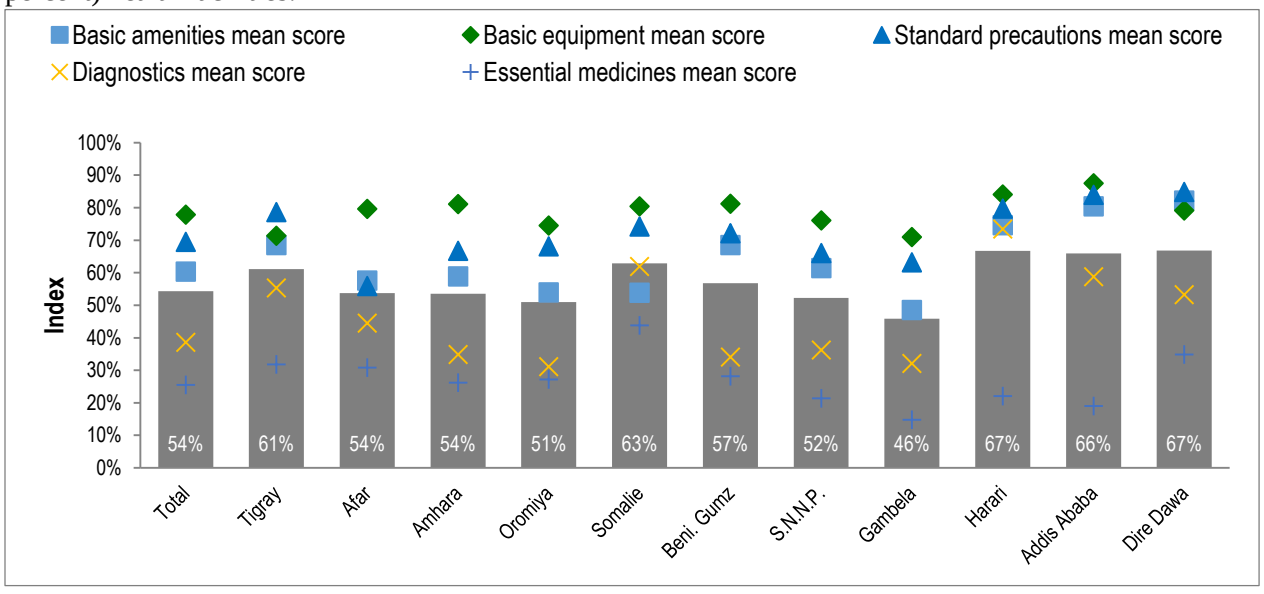


Figure 2.5.3 General service readiness index and domain scores, by region, *Ethiopia SARA 2016* (N=547)

3. Service Specific Availability and Readiness

3.1. Maternal health

3.1.1 Family Planning

Key findings
• Among all health facilities excluding health posts, ninety-four percent of them offered family planning services. • Urban health facilities had lesser availability of family planning service as compared to rural facilities (87% vs 95%). • Progestin-only contraceptive pills (86 percent), combined oral contraceptive pills (85 percent), and male condom (84 percent) were offered in most of the health facilities. • Ninety one percent of health centers were offering implant methods, none of the health posts were offering this contraceptive method.

Service availability

Among all health facilities, ninety-four percent of them offered family planning services. The availability of family planning service in health posts, and in facilities other than health post is 95 percent and 91 percent respectively. Furthermore, higher clinics were the least to offer family planning services (77 percent) while health centres offered the highest service (99 percent). (Table 3.1.1)

Family planning service was available in more than 90 percent of health facilities in Tigray, Amhara, Oromiya, Benishangul Gumuz, and SNNP regions. The highest availability (99 percent) of family planning service is observed in health facilities of Oromiya and Benishangul Gumuz regions; whereas the lowest availability (56 percent) is observed in health facilities of Somalie region. Similarly this service availability had variability by the managing authority and urban/rural setting of health facilities. Almost all (98 percent) government health facilities offered family planning services, while facilities managed by authorities other than government offered in 84 percent of them. Additionally urban health facilities had lesser availability of family planning service as compared to rural facilities (87 percent vs 95 percent).(Table 3.1.1)

Except IUCD and Sterilization methods of contraception all types of methods are expected to be offered in all types of health facilities. Progestin-only contraceptive pills (86 percent), combined oral contraceptive pills (85 percent), and male condom (84 percent) were offered in most of the health facilities. However, Cycle beads for standard day's method, Female condoms, Combined injectable contraceptives were not available in almost (> 98 percent) all health facilities. As a long acting family planning method, Implants were offered in 18 percent of all health facilities. While 91 percent of health centres were offering implant methods, none of the health posts were offering this contraceptive method. (Figure 3.1.1)

The other long acting and permanent family planning methods that were assessed in this survey were IUCD, female and male sterilization. Since health posts are not expected to offer these services, their availability in health facilities other than health posts were 49 percent, 6 percent and 4 percent respectively. Although all health centres are expected to offer IUCD, only 72 percent of health centres were observed to offer this contraceptive method. (Figure 3.1.1)

Table 3.1. 1 The percentage distribution of family planning services availability by region, Health facility type, managing authority and setting, Ethiopia SARA 2016.

Background Characteristics	Offers family planning	Combined oral	Progestin-only	Combined	Progestin-only	Male condoms	Female condoms	IUCD	Implant	Cycle beads for	Emergency	Male sterilizati	Female sterilizati	Total number of facilities
Regions														
Tigray	98%	91%	42%	5%	90	97	3	30	30	1	39	1%	1%	55

					%	%	%	%	%	%	%			
Afar	88%	72%	24%	7%	85 %	66 %	0 %	7%	14 %	1 %	49 %	0%	1%	51
Amhara	96%	91%	45%	0%	91 %	84 %	0 %	20 %	22 %	4 %	49 %	3%	3%	79
Oromiya	99%	87%	51%	0%	84 %	84 %	0 %	11 %	16 %	0 %	44 %	0%	0%	117
Somali	56%	48%	12%	0%	50 %	49 %	0 %	6%	10 %	0 %	36 %	0%	0%	60
Beni. Gumuz	99%	81%	69%	1%	93 %	88 %	6 %	10 %	10 %	0 %	46 %	0%	0%	45
S.N.N.P.	96%	88%	69%	5%	94 %	95 %	0 %	11 %	14 %	0 %	57 %	1%	3%	78
Gambella	88%	81%	23%	5%	79 %	82 %	1 %	7%	16 %	1 %	50 %	0%	0%	45
Harrari	71%	56%	36%	4%	61 %	53 %	0 %	26 %	22 %	4 %	40 %	6%	5%	35
Addis Ababa	73%	63%	30%	11 %	68 %	59 %	1 %	53 %	63 %	6 %	49 %	3%	7%	92
Dire Dawa	82%	82%	66%	0%	82 %	82 %	0 %	39 %	43 %	0 %	62 %	4%	5%	41
Facility type														
Referral hospital	91%	88%	72%	9%	91 %	81 %	3 %	84 %	91 %	3 %	88 %	56 %	69 %	32
General hospital	88%	86%	67%	9%	83 %	81 %	4 %	81 %	85 %	7 %	75 %	56 %	65 %	117
Primary hospital	87%	84%	56%	13 %	80 %	84 %	3 %	75 %	84 %	3 %	77 %	34 %	56 %	61
Health centre	99%	95%	62%	1%	93 %	94 %	0 %	72 %	91 %	1 %	77 %	4%	5%	165
Health post	95%	87%	52%	2%	85 %	84 %	0 %	0%	0%	1 %	40 %	0%	0%	138
Higher clinic	77%	67%	49%	1%	73 %	70 %	4 %	69 %	76 %	4 %	57 %	0%	6%	23
Medium clinic	89%	68%	36%	6%	80 %	72 %	0 %	53 %	53 %	3 %	60 %	6%	12 %	64
Lower clinic	82%	63%	31%	0%	82 %	78 %	0 %	8%	14 %	0 %	52 %	0%	0%	85
Managing authority														
Government	95%	88%	53%	2%	86 %	85 %	0 %	13 %	17 %	1 %	47 %	1%	1%	471
Other	84%	65%	35%	2%	81 %	76 %	0 %	25 %	30 %	1 %	55 %	2%	4%	227
Urban/Rural														
Urban	87%	77%	45%	2%	83 %	82 %	0 %	44 %	50 %	1 %	63 %	4%	6%	457
Rural	95%	87%	52%	2%	86 %	85 %	0 %	8%	11 %	1 %	44 %	1%	1%	241
Total	94%	85%	51%	2%	86 %	84 %	0 %	15 %	18 %	1 %	48 %	1%	2%	698

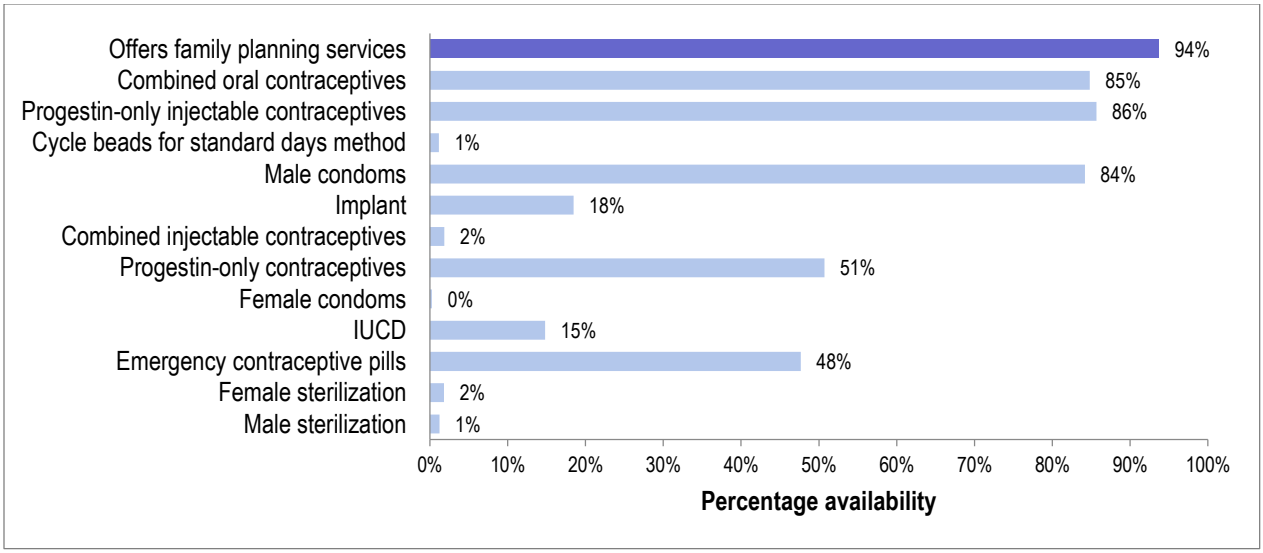


Figure 3.1.1 the availability of family planning methods, Ethiopia SARA 2016

Service readiness

Readiness of health facilities to provide family planning service was assessed based on the availability of the 8 tracer items under the category of trained staff and guidelines, equipment and, medicines and commodities. (Table 3.1.2)

Table 3.1.2 SARA tracer items for family planning service readiness, Ethiopia, SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines on family planning • Staff trained in family planning in the past two years • Family planning checklist and/or job aids
Equipment	• Blood pressure apparatus
Medicines & commodities	• Combined estrogen progesterone oral contraceptive pills • Progestin-only contraceptive pills • Injectable contraceptives • Condoms

Although, all health facilities are expected to be ready to provide family planning service only 7 percent of the facilities have fulfilled all the tracer items for readiness and on average the mean availability of the 8 tracer items is 64 percent. However, the availability of family planning commodities is above 75 percent except for progestin only contraceptive, which was available in only 33 percent of health facilities. On the other hand the low availability of family planning guidelines (38 percent) is counter balanced by relatively higher availability of family planning checklist and/or job aids (77 percent). In addition the availability of at least one trained staff on family planning was observed in less than 60 percent of health facilities (figure 3.1.2).

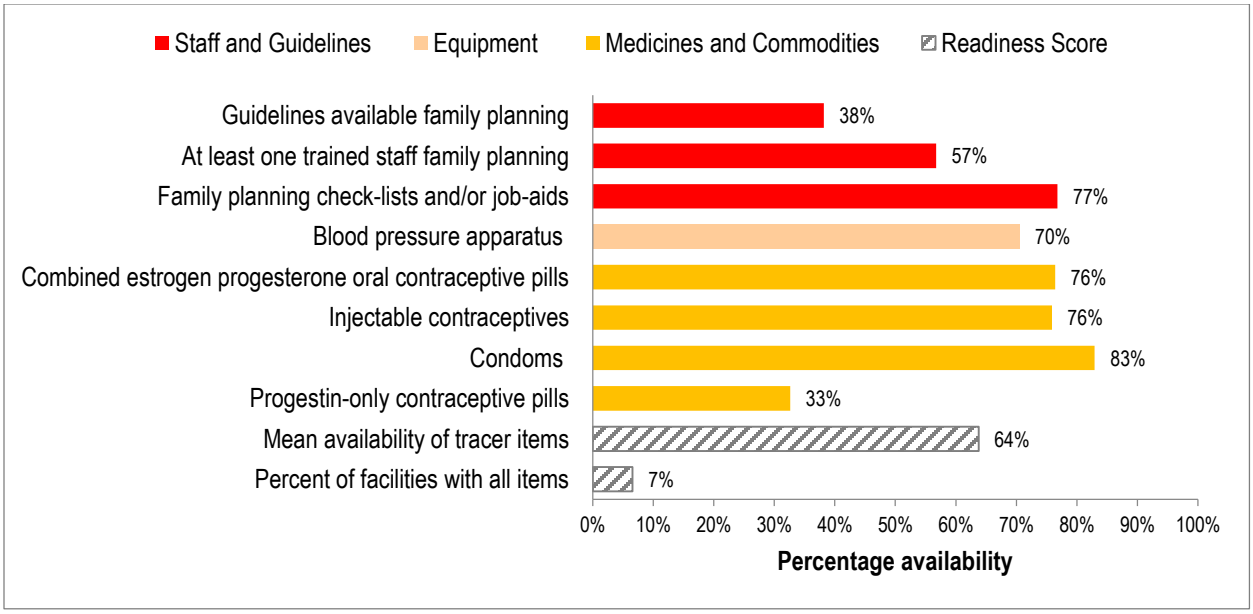


Figure 3.1.2 Percentage of facilities that have tracer items for family planning services among facilities that provide this service, Ethiopia SARA 2016

Looking into the readiness of health facilities across different regions trained staff and guidelines were available in less than one third health facilities of Afar and Gambela regions while more than half of health facilities in all the other regions had available trained staff and guidelines. On the other hand, the availability of BP apparatus was highest in Afar and Somalie regions (100 percent), and the lowest availability was observed in health facilities of Benishangul gumz region (47 percent). Additionally, except in Dire dawa city administration (only 11 percent) in the rest of the regions family planning commodities were not available in in more than 25 percent of their facilities (Table 3.1.2).

As the level of type of health facilities increase, the availability of the 8 family planning tracer items increases (see table 3.1.3). Health posts and lower clinics need to avail the family planning readiness tracer items in 38 percent and 44 percent of them respectively. However, the availability of family planning readiness racer items do not have that much difference between different managing authorities and urban/rural settings.

Table 3.1. 3 The percentage distribution of family planning service readiness tracer items availability by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016.

	Guidelines available family planning	Family planning check-lists and/or job-aids	At least one trained staff family planning	Blood pressure apparatus	Combined estrogen progesterone oral contraceptive pills	Progestin-only contraceptive pills	Injectable contraceptives	Condoms	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions											
Tigray	47%	86%	61%	70%	91%	32%	85%	92%	12%	70%	52
Afar	18%	51%	30%	100%	60%	22%	82%	57%	1%	53%	47

Amhara	45%	74%	72%	78%	87%	34%	77%	82%	11%	69%	76
Oromiya	39%	80%	55%	66%	83%	40%	72%	84%	7%	65%	105
Somali	26%	65%	57%	99%	74%	10%	86%	88%	9%	63%	39
Beni. Gumuz	42%	69%	46%	47%	50%	23%	55%	77%	1%	51%	43
S.N.N.P.	33%	78%	49%	64%	57%	24%	77%	82%	2%	58%	69
Gambella	10%	43%	41%	68%	86%	23%	76%	93%	6%	55%	39
Harrari	56%	90%	59%	84%	77%	39%	86%	63%	7%	69%	27
Addis Ababa	35%	75%	52%	100%	76%	40%	87%	73%	10%	67%	71
Dire Dawa	24%	91%	54%	100%	95%	77%	90%	96%	19%	78%	35
Facility type											
Referral hospital	38%	83%	69%	100%	100%	79%	97%	100%	17%	83%	29
General hospital	41%	84%	55%	99%	94%	67%	93%	96%	24%	79%	103
Primary hospital	36%	81%	58%	98%	98%	70%	94%	100%	13%	79%	53
Health centre	32%	70%	73%	93%	95%	49%	87%	93%	11%	74%	161
Health post	43%	80%	57%	60%	74%	29%	71%	81%	6%	62%	125
Higher clinic	51%	71%	50%	100%	85%	32%	94%	93%	0%	72%	19
Medium clinic	29%	87%	62%	100%	63%	42%	84%	68%	11%	67%	44
Lower clinic	15%	58%	21%	97%	62%	24%	89%	83%	0%	56%	69
Managing authority											
Government	41%	78%	60%	66%	78%	33%	74%	83%	7%	64%	430
Other	22%	66%	34%	98%	64%	30%	88%	80%	3%	60%	173
Urban/Rural											
Urban	31%	80%	52%	94%	82%	41%	86%	88%	10%	69%	382
Rural	40%	76%	58%	65%	75%	31%	74%	82%	6%	63%	221
Total	38%	77%	57%	70%	76%	33%	76%	83%	7%	64%	603

3.1.2 Antenatal Care

Key findings
• Antenatal care services (ANC) were available in 80 percent of Ethiopian health facilities. • The highest availability of ANC service (nearly 9 out of 10) in health facilities was observed in Afar, Benishangul Gumz, and Oromya regions. • Overall, none of the health facilities had all the ten tracer items for ANC service. However, considering the aggregate of the tracer items on average 41 percent of health facilities were ready for ANC service provision.

Service availability

Antenatal care services (ANC) were available in 80 percent of Ethiopian health facilities. The quality of ANC provision was assessed using four components of the service. Iron supplementation and tetanus toxoid vaccination were given in approximately three quarter of health facilities. However, folic acid supplementation and monitoring for hypertensive disorder of pregnancy were available in less than 60 percent of health facilities. (Table 3.1.3)

The highest availability of ANC service (nearly 9 out of 10) in health facilities was observed in Afar, Benishangul Gumz, and Oromya regions. On the other hand Addis Ababa and Gambela regions were observed with the least ANC service availability (41 and 39 percent respectively). (Table 3.1.3)

The availability of the overall ANC service in facilities managed by authorities other than the government was much lower compared to facilities managed by government (33 percent versus 88 percent). More over the discrepancy in ANC service availability by almost all components become exaggerated between clinics and the rest of health facility types. Except monitoring for hypertensive disorder of pregnancy in higher clinics, all of the components were much lower(less than 32 percent) in all types of clinics compared to the other health facility types (ranging from 58 to 96 percent). Similarly health facilities in urban setting had lower ANC service availability (55 percent) compared to health facilities in rural setting (87 percent). This discrepancy in the two setting applies to each of the four components of the ANC service. (Table 3.1.3)

Table 3.1. 4 The percentage distribution of Antenatal care service availability by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016

	Offers antenatal care	Iron supplementation	Folic acid supplementation	Tetanus toxoid vaccination	Monitoring for hypertensive disorder of pregnancy	Total number of facilities
Regions						
Tigray	83%	77%	51%	72%	62%	55
Afar	89%	81%	78%	56%	67%	51
Amhara	76%	69%	64%	62%	54%	79
Oromiya	88%	86%	61%	86%	64%	117
Somali	83%	83%	82%	72%	67%	60
Beni. Gumuz	89%	88%	86%	73%	60%	45
S.N.N.P.	77%	73%	40%	76%	57%	78
Gambella	39%	15%	25%	25%	31%	45
Harrari	67%	46%	46%	52%	52%	35
Addis Ababa	41%	35%	35%	27%	41%	92
Dire Dawa	69%	58%	57%	62%	62%	41
Facility type						
Referral hospital	91%	91%	91%	91%	88%	32

General hospital	92%	86%	86%	81%	90%	117
Primary hospital	90%	84%	84%	82%	90%	61
Health centre	98%	89%	82%	96%	91%	165
Health post	87%	86%	60%	83%	58%	138
Higher clinic	80%	31%	31%	25%	80%	23
Medium clinic	27%	13%	13%	9%	27%	64
Lower clinic	27%	10%	10%	2%	24%	85
Managing authority						
Government	88%	86%	64%	85%	64%	471
Other	33%	14%	15%	8%	32%	227
Urban/Rural						
Urban	55%	43%	37%	41%	50%	457
Rural	87%	84%	62%	82%	61%	241
Total	80%	76%	57%	74%	59%	698

Service readiness

Table 3.1.5. List of ANC service readiness tracer items, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained Staff & guidelines	• Guidelines on antenatal care service s (ANC) • ANC check-lists and/or job-aids • Staff trained in ANC in the past two years
Equipment	• Blood pressure apparatus
Diagnostics	• Hemoglobin • Urine-dipstick-protein
Medicines & commodities	• Iron tablets • Folic acid tablets • Tetanus toxoid vaccine • ITNs

The ANC service readiness of health facilities was assessed using ten tracer items categorized in four domains of Trained Staff & guidelines, Equipment, Diagnostics, and Medicines & commodities.

Overall, none of the health facilities had all the ten tracer items for ANC service. However, on average the mean availability of the 10 tracer items was 41 percent. Among the four domains the diagnostics ANC service readiness tracer domain was the least available (11%).This was reflected as only 8 percent and 15 percent availability in haemoglobin test and urine dipstick protein test respectively. The overall availability of the ANC service tracer items increases as the level of health facility type increases. There is no marked variability among the different regions and between urban and rural settings. However the minor difference of the urban and rural settings was due to the unavailability of diagnostic services in health posts and lower clinics, which are situated in the rural areas of the country. Moreover, mean available of the ANC service tracer items was more available in health facilities managed by government (42 percent) as compared to facilities managed by authorities other than government (29 percent).

Table 3.1.6 The percentage distribution of Antenatal care service readiness tracer items by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016

	Guidelines available antenatal care	ANC check-lists and/or job-aids	At least one trained staff antenatal care	Blood pressure apparatus	Haemoglobin test	Urine dipstick protein test	Iron tablets	Folic acid tablets	Tetanus toxoid vaccine	ITNs	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions													
Tigray	43	54	35	70	22	27	82	82	31	30	0	48	46
Afar	6	52	21	100	2	15	87	87	39	7	0	42	41
Amhara	52	69	37	71	8	16	72	61	40	34	0	46	64
Oromiya	30	49	37	63	7	12	63	60	36	20	0	38	95
Somali	2	50	54	86	4	14	59	46	48	58	1	42	47
Beni. Gumuz	29	54	25	47	4	6	77	77	33	37	0	39	36
S.N.N.P.	16	62	67	68	2	12	64	56	25	20	0	39	57
Gambella	8	51	35	89	12	35	55	55	43	41	0	42	24
Harrari	15	73	19	83	32	34	88	86	51	29	0	51	26
Addis Ababa	28	70	31	100	65	91	59	59	39	0	0	54	65
Dire Dawa	7	70	41	100	32	38	79	79	46	50	2	54	31
Facility type													
Referral hospital	41	83	45	100	62	100	97	100	66	10	3	70	29
General hospital	33	86	30	99	65	96	92	91	60	16	0	67	108
Primary hospital	24	73	31	98	47	95	95	100	53	24	2	64	55
Health centre	24	65	37	93	29	64	92	84	71	26	0	58	163
Health post	31	57	49	60	0	0	64	58	28	28	0	37	113
Higher clinic	27	53	10	100	65	99	19	19	10	0	0	40	16
Medium clinic	30	72	31	100	72	81	30	30	27	0	0	47	21
Lower clinic	0	10	9	100	0	2	2	2	1	0	0	13	27
Managing authority													
Government	30	58	46	67	6	13	69	63	36	27	0	42	414
Other	15	35	16	100	32	44	17	16	11	0	0	29	118
Urban/Rural													
Urban	24	60	27	93	38	66	70	62	44	17	1	50	330
Rural	30	56	47	65	3	7	65	60	34	27	0	39	202
Total	29	57	44	69	8	15	66	60	35	26	0	41	532

3.1.3 Basic Emergency and Essential Obstetric and Newborn care (BEm/EONC)

Key findings

- In general, 55 percent of health facilities excluding health posts provided delivery service. Furthermore, hospitals and health centers provided delivery service in more than 87 percent of them and 97 percent of health centers provided this service.
- The mean availability of BEmONC signal functions was 46 percent. The administration of parenteral anticonvulsants was available in less than one third of health facilities and assisted vaginal delivery was available in two out of five health facilities.
- The mean availability of EmNeC signal functions was 30 percent in health facilities excluding health posts.
- Among facilities that provide delivery service, none of them had all the 25 tracer items for Basic Emergency and Essential Obstetric and Newborn Care Service. However, on average 68 percent of the health facilities were ready to provide Basic Emergency and Essential Obstetric and Newborn Care Service.

Service Availability

In general, 55 percent of health facilities excluding health posts provided delivery service. Furthermore, hospitals and health centres provided delivery service in more than 87 percent of them and 97 percent of health centres provided this service. Although health posts are not expected to conduct delivery service overall, 9 percent of health posts offered delivery service. Moreover, monitoring and management of labour using partograph, and provision of oxytocine for the prevention of postpartum hemorrhage were available in 48 percent and 55 percent of health facilities excluding health posts. (Table 3.1.5)

There was marked difference in delivery service availability between health facilities other than health posts managed by the government (96 percent) and by authorities other than the government (11 percent). Similarly, the availability of delivery service was almost two times in health facilities found in rural settings (76 percent) as compared to facilities in urban settings (41 percent). Less than 36 percent of health facilities excluding health posts provided delivery service in Dire Dawa, Addis Ababa, Harari and Gambela regions. On the other hand more than 50 percent of health facilities excluding health posts provided delivery service in the rest of the regions, the highest was found in Somalie region (85 percent).

The availability of BEmONC services in health facilities excluding health posts was assessed using its seven signal functions parenteral administration of antibiotics, parenteral administration of oxytocics, parenteral administration of anticonvulsants, manual removal of placenta, manual removal of retained products, assisted vaginal delivery and neonatal resuscitation. The mean availability of BEmONC signal functions was 46 percent of these facilities. The administration of parenteral anticonvulsants was available in less than one third of health facilities and assisted vaginal delivery was available in two out of five health facilities. However, almost half of the health facilities had the other four signal functions. (Table 3.1.5).

Emergency Newborn care (EmNeC) services were assessed using five signal functions: Neonatal resuscitation, KMC for premature or very small babies, antibiotics for preterm or prolonged PROM, injectable antibiotics for neonatal sepsis, and corticosteroids in preterm labour. The mean availability of EmNeC signal functions was 30 percent in health facilities excluding health posts. In these facilities all EmNeC signal functions were available in more than 30%, except the 9% availability of corticosteroids for preterm labour. Additionally essential newborn care services were assessed, and the availability of immediate and exclusive breast feeding, and thermal protection were observed in more than half of the above facilities. However, hygienic cord care was available in only 26 percent of the above health facilities. (Table 3.1.5)

Table 3.1. 7 The percentage distribution of Basic Emergency and Essential Obstetric and Newborn Care services availability by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016

	Offers delivery services	Parenteral administration of antibiotics	Parenteral administration of oxytocic drugs	Parenteral administration of anti-convulsants	Assisted vaginal delivery	Manual removal of placenta	Manual removal of retained products	Mean availability of obstetric signal functions offered	Antibiotics for preterm or prolonged PROM	Neonatal resuscitation	Corticosteroids in preterm labour	KMC for premature/very small babies	Injectable antibiotics for neonatal sepsis	Mean availability of newborn signal functions offered	Administration of oxytocin for the prevention of post-partum haemorrhage	Monitoring and management of labour using partograph	Immediate and exclusive breastfeeding	Hygienic cord care	Thermal protection	Total number of facilities
Regions																				
Tigray	60	47	47	43	60	60	60	54	52	60	4	56	47	37	60	56	60	27	60	42
Afar	65	61	65	28	46	65	42	52	43	55	20	63	39	37	65	51	65	29	65	38
Amhara	59	45	59	30	45	59	59	51	33	59	13	45	30	30	59	53	59	12	59	61
Oromiya	63	59	59	35	41	63	63	55	48	63	4	62	34	35	63	52	63	36	59	99
Somali	85	79	85	73	42	84	79	74	78	74	21	58	68	50	84	63	85	51	64	43
Beni. Gumuz	51	48	47	22	41	51	51	44	44	47	9	47	44	32	47	44	51	24	51	30
S.N.N.P.	50	33	39	10	33	47	42	35	30	44	7	30	27	23	50	44	50	29	47	61
Gambella	23	19	23	12	23	23	23	21	15	23	4	18	15	12	23	19	23	12	21	30
Harrari	32	32	30	30	32	32	32	31	23	32	17	28	14	19	32	25	32	2	32	23
Addis Ababa	29	28	28	18	27	28	28	27	29	29	12	27	18	19	29	24	29	17	29	91
Dire Dawa	36	36	36	34	36	36	36	36	36	36	13	32	29	24	36	36	36	13	36	29
Facility type																				
Referral hospital	88	88	88	88	88	88	88	88	88	88	81	88	88	72	88	88	88	28	88	32
General hospital	93	92	93	79	91	93	92	91	92	93	81	85	84	73	93	81	93	34	93	117
Primary hospital	90	89	90	80	87	89	89	87	89	89	79	84	82	70	89	90	90	46	90	61
Health centre	97	80	90	48	68	96	94	82	66	95	9	83	53	51	97	87	97	44	92	165
Higher clinic	38	38	38	30	37	38	38	36	37	37	30	37	37	30	38	30	38	36	38	23
Medium clinic	19	19	13	0	13	19	13	13	18	13	7	7	13	10	19	6	19	12	19	64
Lower clinic	2	0	2	0	0	2	2	1	0	2	0	0	0	0	2	0	2	0	2	85
Managing authority																				
Government	96	79	88	49	68	94	92	81	66	94	12	82	53	51	96	86	96	43	91	320
Other	11	10	10	4	8	11	10	9	10	10	6	7	8	7	11	6	11	7	11	227
Urban/Rural																				
Urban	41	33	35	23	29	40	38	34	35	38	12	33	28	24	41	36	41	25	40	431
Rural	76	65	73	35	54	75	74	64	45	75	5	64	37	37	76	65	76	28	72	116
Total	55	46	51	28	39	55	53	46	39	54	9	46	31	30	55	48	55	26	53	547

Service Readiness

Health Facilities excluding health posts were analysed for readiness to provide Basic Emergency and Essential Obstetric and Newborn Care Services in this assessment. This readiness to offer basic obstetric care services was done based on the availability of the 25 tracer items categorized in three domains shown in table 3.1.8.

Table 3.1.8 List of Basic obstetric and newborn care Service readiness service readiness tracers' items, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines for essential childbirth care • Guidelines for essential newborn care • Staff trained in essential childbirth care in the past two years • Staff trained in newborn resuscitation in the past two years • Check-lists and/or job-aids for essential childbirth care
Equipment	• Emergency transport • Sterilization equipment • Examination light • Delivery pack • Suction apparatus (mucus extractor) • Manual vacuum extractor • Vacuum aspirator or D&C kit • Neonatal bag and mask • Delivery bed • Partograph • Gloves • Infant weighing scale • Blood pressure apparatus • Soap and running water OR alcohol based hand rub
Medicines & commodities	• Antibiotic eye ointment for newborn • Injectable uterotonic • Injectable antibiotic • Magnesium sulphate (injectable) • Skin disinfectant • Intravenous solution with infusion set

Among facilities that provide delivery service, none of them had all the 25 tracer items for Basic Emergency and Essential Obstetric and Newborn Care Service. However, on average the mean availability of the 25 tracer items to provide Basic Emergency and Essential Obstetric and Newborn Care Service was 68 percent. More than three fourth of the health facilities had equipment, medicines and other commodities for the service. On the other hand, only 38 percent of the facilities had trained staff and guidelines.

All the tracer items in the equipment domain were available above 52 percent except vacuum aspirator/D and C, which was available in only 37 percent of the health facilities. Delivery bed, delivery pack, infant weighing scale and gloves were available in almost all health facilities (greater than 95 percent). Partograph and emergency transport were available in more than 80 percent of health facilities. Moreover, the availability of medicines showed that magnesium sulphate (injectable) was not available in 64 percent of the health facilities while 83 percent of them had injectable uterotonic. (See figure 3.1.3)

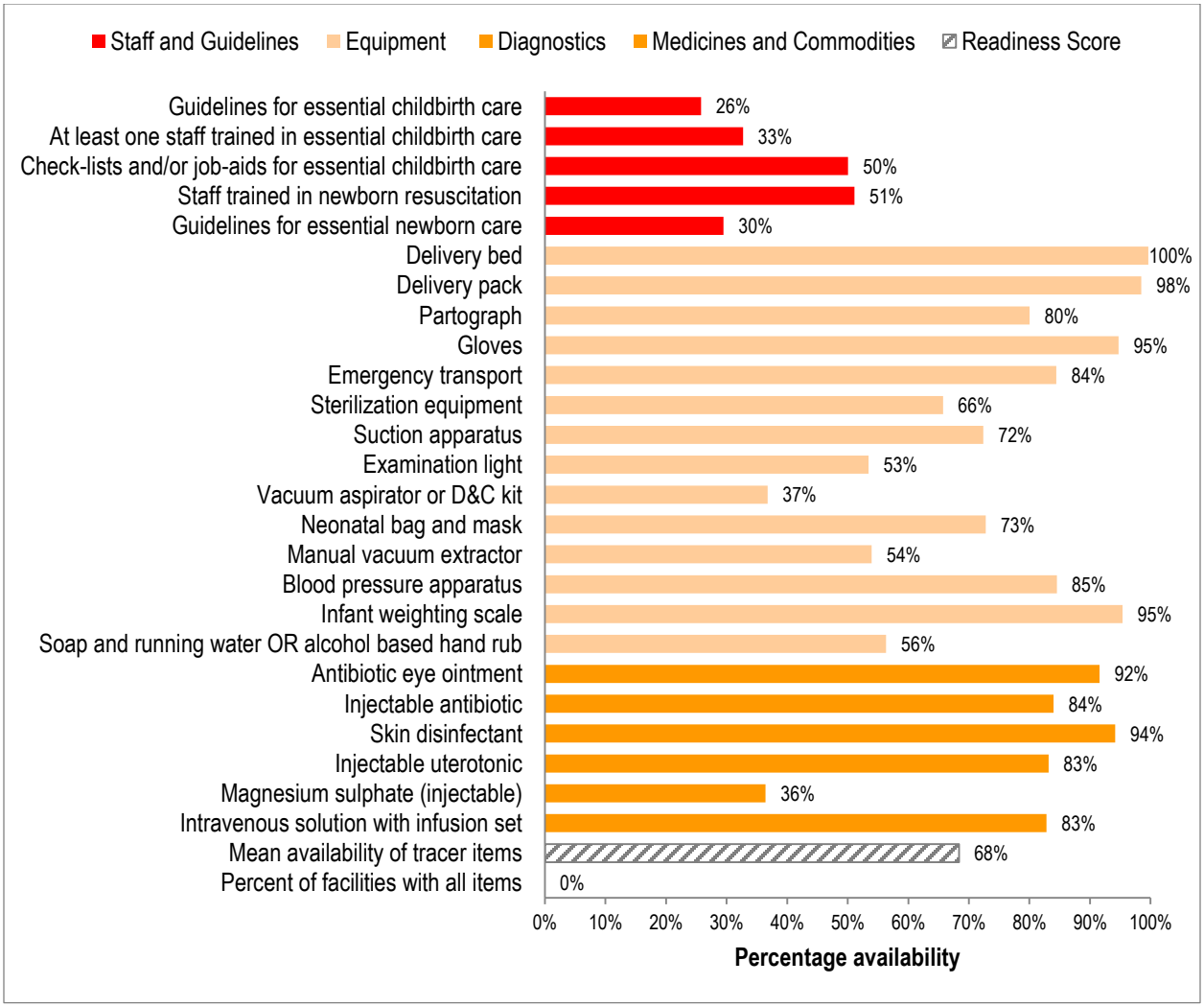


Figure 3.1.3 Percentage of facilities excluding health posts that have tracer items for basic emergency and essential obstetric and new born care among facilities that provide delivery services, Ethiopia SARA 2016

There was no marked regional discrepancy in terms of the overall readiness score. However, the availability of guidelines for essential child birth care and new born care were less than 20 percent in Afar, Somali, and SNNP as compared to other regions. On the other hand in health facilities of Tigray and Benishangul Gumuz regions the availability of these guidelines were more than 50 percent. Moreover the overall availability of the readiness tracer items was more than two third of the health facilities excluding medium/lower clinics and health post (Table 3.1.6).

Table 3.1. 9 The percentage distribution of Basic Emergency and Essential Obstetric and Newborn Care services reediness by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016.

	Guidelines for essential childbirth care	Check-lists and/or job-aids for essential childbirth care	Guidelines for essential newborn care	At least one staff trained in essential childbirth care	Staff trained in newborn resuscitation	Emergency transport	Sterilization equipment	Examination light	Delivery pack	Suction apparatus	Manual vacuum extractor	Vacuum aspirator or D&C kit	Neonatal bag and mask	Delivery bed	Partograph	Gloves	Infant weighting scale	Blood pressure apparatus	Soap and running water OR alcohol based hand rub	Antibiotic eye ointment	Injectable uterotonic	Injectable antibiotic	Magnesium sulphate (injectable)	Skin disinfectant	Intravenous solution with infusion set	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions																												
Tigray	62	70	85	33	55	92	71	70	100	86	79	49	100	100	93	100	100	78	57	93	100	100	70	100	100	0	82	29
Afar	14	20	3	37	31	87	58	45	85	60	48	35	42	100	79	94	66	94	33	73	79	91	26	100	88	0	60	22
Amhara	26	46	31	45	55	85	56	41	100	80	46	41	46	100	80	100	90	90	66	95	85	80	17	100	85	0	68	46
Oromiya	25	47	31	25	54	88	54	47	100	59	55	36	84	100	82	100	100	88	41	88	88	79	43	88	83	0	67	77
Somali	14	29	20	42	72	88	45	81	100	50	31	13	73	94	80	93	94	94	60	93	94	88	74	88	88	0	68	29
Beni. Gumuz	53	55	53	30	48	72	80	61	100	86	59	48	93	94	93	81	93	75	94	87	80	93	30	100	68	0	73	17
S.N.N.P.	18	59	12	18	30	71	94	60	94	83	54	31	77	100	71	77	94	66	60	94	60	89	31	94	71	0	64	43
Gambella	41	72	35	65	65	79	65	52	100	38	38	38	72	100	65	93	100	100	79	65	93	93	65	100	86	0	72	15
Harrari	41	52	33	46	65	100	100	80	100	74	87	59	100	100	72	100	100	100	80	87	100	87	65	78	72	0	79	13
Addis Ababa	34	61	34	64	73	98	96	87	98	98	78	52	87	100	82	100	100	98	88	96	100	91	37	100	96	0	82	60
Dire Dawa	27	87	47	60	73	89	93	80	100	67	76	51	91	100	100	100	100	100	87	95	95	89	21	100	100	0	81	17
Facility type																												
Referral hospital	46	68	46	71	82	96	100	82	100	96	82	89	89	96	96	100	100	96	86	100	100	100	96	100	96	0	89	28
General hospital	41	71	51	55	61	94	99	89	100	94	93	86	89	100	87	100	100	98	95	95	97	97	72	100	99	0	87	109
Primary hospital	40	65	49	45	56	95	96	95	100	91	89	78	84	100	98	98	98	98	85	96	100	100	82	100	96	0	85	55
Health centre	24	50	28	34	55	85	62	47	98	70	51	32	77	100	83	95	98	84	52	92	84	88	37	93	81	0	68	161
Higher clinic	41	77	41	21	20	59	100	100	98	98	80	80	38	100	78	100	98	100	96	97	98	57	21	100	100	0	76	9
Medium clinic	35	33	33	0	0	69	100	100	100	67	67	67	2	100	33	69	67	69	69	100	35	33	0	98	98	0	58	4
Lower clinic	0	0	0	0	0	94	0	94	100	94	0	0	0	100	0	100	0	100	100	6	94	0	0	100	100	0	43	2
Managing authority																												
Public	25	50	29	34	55	86	63	48	98	71	53	34	78	100	83	95	98	84	53	92	84	88	39	94	81	0	69	298
Private	35	50	35	17	18	74	86	99	99	86	62	61	28	100	51	88	73	88	86	86	73	47	14	99	99	0	66	70
Urban/Rural																												
Urban	22	48	30	23	46	79	84	82	97	78	61	51	70	100	84	97	91	81	62	94	81	86	47	96	88	0	71	284
Rural	29	51	29	40	55	89	52	32	100	68	49	26	75	99	77	93	99	87	52	90	85	82	28	92	79	0	66	84
Total	26	50	30	33	51	84	66	53	98	72	54	37	73	100	80	95	95	85	56	92	83	84	36	94	83	0	68	368

3.1.4 Comprehensive obstetric care

Key findings
• Considering the nine signal functions the availability of CEmNOC in hospitals and higher clinics was 73 percent and 7 percent respectively • In general, the availability of Caesarean section(C/S), and blood transfusion service among all hospitals were 86 percent, and 82 percent respectively. However, the availability of each of the C/S and blood transfusion service was only 8 percent in higher clinics. • Among facilities that provided caesarian section, only one percent of them had all the 20 tracer items for Comprehensive Emergency and Essential Obstetric and Newborn Care Service. However, on average 64 percent of the health facilities were ready to provide Comprehensive Emergency and Essential Obstetric and Newborn Care Service

Service Availability

All hospitals are expected to provide Comprehensive obstetric and new born care. In general, the availability of Caesarean section(C/S) and blood transfusion service among all hospitals were 86 percent and 82 percent respectively. However, the availability of each of the C/S and blood transfusion service was only 8 percent in higher clinics (figure 3.1.4). Considering the nine signal functions the availability of CEmNOC in hospitals and higher clinics was 73 percent and 7 percent respectively. (Table 3.1.7 and Figure 3.1.4)

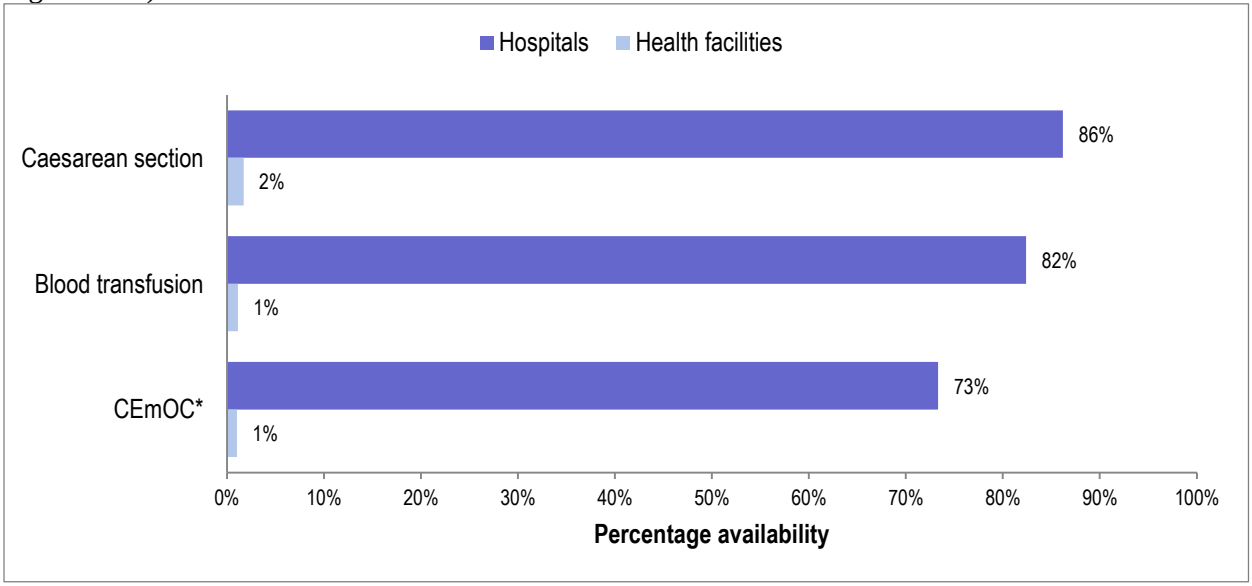


Figure 3.1.4 Percentage distribution of facilities that offer comprehensive obstetric care services, Ethiopia SARA 2016

Table 3.1. 10 The percentage distribution of Comprehensive Emergency and Essential Obstetric and New born Care services availability by region, facility type, managing authority and Urban/Rural Setting, Ethiopia SARA 2016

	Caesarean section	Blood transfusion	CEmOC*	Total number of facilities
Regions				
Tigray	4%	4%	3%	42
Afar	3%	2%	2%	38
Amhara	4%	4%	4%	61
Oromiya	2%	2%	2%	99
Somali	5%	6%	4%	43
Beni. Gumuz	2%	2%	2%	30

S.N.N.P.	4%	1%	1%	61
Gambella	1%	1%	1%	30
Harrari	8%	8%	8%	23
Addis Ababa	8%	9%	7%	91
Dire Dawa	7%	10%	5%	29
Facility type				
Referral hospital	88%	88%	88%	32
General hospital	90%	90%	74%	117
Primary hospital	79%	66%	64%	61
Health centre	3%	2%	1%	165
Higher clinic	8%	8%	7%	23
Medium clinic	0%	0%	0%	64
Lower clinic	0%	0%	0%	85
Managing authority				
Public	6%	4%	4%	320
Private	2%	2%	2%	227
Urban/Rural				
Urban	7%	5%	5%	431
Rural	0%	0%	0%	116
Total	4%	3%	3%	547

Service readiness

Readiness to provide Comprehensive obstetric care service was assessed based on the presence of the seventeen tracer items in Table 3.1.11.

Table 3.1.11 List of Comprehensive obstetric care service readiness tracers' items, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained Staff & guidelines	• Guidelines for CEmOC • Staff trained in CEmOC • Staff trained in surgery • Staff trained in anesthesia
Equipment	• Anaesthesia equipment • Incubator • Oxygen • Resuscitation table • Spinal needle
Diagnostics	• Blood typing • Cross match testing
Medicines & commodities	• Blood supply sufficiency • Blood supply safety • Lidocaine 5% • Epinephrine (injectable) • Halothane (inhalation) • Atropine (injectable) • Thiopental (powder)

	• Suxamethonium bromide (powder) • Ketamine (injectable)

Among facilities that provided caesarean section, only one percent of them had all the 20 tracer items for Comprehensive Emergency and Essential Obstetric and Newborn Care Service. However, on average the mean availability of the 20 tracer items to provide Comprehensive Emergency and Essential Obstetric and Newborn Care Service was 64 percent. Almost all of them had staff trained in Anaesthesia and surgery (98 percent and 99 percent respectively). On the other hand, only 18 of them had available guidelines for CEmONC. (See table 3.1.10)

Only a quarter of facilities that provided caesarean section had anaesthesia equipment. However, except thiopental, the other general anaesthesia drugs (epinephrine, suxamethonium bromide, ketamine, and halothane) were available in more than two third of these facilities. But lidocaine 5% was not available in almost two third of these facilities. Furthermore, oxygen (concentrator or cylinder) and incubator were available in 62 percent and 58 percent of these facilities. (See figure 3.1.5)

Blood and blood component therapy are key to provide the minimum requirement for CEmONC service. Although, 82 percent of facilities that provided caesarean section do blood typing, cross matching test was done in only 21 percent of them. More over safe blood supply is available in 73 percent of these facilities. Whereas the supply of blood was sufficient in only 32 percent of them. (See figure 3.1.5)

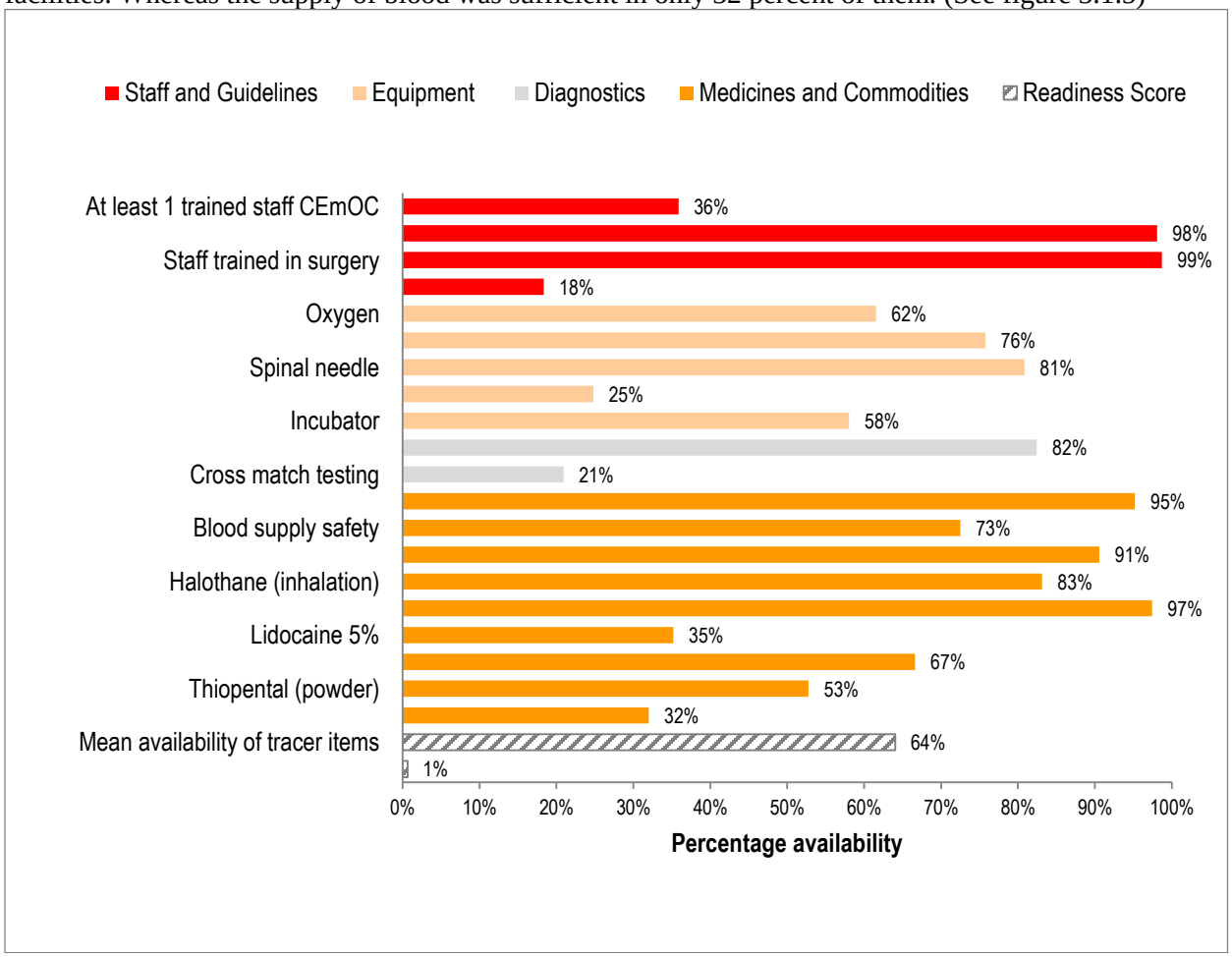


Figure 3.1.5 Percentage of facilities that have readiness tracer items for comprehensive obstetric care services among facilities that provide caesarean section, Ethiopia SARA 2016

Table 3.1. 12 Percentage of facilities that have readiness tracer items for comprehensive obstetric care services among facilities that provide caesarean section, Ethiopia SARA 2016

	Guidelines available CEmOC	At least 1 trained staff CEmOC	Staff trained in surgery	Staff trained in anaesthesia	Anaesthesia equipment	Resuscitation table	Incubator	Oxygen	Spinal needle	Blood typing	Cross match testing	Blood supply sufficiency	Blood supply safety	Lidocaine 5%	Epinephrine (injectable)	Halothane (inhalation)	Atropine (injectable)	Thiopental (powder)	Suxamethonium bromide (powder)	Ketamine (injectable)	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions																							
Tigray	47	53	93	87	47	93	73	53	100	100	27	67	80	73	93	100	100	93	73	100	0	78	15
Afar	67	67	100	100	100	100	67	33	100	100	33	33	33	67	100	100	100	100	100	100	0	80	3
Amhara	16	19	100	100	16	97	91	89	96	97	13	20	94	13	99	99	99	29	91	99	0	69	27
Oromiya	18	21	98	98	26	81	39	58	91	100	21	26	75	32	95	100	86	96	96	100	0	68	57
Somali	42	67	100	92	17	68	59	50	100	100	0	17	75	67	84	84	75	67	68	92	0	66	10
Beni. Gumuz	50	50	100	100	50	100	50	0	100	100	100	0	100	100	100	100	100	100	100	100	0	80	2
S.N.N.P.	7	75	99	99	12	29	23	19	34	30	9	8	28	13	100	34	100	25	26	99	0	43	27
Gambella	100	100	100	100	100	100	100	100	0	100	0	0	100	100	100	100	100	100	100	100	0	85	1
Harrari	0	25	100	100	75	100	50	100	100	100	50	75	25	50	100	100	75	100	100	100	0	76	4
Addis Ababa	19	7	98	98	33	93	70	86	100	100	44	77	98	74	61	100	98	54	45	91	2	72	36
Dire Dawa	50	75	100	100	100	100	100	100	75	100	50	50	100	75	100	100	75	100	100	100	25	88	4
Facility type																							
Referral hospital	32	50	100	96	61	86	75	64	89	96	57	54	82	46	100	100	96	93	89	96	0	78	28
General hospital	30	30	98	97	47	90	56	62	95	98	41	49	89	51	97	99	91	90	86	95	2	75	105
Primary hospital	33	29	96	96	23	83	50	63	96	96	13	23	65	38	96	100	94	88	79	96	0	68	48
Health centre	0	48	100	100	0	52	52	52	52	52	0	0	52	0	100	52	100	0	52	100	0	48	2
Higher clinic	0	7	100	100	0	85	85	93	100	100	0	85	93	93	7	93	93	7	0	100	0	62	3
Managing authority																							
Public	18	44	99	97	19	73	56	54	75	77	14	21	67	22	98	79	96	51	72	99	0	61	132
Private	21	10	97	100	43	85	65	85	99	99	41	67	88	76	69	96	94	59	49	94	3	72	54
Urban/Rural																							
Urban	17	35	99	98	23	75	57	62	80	82	21	32	72	34	90	83	95	52	66	98	1	64	176
Rural	50	60	90	90	70	100	80	40	100	90	10	40	100	70	100	100	100	80	80	90	0	77	10
Total	18	36	99	98	25	76	58	62	81	82	21	32	73	35	91	83	95	53	67	97	1	64	186

3.2 Child and adolescent health

3.2.1 Child health

In an effort to improve standard of child health services, WHO and other agencies developed the Integrated Management of Childhood Illness (IMCI) strategy (WHO, 1997). This strategy advocates using every visit to a health care provider as an opportunity, not only to conduct a full assessment of the child's current health and possible underlying problems, but also to provide interventions, such as vaccination that can prevent illness or minimise its progression.

The IMCI strategy aims to reduce morbidity and mortality among children under age five years through improving health workers' skills through training and supportive supervision; improving health systems, including equipment, supplies, organisation of work, and referral systems and improving child care at the community and household levels in line with key family practices.

Training and supportive supervision, through a holistic approach, help health workers assess and appropriately treat major childhood illnesses (including acute respiratory infections, diarrhoea, malaria, measles, and other severe infections). WHO recommends that at least 60 percent of providers need to be trained in IMCI case management to ensure a critical mass for proper management of sick children.

IMCI has already been introduced in more than 75 countries around the world. In Ethiopia, Integrated Management of New born and Childhood Illness (IMNCI) is currently being delivered through health centres and some hospitals. At Health post level it is referred as integrated community case management (ICCM), mainly focusing on community management of pneumonia, diarrhoea, malaria, and sever acute uncomplicated malnutrition and referral of sever case.

To improve health outcomes, it is necessary for the target population to be able to access health services at health facilities, and for the health facilities to be in a state of "readiness" to provide these health services.

The 2016 Ethiopia SARA assessed the availability of three basic child health services: out-patient curative care for sick children, routine childhood vaccination services under EPI, and routine growth monitoring services in all health facilities including health posts

Key Findings
• Availability of child immunization services was generally high (80 percent) except facilities in Addis Ababa (21 percent), ranging from 54 percent of facilities in Gambella region to 90 percent of facilities in Benishangul Gumuz region. • Sixteen percent of facilities offered immunization services only in daily basis at the facility. • Majority of facilities had disposable or auto-disable syringes (89 percent) and sharps container (95 percent). • Refrigerators and cold boxes was also available in 31 and 71 percent of health facilities, respectively. • Availability of the six antigens ranged between 29 percent for Oral Polio Vaccine to 36 percent for measles. • Over all the availability of child health services was high (73 percent and above), except the availability of iron supplementation (44 percent). • Availability of average number of tracer items for child curative care and growth monitoring is moderate (49 percent). • In general six in ten facilities in Ethiopia offer adolescent health service. • Provision of ART treatment (5 percent) and provision of intrauterine contraceptive device (IUCD) (11 percent) and HIV testing and counselling (18 percent) to adolescents are the least provided services among adolescent health services.

Child health: routine immunization

Child immunization is one of the most cost-effective health interventions, providing protection to children against vaccine-preventable diseases. The Expanded Programme on Immunization (EPI) has been notably increasing in Ethiopia, achieving immunization coverage rates ranging 66 - 68 percent for DTP3 and measles and 80 percent for BCG for children 12-23 months in 2012 (EPHI, 2012).

Service availability

Figure 3.2.1 shows the percentage of facilities offering child immunization services by region. Eight in ten health facilities in Ethiopia offer child immunization service.

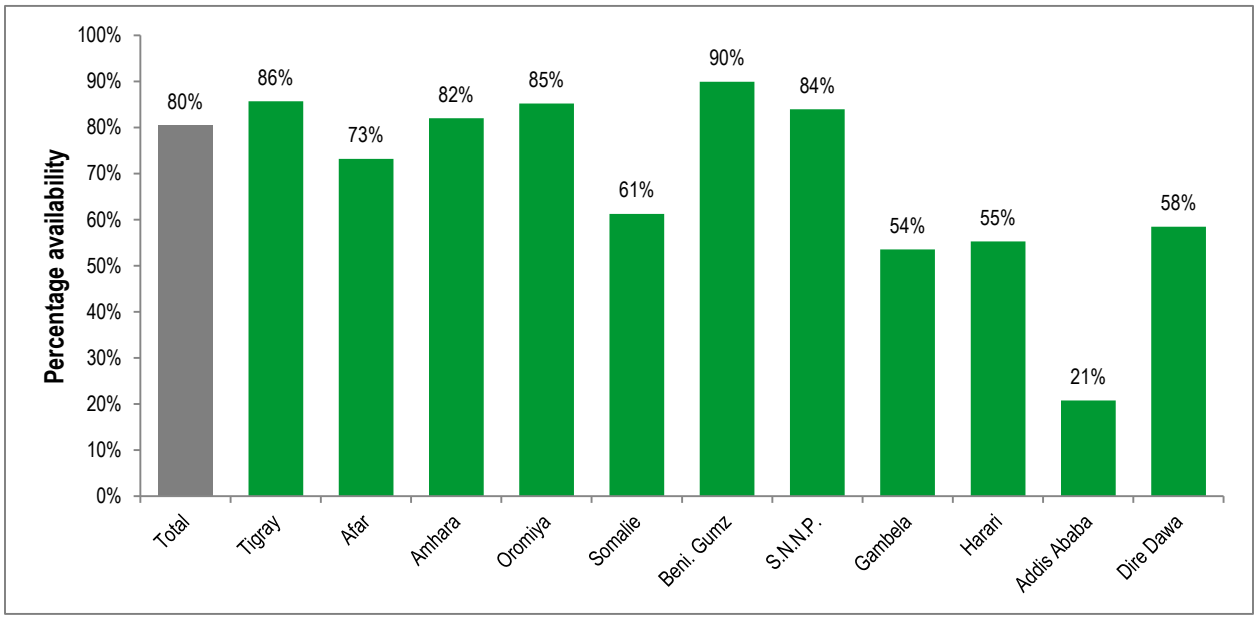


Figure 3.2.1 Percentage of facilities that offer child immunization services, by region, Ethiopia SARA 2016 (N=698)

Availability of child immunization services at national level was generally high (80 percent), ranging from 21 percent of facilities in Addis Ababa region to 90 percent of facilities in Benishangul Gumuz region. The lower percentage of facilities in Addis Ababa and other urban regions was due to private facilities that did not offer child immunization services in urban areas: Comparing between managing authorities, 94 percent of public facilities offered child immunization services, compared with 2 percent of private facilities. Sixteen percent of health facilities offered immunization services only in daily basis at the facility.

Table 3.2 1 Percentage of facilities that have child immunization service available by background characteristics, Ethiopia SARA 2016

	Offers child immunization services	Birth doses	Infant vaccines	Adolescent/adult vaccines	Child immunizations offered daily in facility	Child immunizations offered weekly in facility	Child immunizations offered monthly in facility	Child immunizations offered quarterly in facility	Child immunizations offered other basis in facility	Child immunizations offered daily as outreach	Child immunizations offered weekly as outreach	Child immunizations offered monthly as outreach	Child immunizations offered quarterly as outreach	Child immunizations offered other basis as outreach	Total number of facilities
Regions															

Tigray	86	45	54	47	20	2	42	0	22	2	5	44	0	36	55
Afar	73	46	39	38	26	29	7	0	11	0	8	37	7	21	51
Amhara	82	45	45	51	12	9	38	0	23	1	18	45	0	18	79
Oromiya	85	38	59	54	17	22	36	0	9	0	2	51	0	32	117
Somali	61	30	36	37	42	16	2	0	2	0	11	14	11	26	60
Beni. Gumuz	90	34	47	41	12	0	72	0	6	12	0	58	1	19	45
S.N.N.P.	84	67	77	71	10	14	36	0	24	0	22	42	0	20	78
Gambella	54	29	33	22	6	10	34	3	0	0	4	39	5	5	45
Harrari	55	37	38	38	16	26	11	0	2	4	11	25	0	16	35
Addis Ababa	21	0	0	1	17	1	0	0	3	1	1	1	1	16	92
Dire Dawa	58	40	41	44	20	6	26	0	6	1	12	32	1	11	41
Facility type															
Referral hospital	81	0	0	0	69	13	0	0	0	6	0	0	0	75	32
General hospital	78	5	5	3	63	12	0	0	3	6	3	1	1	68	117
Primary hospital	69	5	8	8	39	18	3	0	8	5	5	0	3	56	61
Health centre	93	46	53	54	51	19	19	0	5	2	23	29	3	36	165
Health post	94	55	69	66	11	18	45	0	21	0	11	56	1	27	138
Higher clinic	7	0	0	0	0	1	0	0	6	0	0	0	0	7	23
Medium clinic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Lower clinic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85
Managing authority															
Government	94	53	66	63	18	18	40	0	18	1	13	50	1	28	471
Other	2	0	0	0	1	0	0	0	1	0	0	0	0	2	227
Urban/Rural															
Urban	38	12	15	15	22	7	8	0	1	1	6	8	2	20	457
Rural	91	53	66	63	14	17	40	0	19	0	12	52	1	26	241
Total	80	45	56	54	16	15	34	0	15	1	11	43	1	25	698

Service readiness

Facilities offering child immunization services were assessed on their readiness to provide the service based on the availability of tracer items. Table 3.2.2 shows the availability of tracer items for child immunization by region, managing authority, and facility type, as well as the percentage of facilities with all items.

Majority of facilities had disposable or auto-disable syringes (89 percent) and sharps container (95 percent). Refrigerators and cold boxes were also available in 31 and 71 percent of health facilities, respectively. Availability of the six antigens ranged between 29 percent for OPV to 36 percent for measles.

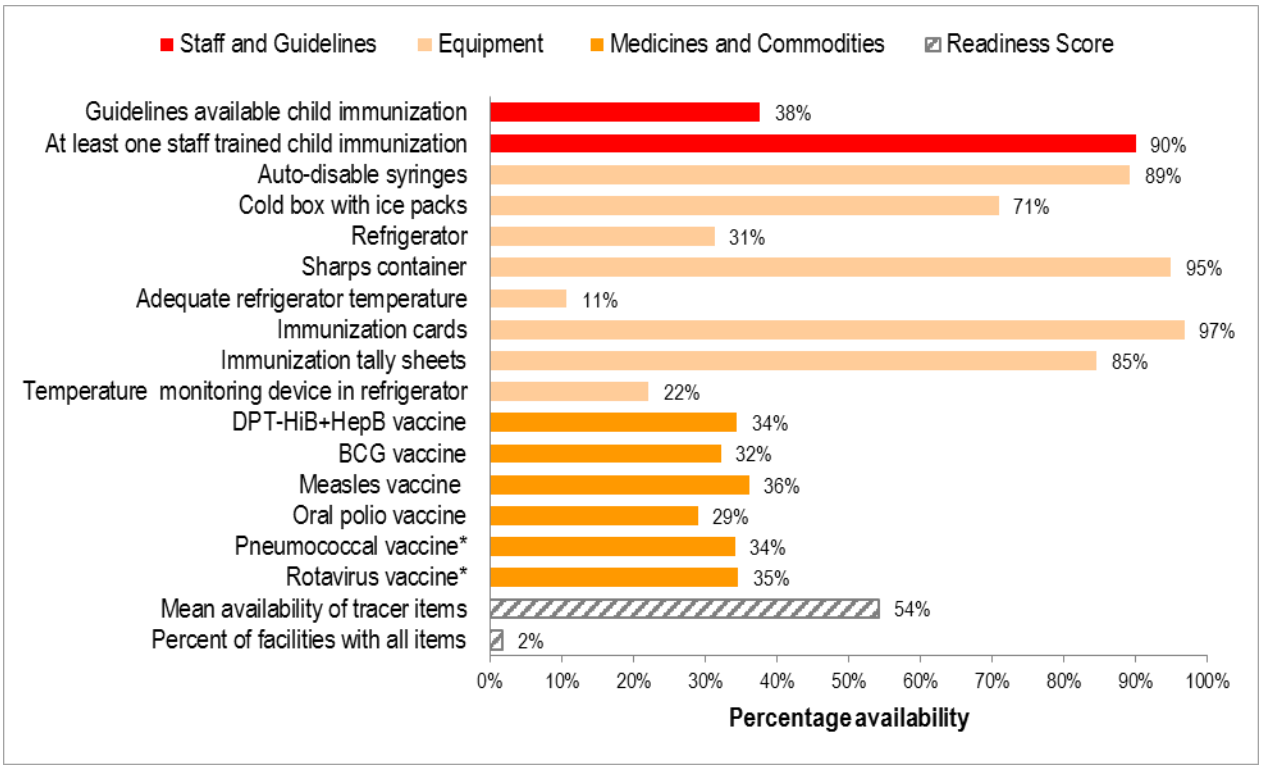


Figure 3.2.2 Percentage of facilities that have tracer items for child immunization services among facilities that provide this service, Ethiopia SARA 2016 (N=446)

Mean tracer items availability is found to be 54 percent among facilities that provide immunization service. Figure 3.2.3 shows the readiness scores by region, as well as the mean availabilities of items by domain. Availability of medicines and commodity items are consistently low (less than 50 percent) across regions except in Somali, Addis Ababa, Harari, and Dire Dawa.

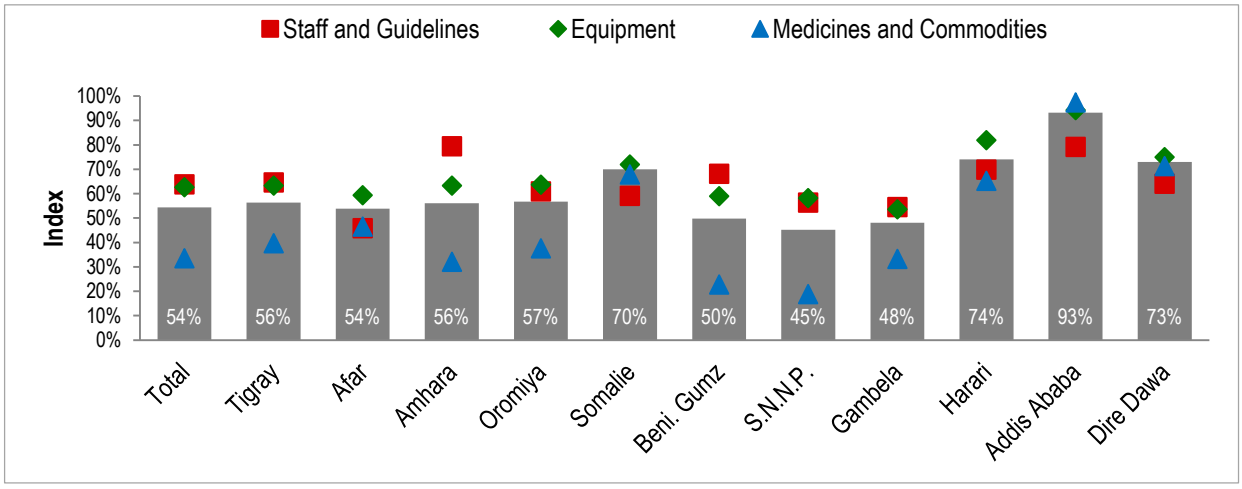


Figure 3.2.3 Percentage of facilities that have tracer items for child immunization services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=446)

Child health: curative care and growth monitoring

Service availability

Table 3.2.2 shows the percentage of facilities offering key child health services including preventive and curative care for sick children, growth monitoring, vitamin A supplementation, iron supplementation, treatment of pneumonia, treatment of malaria, ORS and zinc supplementation, and diagnosis and treatment of child malnutrition.

Table 3.2 2 Child health preventative and curative care availability by Background characteristics, Ethiopia SARA 2016

	Offers preventive and curative care for U-5s	Diagnosis/treat malnutrition	Vitamin A supplementation	Iron supplementation	ORS and zinc supplementation to children with diarrhoea	Child growth monitoring	Treatment of pneumonia	Treatment of malaria in children	Total number of facilities
Regions									
Tigray	99	95	85	27	97	83	97	92	55
Afar	98	97	79	31	61	72	92	98	51
Amhara	93	83	80	34	88	78	87	81	79
Oromiya	86	69	79	55	61	66	75	61	117
Somalie	94	62	86	68	75	60	89	88	60
Beni. Gumuz	98	98	83	25	98	92	98	97	45
S.N.N.P.	97	92	81	38	73	86	86	71	78
Gambella	100	88	39	51	72	35	100	94	45
Harrari	82	82	68	35	68	62	59	78	35
Addis Ababa	76	63	29	31	44	37	69	74	92
Dire Dawa	73	69	65	46	72	57	73	70	41
Facility type									
Referral hospital	84	84	69	63	75	81	84	84	32
General hospital	88	86	62	59	79	80	88	86	117
Primary hospital	90	90	69	66	82	79	90	90	61
Health centre	98	96	91	42	78	93	98	95	165
Health post	93	82	91	51	75	81	83	73	138
Higher clinic	73	71	22	21	45	29	57	58	23
Medium clinic	89	57	6	25	66	36	84	88	64
Lower clinic	69	42	7	10	51	5	57	33	85
Managing authority									
Government	94	84	90	49	75	83	86	77	471
Other	75	49	10	16	55	16	65	50	227
Urban/Rural									
Urban	85	66	38	28	64	46	77	69	457
Rural	93	83	88	48	75	80	84	74	241
Total	91	79	79	44	73	73	83	73	698

In general, the availability of child health services was high (73 percent and above) except the availability of iron supplementation (44 percent). Most facilities (91 percent) offered child curative care. Public facilities (94 percent) are more likely to provide child preventive and curative care services, compared with 75 percent of private facilities. About eight in ten facilities are offering Treatment of Child Malnutrition and vitamin A supplementation.

Service readiness

Facilities offering child health services were also assessed on their readiness to provide curative care and growth monitoring for children based on the availability of the 19 tracer items. Table 3.2.3 shows the availability of tracer items for child health preventive and curative care by region, managing authority, and facility type, as well as the percentage of facilities with all 19 items.

Availability of average number of tracer items for child health preventive and curative care is moderate (49 percent): all equipment items were available in 64 percent of facilities providing child health services, and most medicines and commodities were available in 44 percent of facilities. Diagnostics item were available in less than one-third of facilities. Figure 3.2.4 shows the readiness scores (mean availability of the 19 tracer items) and the mean availabilities of items by domain. Domain scores for equipment and staff and guidelines were consistently higher than medicines and commodities.

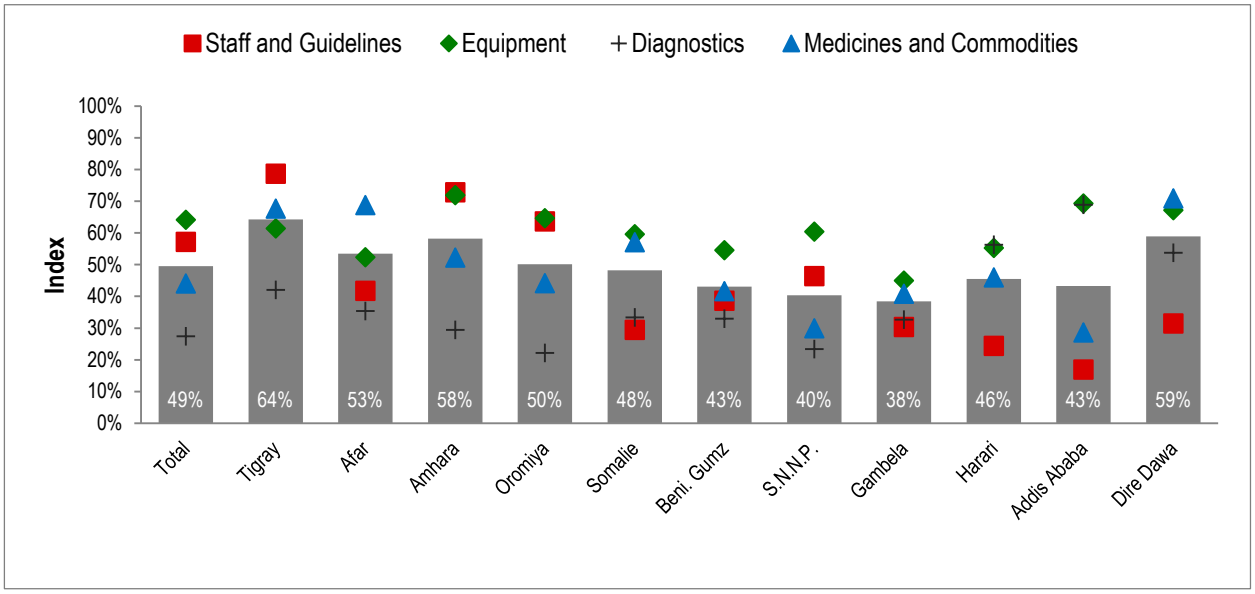


Figure 3.2.4 Percentage of facilities that have tracer items for child health preventative and curative care services among facilities that provide this service, by region , Ethiopia SARA 2016 (N=612)

3.2.2 Adolescent health

Due to societal pressures, adolescents are frequently barred from reproductive health services, resulting in unwanted pregnancies and low antenatal care attendance. Unmarried adolescents are more likely to engage in unprotected sex, which can result in pregnancy and STIs such as HIV. The Basic Package of essential services encourages efforts to educate young people in family planning and life skills, and will teach health staff to have a more considerate and patient attitude towards young people who are seeking help for reproductive health.

Service availability

Six in ten facilities in Ethiopia offers adolescent health service. Provision of ART treatment (5 percent) and provision of intrauterine contraceptive device (IUCD) (11 percent) and HIV testing and counselling services (18 percent) to adolescents are the least provided services among adolescent health services. Even though provision of ART services to adolescent is minimal, facilities in Addis Ababa region (18 percent) are more likely to provide the service. About half of the health facilities in Ethiopia provide emergency contraceptive pills to adolescent. Most facilities (77 percent) offered family planning services to adolescents, while 18 percent only provided HIV testing and counselling services to adolescents (Figure 3.2.5).

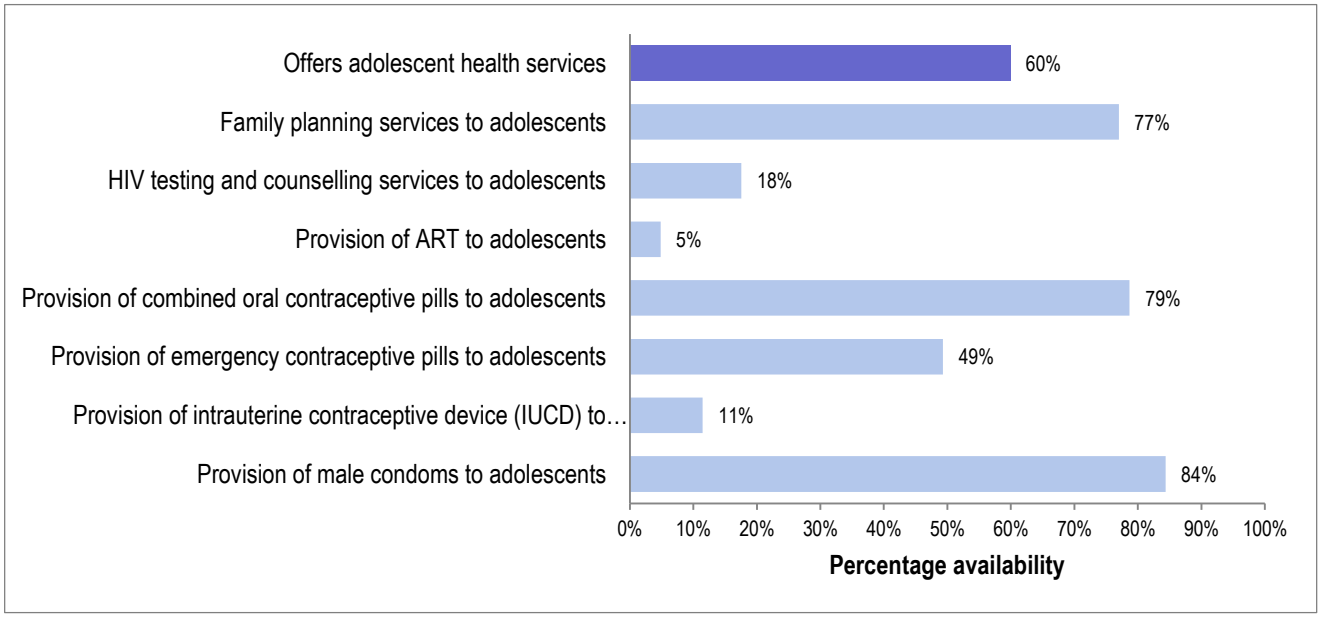


Figure 3.2.5 Percentage of facilities that offer adolescent health services, Ethiopia SARA 2016 (N=698)

Service readiness

Three in ten health facilities had staff trained in adolescent sexual and reproductive health, while 5 percent of the health facilities had staff trained in HIV prevention and care for adolescents. Only one in ten facilities had guidelines for service provision to adolescents.

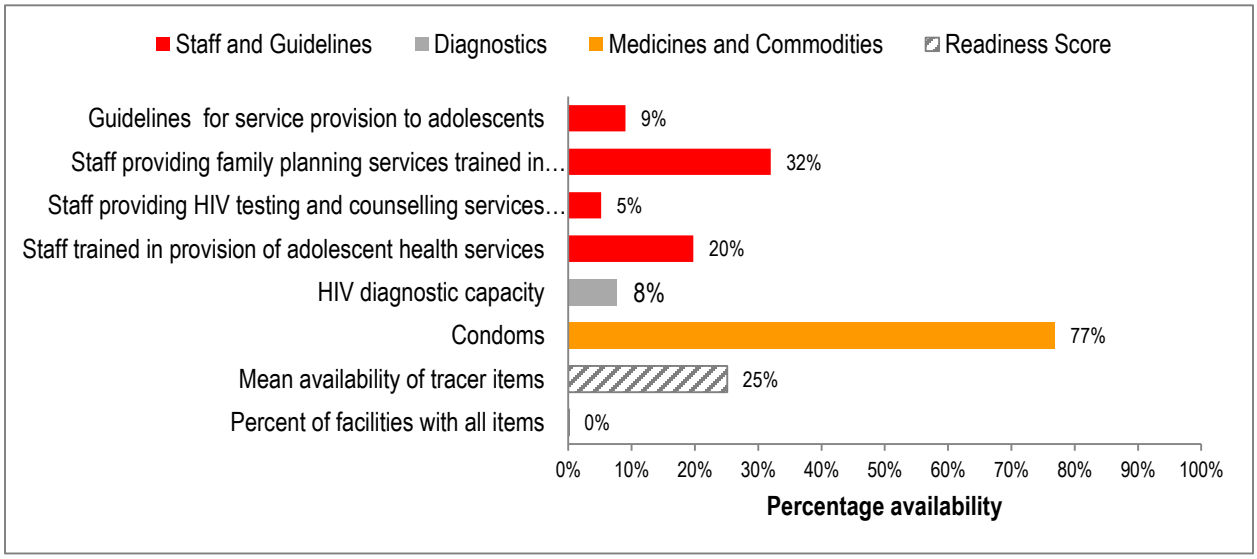


Figure 3.2.6 Percentage of facilities that have tracer items for adolescent health services among facilities that provide this service, Ethiopia SARA 2016 (N=497)

3.3. HIV/AIDS

Key findings
• Fifty-four percent of Health facilities excluding health post and 12 percent of Health post Offer HIV counseling and testing services. • Thirty-eight percent of the health facilities excluding health and 15 percent for Health posts have Guidelines for HIV counseling and testing. • Twenty-eight percent of health facilities excluding health posts and 25 percent for Health posts have at least 1 trained staff on HIV counseling and testing. • Thirty-six percent of health facilities excluding health posts have HIV Diagnostic capacity. • Twenty- nine percent of the health facilities excluding health posts and 8 percent for Health posts offer HIV care and support services. • Forty-six percent of the health facilities excluding health posts have guidelines for clinical management of HIV/AIDS.

Ethiopia is one of the sub Saharan African countries affected by HIV and AIDS with a prevalence of 1.5 percent of the population age 15-49. HIV prevalence in urban areas was approximately five times as high as in rural areas (5.2 percent and0.8 percent respectively). Among regions HIV prevalence is highest in Gambella (6.5 percent) and in Addis Ababa (5.2 percent). Women had a higher HIV prevalence rate (1.9 percent) compared with men (1 percent), peaking at 3.7 percent among women 30-34 years of age. The morbidity and mortality due to AIDS since the start of the epidemic are altering the Ethiopian population structure and limiting both productivity and the supply of services (EDHS 2011).

The national HIV/AIDS response is multi-sectoral and designed in line with the 'Three Ones Principle', which requires one national AIDS strategic framework, one national coordinating body and one monitoring and evaluation (M&E) system. The Strategic Plan II for Intensifying Multisectoral HIV and AIDS Response in Ethiopia 2010/11 – 2014/15 provides a basis for coordination of all HIV/AIDS interventions in Ethiopia and is based on a process of joint annual reviews of progress. The SPM II has been developed through a collective effort and active participation of key government sectors, faith-based organizations, community-based organizations, civil societies and associations of people living with HIV, the private sector, multilateral and bilateral donors and individuals (Strategic Plan II for Intensifying Multisectoral HIV and AIDS Response in Ethiopia 2010/11 – 2014/15.).

3.3.1 HIV Counselling and Testing

General knowledge of AIDS is almost universal; 97 percent of women and 99 percent of men have heard of AIDS. Comprehensive knowledge of AIDS is uncommon, for example about 19 percent of women and 32 percent of men have comprehensive knowledge of HIV/AIDS transmission and prevention methods (EDHS 2011).

Although, HIV counselling and testing services are currently being expanded to all health facilities. Based on results from the 2016, SARA survey in Ethiopia, among the total number of health facilities only 54 Percent of them provide HIV counselling and testing services.

Service availability

Table 3.3.1 shows percentage of facilities excluding health posts offering HCT services by Facility type, Managing authority and Urban/Rural.

Based on this governmental Health facilities offered the highest (84 percent) HIV counselling and testing services compared with facilities under other managing authority (22 percent). Rural health facilities (7 percent) offered highest HIV counselling and testing services compared with urban Health facilities (43 percent).

Table 3.3. 1 Percentage of facilities that offer HIV counselling and testing services, Ethiopia SARA 2016 (N=547)

Background Characteristics	Offers HIV counselling and testing services	Total number of facilities
Regions		
Tigray	75	42
Afar	92	38
Amhara	56	61
Oromiya	50	99
Somali	33	43
Beni. Gumuz	48	30
S.N.N.P.	59	61
Gambella	29	30
Harrari	45	23
Addis Ababa	47	91
Dire Dawa	70	29
Facility type		
Referral hospital	81	32
General hospital	85	117
Primary hospital	85	61
Health centre	84	165
Higher clinic	82	23
Medium clinic	50	64
Lower clinic	3	85
Managing authority		
Government	84	320
Other	22	227
Urban/Rural		
Urban	43	431
Rural	70	116
National	54	547

Health facilities from Afar Region offers the highest percentage of HIV counselling and testing services (92 percent) followed by Tigray with (75 percent), and Dire Dawa with (70 percent); whereas the percentage was lowest in Gambella region with (29 percent) followed by Somali (33 Percent) and Harrari (45 percent).

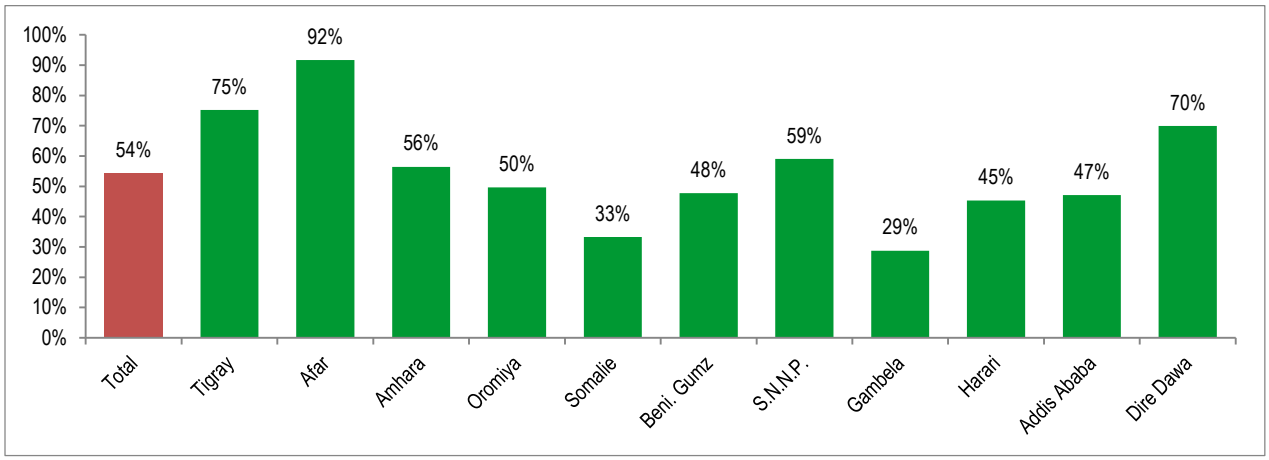


Figure 3.3.1: Percentage of facilities excluding Health posts that offer HIV counselling and testing services, by region, Ethiopia SARA 2016 (N=547)

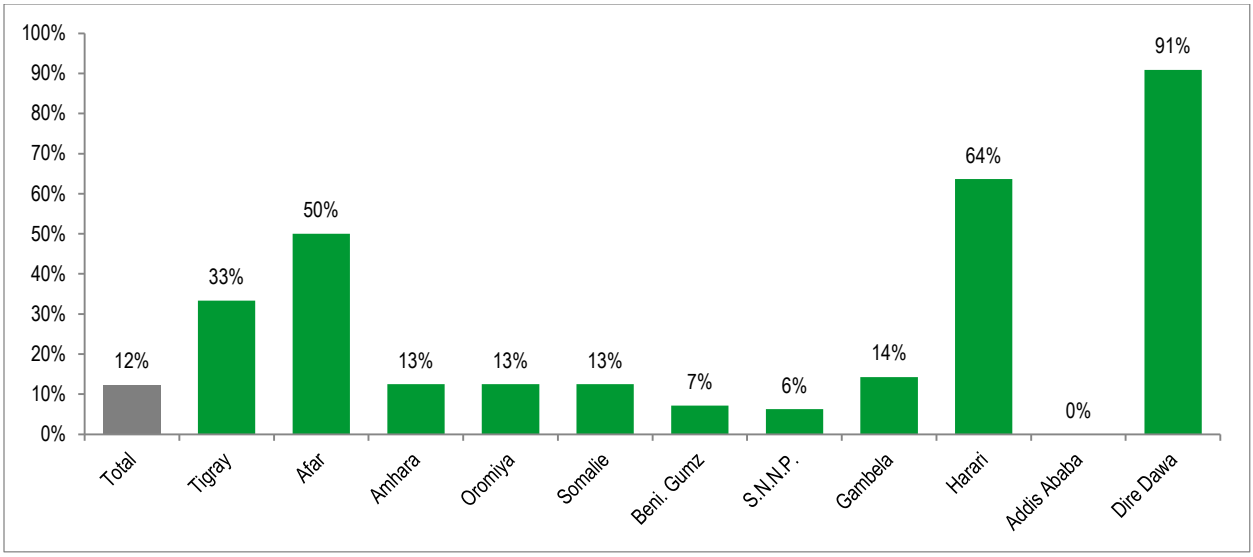


Figure 3.3.2: Percentage of Health posts that offer HIV counseling and testing services, by region, Ethiopia SARA 2016 (N=138)

Service readiness

The 370 facilities which offered HIV counselling and testing services were also assessed on their readiness to provide the service based on the availability of the five tracer items in Table 3.3.2.

Table 3.3.2 shows the availability of these tracer items by Region, Facility type, Managing authority, and Urban/Rural, as well as the percentage of facilities with all five tracer items.

Table 3.3.2: tracer items for HIV counselling and testing services, Ethiopia SARA 2016

Domains	Tracer items required for service delivery
Staff & training	• Guidelines on HIV counselling and testing
	• Staff trained in HIV counselling and testing
Equipment	• visual and auditory privacy
Diagnostics	• HIV diagnostic capacity
Medicines & commodities	• Condoms

Table 3.3. 2 Percentage of facilities excluding health posts that have tracer items for HIV counseling and testing services among facilities that provide this service, Ethiopia SARA 2016 (N=370)

Category	Guidelines available HIV counselling and testing	At least 1 trained staff HIV counselling and testing	Room with visual and auditory privacy	HIV diagnostic capacity	Condoms	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions								
Tigray	53	51	94	27	83	8	62	32
Afar	21	49	91	33	61	2	51	34
Amhara	32	22	90	43	59	11	49	44
Oromiya	40	9	77	25	70	1	44	72
Somali	35	63	99	59	58	4	63	25
Beni. Gumuz	44	80	73	64	71	17	66	16
S.N.N.P.	31	36	95	46	55	1	53	46
Gambella	49	70	100	35	95	30	70	14

Harari	86	71	100	29	67	24	71	15
Addis Ababa	60	39	98	28	65	15	58	50
Dire Dawa	31	44	71	21	61	0	46	22
Facility type								
Referral hospital	81	69	92	77	85	38	81	26
General hospital	65	55	90	67	75	24	70	99
Primary hospital	54	58	94	69	83	25	72	52
Health centre	34	19	86	38	65	3	48	133
Higher clinic	36	52	99	27	51	8	53	19
Medium clinic	68	60	100	23	67	16	64	32
Lower clinic	3	85	96	0	12	0	39	9
Managing authority								
Government	35	20	86	40	66	4	49	268
Other	51	61	99	22	54	12	57	102
Urban/Rural								
Urban	53	47	93	42	66	12	60	291
Rural	25	12	85	31	62	0	43	79
Total	38	28	88	36	64	6	51	370

Overall, percent of facilities with all tracer items for HIV counselling and testing service was quite low (6 percent): each item was available in at least 51 percent of health facilities. Room with visual and auditory privacy were available in 88 percent of the facilities. In addition, condoms were available in 64 percent. Thirty-six percent of the facilities offering HCT had diagnostic capacity. HIV diagnostic capacity varied across facility type, the lowest availability in Health centres (38 percent) and the highest in Referral Hospitals (77 percent). Guidelines for HIV counselling and testing is more likely to be available in referral hospitals (81 percent).

Lower clinic (85 percent) are more likely to have at least 1 trained staff on HIV counselling and testing compared with other facility types.

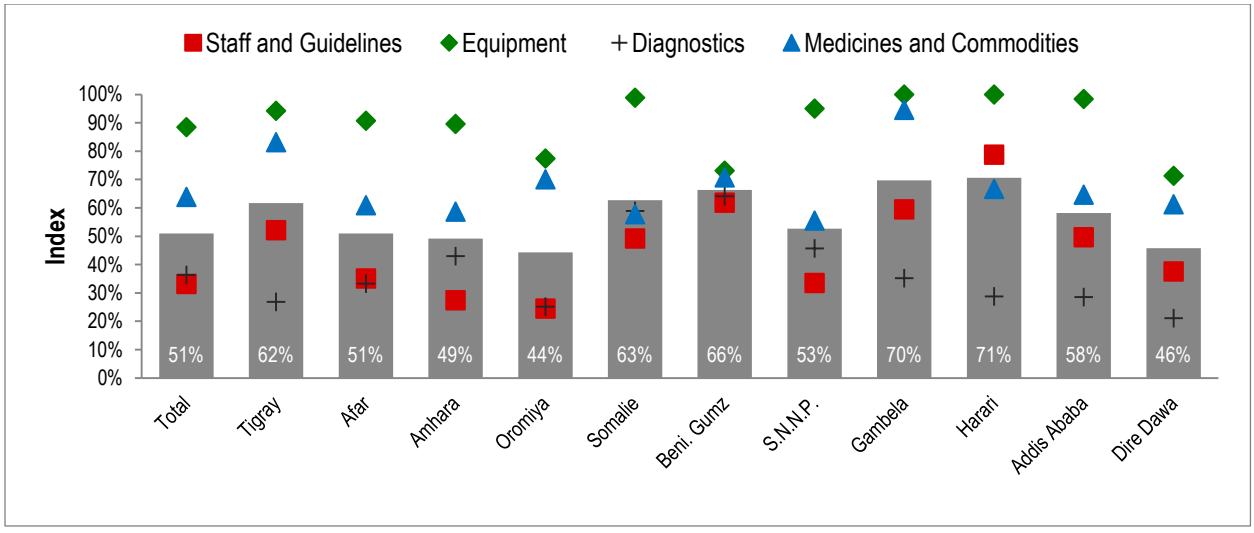


Figure 3.3.3: Percentage of facilities that have tracer items for HIV counseling and testing services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=370)

Figure 3.3.3 shows the percentage availability of these tracer items in facilities that provide HIV counselling and testing services by region. Percentage of facilities with mean availability of tracer items for HIV counselling and testing services had a regional disparity, Harrari region with 71 percent had highest score compared with the lowest in Oromiya (44 percent).

3.3.2 HIV/AIDS Care and Support Services

According to UNAIDS 2015 report, number of people living with HIV in Ethiopia estimated 730,000 [600,000 - 970,000]; adults age 15 to 49 .Therefore there is a need for robust HIV/AIDS care and support services, including treatment of opportunistic infections, nutritional support, palliative care and pain management. TB is the leading cause of mortality among people living with HIV/AIDS. Inadequate nutrition can increase the risk of rapid progression of HIV to AIDS and the possibility of opportunistic infections. The Strategic Plan II for intensifying multisectoral HIV and AIDS Response in Ethiopia 2010/11 – 2014/15 specify the need to expand access to palliative care and pain management for the chronically ill as well as psychosocial support for patients, their family and caregivers.

Service availability

Tale 3.3.3 and figure 3.3.4. Shows the percentage of facilities offering HIV/AIDS care and support services by Type of services, Facility Type, Managing authority, Rural/Urban, and Region. Overall, 29 percent of health facilities offered HIV/AIDS care and support services. Tigray region had the highest proportion of facilities offering HIV/AIDS care and support services at 56 percent and Somalie region had the lowest percentage of facilities offering care and support services at 13 percent. Family planning counselling services (29 percent) is the highest compared with IV treatment of fungal infections (5 percent). Health posts in Harari region (55 percent) are more likely to offer HIV/AIDS care and support services compared with health posts in other regions.

Table 3.3. 3 Percentage of facilities excluding health posts that offer HIV/AIDS care and support services by region, Ethiopia SARA 2016 (N=547)

	Offers HIV care and support services	Treatment of opportunistic infections	Provision of palliative care	IV treatment of fungal infections	Treatment for Kaposi's sarcoma	Nutritional rehabilitation services	Provide/prescribe fortified protein supplementation	Care for paediatric HIV/AIDS patients	Provide/prescribe preventative treatment for TB	Preventative treatment for opportunistic infections	Provide/prescribe micronutrient supplementation	Family planning counselling	Provide condoms	Total number of facilities
Regions														
Tigray	56	56	41	19	4	37	30	42	37	37	46	49	52	42
Afar	36	32	32	6	6	36	16	28	12	32	6	36	36	38
Amhara	22	22	22	4	7	19	13	19	16	16	15	21	22	61
Oromiya	23	23	19	2	4	23	19	19	19	23	23	23	23	99
Somali	13	13	11	11	4	10	3	3	9	6	6	13	11	43
Beni. Gumuz	39	39	35	15	2	28	14	31	28	31	29	39	39	30
S.N.N.P.	42	30	28	4	3	27	13	33	16	22	19	42	39	61
Gambella	35	35	28	4	9	32	11	17	12	35	33	35	33	30
Harrari	32	25	32	17	10	25	19	19	17	32	30	25	25	23
Addis Ababa	29	26	27	11	14	25	16	25	23	26	27	26	20	91
Dire Dawa	31	31	31	16	19	18	16	24	31	31	31	25	25	29
Facility type														
Referral hospital	97	97	94	94	88	97	84	88	94	97	91	94	94	32
General hospital	81	81	80	73	66	79	64	75	79	80	74	80	76	117
Primary hospital	79	79	79	51	44	75	67	77	77	79	62	79	75	61
Health centre	34	34	27	5	5	31	25	31	29	33	30	34	33	165
Higher clinic	54	48	47	12	14	39	13	20	18	21	28	44	40	23
Medium clinic	25	25	25	3	8	12	7	22	6	17	17	25	25	64
Lower clinic	15	7	11	0	0	9	0	8	0	1	3	15	13	85
Managing authority														
Government	36	36	29	8	7	33	26	33	31	35	32	36	35	320
Other	22	16	18	3	4	14	4	14	4	7	10	21	19	227
Urban/Rural														
Urban	38	33	32	8	7	28	19	32	25	29	28	37	35	431
Rural	17	17	13	2	4	17	10	11	9	12	12	17	17	116
National	29	26	24	5	6	24	16	24	18	22	21	29	28	547

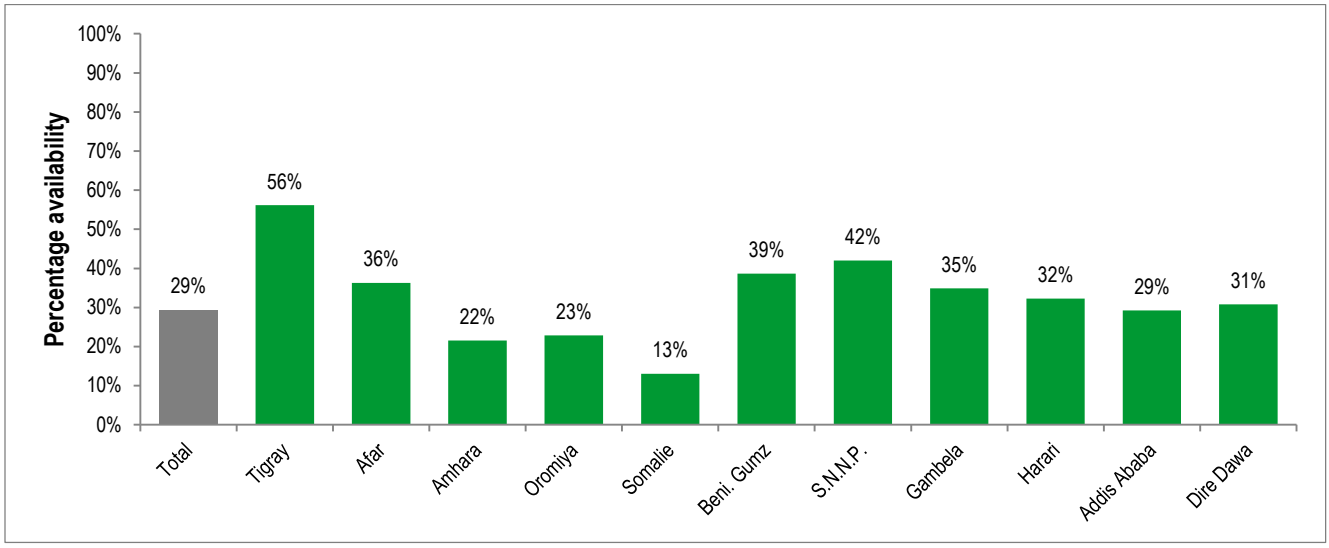


Figure 3.3.4: Percentage of facilities excluding health posts that offer HIV/AIDS care and support services, by region, Ethiopia SARA 2016 (N=547)

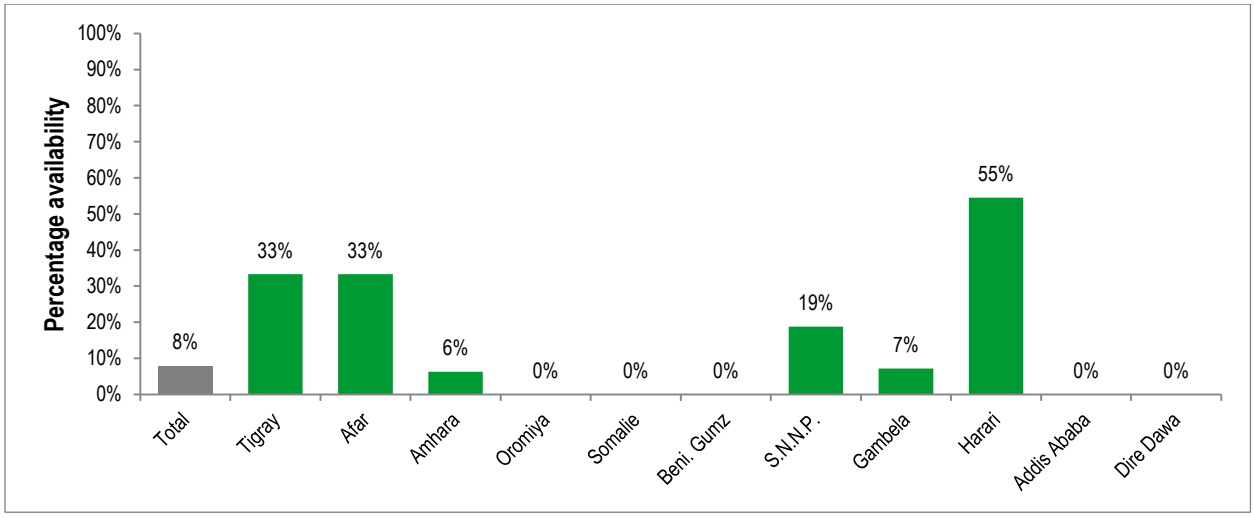


Figure 3.3.5: Percentage of Health posts that offer HIV/AIDS care and support services, by region, Ethiopia SARA 2016 (N=138)

Service readiness

Facilities offered HIV/AIDS care and support services (294 facilities) also assessed on their readiness to provide the service based on the availability of the ten tracer items (Table 3.3.5). Table 3.3.6 shows 57 percent of facilities had a mean availability of the ten tracer items. Percentage of facilities that have tracer items for HIV care and support services for all items is only 2 percent. While condom service readiness had the highest (83 Percent) compared with IV Treatment for fungal infection (5 Percent).

Table 3.3.4: Tracer items required for service delivery, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines for clinical management of HIV & AIDS • Guidelines for palliative care • Staff trained in clinical management of HIV & AIDS
Diagnostics	• System for diagnosis of TB among HIV + clients
Medicines and commodities	• Intravenous solution with infusion set • IV treatment fungal infections • Co-trimoxazole cap/tab • First-line TB treatment medications • Palliative care pain management • Condoms

Table 3.3. 4 Percentage of facilities that have tracer items for HIV care and support services among facilities that provide this service, Ethiopia SARA 2016 (N=294)

Background characteristics	Guidelines available clinical management HIV/AIDS	Guidelines available palliative care	At least 1 trained staff clinic management HIV/AIDS	System for diagnosis of TB among HIV+ clients	Intravenous solution with infusion set	IV treatment fungal infection	Co-trimoxazole cap/tab	All first line TB medications	Palliative care pain management	Condoms	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions													
Tigray	65	71	70	66	88	27	76	68	82	86	9	70	29
Afar	47	13	42	41	83	15	71	54	88	94	2	55	17
Amhara	73	59	59	86	86	2	73	87	73	87	2	68	30
Oromiya	41	39	53	84	84	4	90	90	90	100	1	68	65
Somali	16	12	22	22	82	0	82	76	82	67	0	46	15
Beni. Gumuz	31	28	74	82	74	13	90	81	90	100	0	66	13
S.N.N.P.	23	29	37	30	31	1	51	44	58	65	0	37	39
Gambella	36	20	49	29	69	2	53	29	64	100	2	45	13
Harrari	72	53	38	66	51	6	79	58	79	79	6	58	11
Addis Ababa	69	43	51	78	84	2	78	77	78	87	1	65	50
Dire Dawa	83	58	85	83	100	18	100	83	100	100	18	81	12
Facility type													
Referral hospital	90	84	77	97	94	26	94	90	100	100	13	85	31
General hospital	86	67	60	93	99	40	99	99	99	93	17	83	95
Primary hospital	85	58	73	96	96	19	100	96	100	96	6	82	48
Health centre	53	52	68	81	85	4	100	98	100	91	1	73	77
Higher clinic	61	35	20	54	81	0	27	26	34	80	0	42	11
Medium clinic	37	32	37	34	37	2	10	26	11	74	0	30	18

Lower clinic	0	0	1	0	3	0	15	0	31	58	0	11	14
Managing authority													
Government	57	53	68	82	86	7	100	99	100	93	3	74	217
Other	27	22	18	27	35	1	21	17	30	67	1	26	77
Urban/Rural													
Urban	53	47	56	67	64	6	69	67	70	85	2	58	265
Rural	23	23	29	47	79	1	79	75	89	78	1	52	29
Total	46	41	50	62	67	5	71	69	75	83	2	57	294

The above Table 3.3.4 shows that the services readiness by Region, Facility Type, Managing authority and Urban/Rural. Referral Hospitals (85 Percent) had highest readiness score compare with other facility types. Government health facilities (74 percent) had better service readiness score than health facilities under other managing authority (26 percent). On the other hand, health facilities located in urban (58 percent) and rural (52 Percent) set up have almost similar service readiness score for HIV/AIDS care and support.

Figure 3.3.6 shows percentage of facilities that had tracer items for HIV care and support services by regions, 57 percent of health facilities offers HIV/AIDS care and support services. Among regions, Dire Dawa city administration had highest proportion of facilities that have tracer items for HIV/AIDS care and support services (81percent) and S.N.N.P. had the lowest (37 percent).

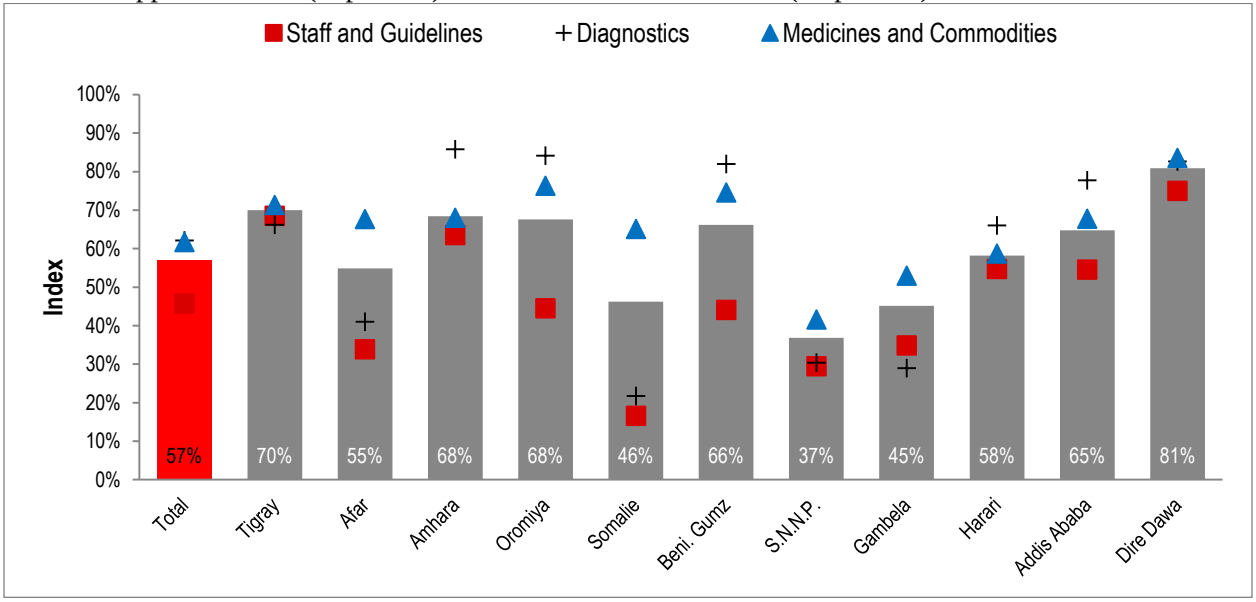


Figure 3.3.6: Percentage of facilities that have tracer items for HIV care and support services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=294)

3.3.3 Antiretroviral therapy

Availability and accessibility of health facility-based HIV services have increased from 658 and 129 in2005 to 1596 and 843 in 2009, respectively, while free ART sites increased from 3 to 483 during the same period2. According to the Strategic Plan II for Intensifying Multisectoral HIV and AIDS Response In Ethiopia 2010/11 – 2014/15, annual HIV Counselling and Testing (HCT) uptake has increased from 0.4 million in 2005 to 5.8 million in 2009. As a result 73 percent of the PLHIV in need of treatment have been enrolled for ART as of 2009.Millennium AIDS Campaign-Ethiopia (MAC-E) has made a significant contribution to this achievement. Providing universal access to ART is a strategic objective of the Strategic Plan II for Intensifying Multisectoral HIV and AIDS Response in Ethiopia 2010/11 – 2014/15 under the theme of expanding treatment, care and support.

Service availability

Table 3.3.7 shows the percentage of facilities offering ART services by Facility Type, Managing authority and Urban/Rural. Overall, seventeen percent of facilities covered in the assessment offered ART. Referral Hospitals (97 percent) compared with Health centres (28 percent) provide better antiretroviral therapy services. Tigray and Benshangul Gumuz Regions had Better percentage of facilities offering ART at 34 percent and 28 percent, respectively. Somali region had the lowest percentage of facilities offering ART at 4 percent.

Table 3.3. 5 Percentage of facilities that offer ARV services, by region, Ethiopia SARA 2016 (N=547)

Background characteristics	Offers ARV prescription or ARV treatment follow-up services	ART prescription	Provide treatment follow-up services for persons on ART	Total number of facilities
Facility type				
Referral hospital	97	97	94	32
General hospital	85	84	80	117
Primary hospital	74	74	74	61
Health centre	28	28	28	165
Higher clinic	7	7	7	23
Medium clinic	0	0	0	64
Lower clinic	0	0	0	85
Managing authority				
Government	30	30	30	320
Other	2	2	2	227
Urban/Rural				
Urban	23	23	23	431
Rural	7	7	7	116
Total	17	17	17	547

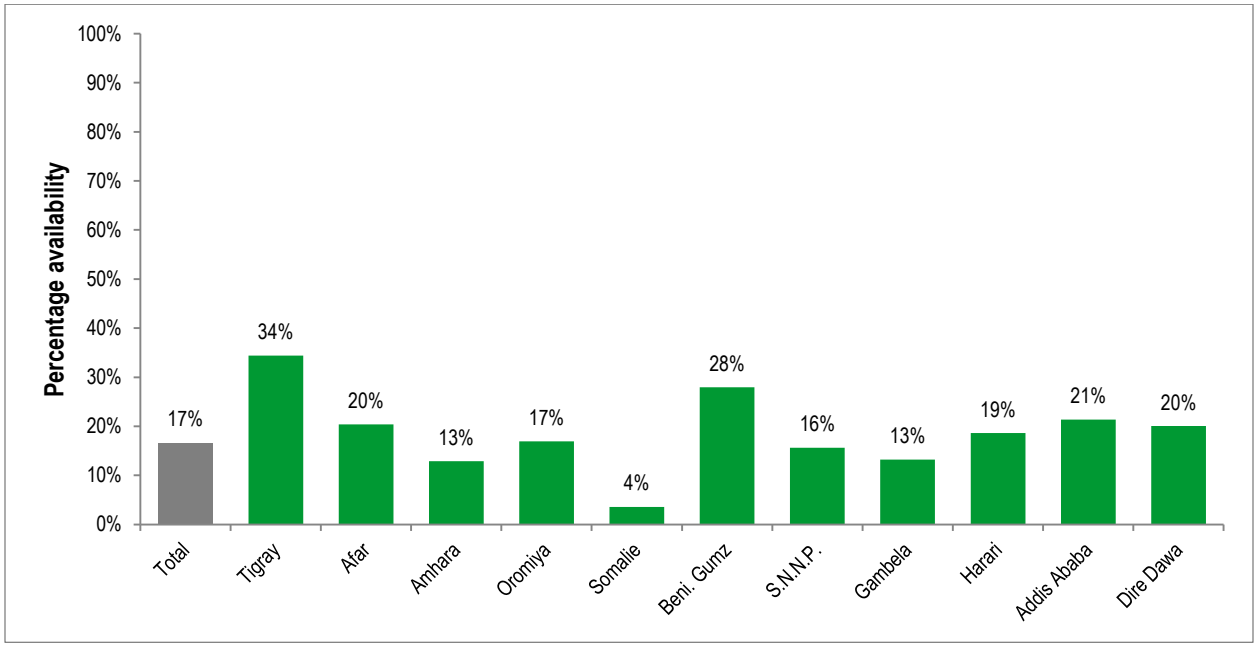


Figure 3.3.7: Percentage of facilities that offer ARV services, by region, Ethiopia SARA 2016 (N=547)

Service readiness

Table 3.3.6 shows the seven tracer items required for ART service delivery and Table 3.3.9 shows the availability of these tracer items by facility type, managing authority, and Urban/Rural. Percent of facilities with all items is about 5 percent while the mean availability of tracer items is 46 percent. Facilities in urban setting are more likely to be ready for antiretroviral therapy (49 percent) compared with rural facilities (33 percent).

Table 3.3.8: Tracer items required for service delivery, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	Guidelines for antiretroviral therapy Staff trained in ART prescription and management†
Diagnostics	Full blood count CD4 or Viral load Renal function test (serum creatinine testing or other) Liver function test (ALT or other)
Medicines and commodities	Three first-line antiretroviral

Table 3.3.6 Readiness of facilities that offer ARV services, by region, Ethiopia SARA 2016 (N=249)

Category	Guidelines available ART	At least 1 trained staff ART prescription and management	Complete blood count (CBC)	CD4 or viral load	Renal function test	Liver function test	3 first line ARVs	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions										
Tigray	87	58	11	8	5	5	62	4	34	23
Afar	73	96	31	31	4	0	100	0	48	10
Amhara	100	99	9	7	4	5	100	2	46	28
Oromiya	56	74	9	31	26	27	100	2	46	62
Somali	67	79	67	45	22	45	67	11	56	8
Beni. Gumuz	88	88	19	19	27	31	100	15	53	10
S.N.N.P.	100	63	6	6	3	4	82	3	38	28
Gambella	76	100	6	6	6	6	88	6	41	9
Harrari	67	67	56	67	78	78	100	22	73	9
Addis Ababa	79	85	70	62	50	53	93	19	70	52
Dire Dawa	100	77	33	17	8	25	92	8	50	10
Facility type										
Referral hospital	97	77	87	90	35	32	97	26	74	31
General hospital	92	72	84	73	51	58	95	27	75	99
Primary hospital	87	87	60	53	20	29	98	13	62	45
Health centre	81	77	6	15	12	12	90	2	42	72
Higher clinic	0	92	92	0	92	92	92	0	66	2
Medium clinic	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
Lower clinic	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
Managing authority										
Government	82	77	13	21	15	16	91	4	45	209
Other	54	81	92	41	70	75	92	14	72	40
Rural/Urban										
Urban	78	78	20	26	21	22	95	6	49	232
Rural	93	72	4	4	1	1	72	1	35	17
Total	81	77	17	22	17	18	91	5	46	249

According to Figure 3.3.8 there is a regional disparity in percentage of facilities that have tracer items for ARV services; Harrari Region had the highest (73 percent) compared with Tigray having the lowest (34 percent).

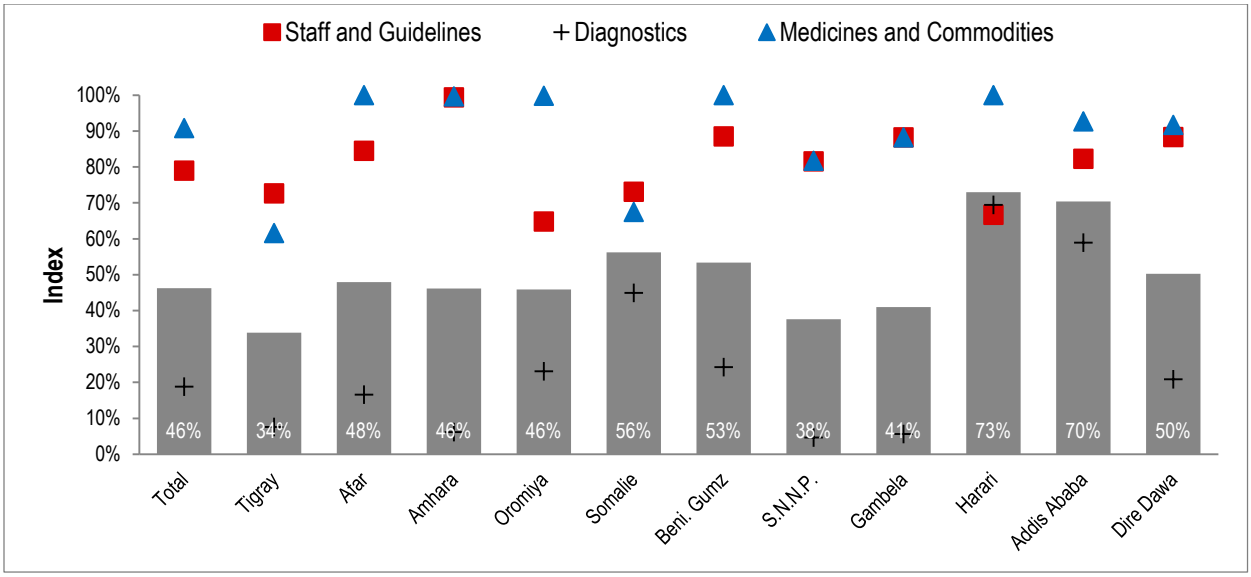


Figure 3.3.8: Percentage of facilities that have tracer items for ARV services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=249)

3.3.4 Prevention of mother to child transmission (PMTCT)

Mother to child transmission (MTCT) accounts for 15% of HIV infections during pregnancy, at birth or while breastfeeding, and is the second most common transmission mode of HIV in Ethiopia. The Prevention of Mother-to-Child Transmission of HIV (PMTCT) programme is a priority in the fight against AIDS in children in Ethiopia. The programme seeks to prevent paediatric HIV infection through primary prevention of HIV in the childbearing population; prevention of unintended pregnancies; prevention of mother-to-child transmission of HIV through a combination-dose of regimen; and provision of care and follow-up psychosocial support. Pregnant women visiting public health facilities for antenatal care receive HIV testing and PMTCT services are free of charge (Guidelines for Prevention of Mother to-Child Transmission of HIV in Ethiopia, 2007).

Service availability

Table 3.3.10 shows the percentage of facilities offering PMTCT services by Region, Facility type, Managing authority, and Urban/Rural. Forty seven percent of health facilities offered PMTCT services, 80 percent accounts by government health facilities and 7 percent by health facilities owned by other managing authority.

Figure 3.3.9 shows percentage of facilities that offer PMTCT services, by region and indicates Tigray region had the highest percentage of facilities offered PMTCT services (67 percent) compared with Addis Ababa city Administration which had the lowest percentage (25 percent).

The percentage of facilities offered PMTCT services was the highest in rural health facilities (60 percent) compared with urban health facilities (35 percent).

The percentage of facilities offering Family planning counselling to HIV+ women is 45 percent. Similar percentages of facilities offered HIV counselling & testing to HIV+ pregnant women and Nutritional counselling for HIV+ women & their infants was 44 percent. The lowest percentage of facilities offered PMTCT services observed for ARV prophylaxis to HIV+ women (29 percent).

Table 3.3. 6 Percentage of facilities that offer PMTCT services, by background characteristics, Ethiopia SARA 2016 (N=547).

Background characteristics	Offers services for PMTCT	HIV counselling & testing to HIV+ pregnant women	HIV counselling & testing to infants born to HIV+ pregnant wome
Regions			
Tigray	67	67	64
Afar	46	42	40
Amhara	42	42	42
Oromiya	53	53	46
Somali	37	37	37
Beni. Gumuz	44	44	44
S.N.N.P	42	42	30
Gambella	52	52	30
Harrari	45	45	45
Addis Ababa	25	25	25
Dire Dawa	36	36	36
Facility type			
Referral hospital	91	91	84
General hospital	92	91	88
Primary hospital	87	87	80
Health centre	81	81	71
Higher clinic	38	38	35
Medium clinic	4	4	2
Lower clinic	1	1	0
Managing authority			
Government	80	80	70
Other	7	7	6
Rural/Urban			
Urban	35	35	34
Rural	60	60	48
Total	45	45	40

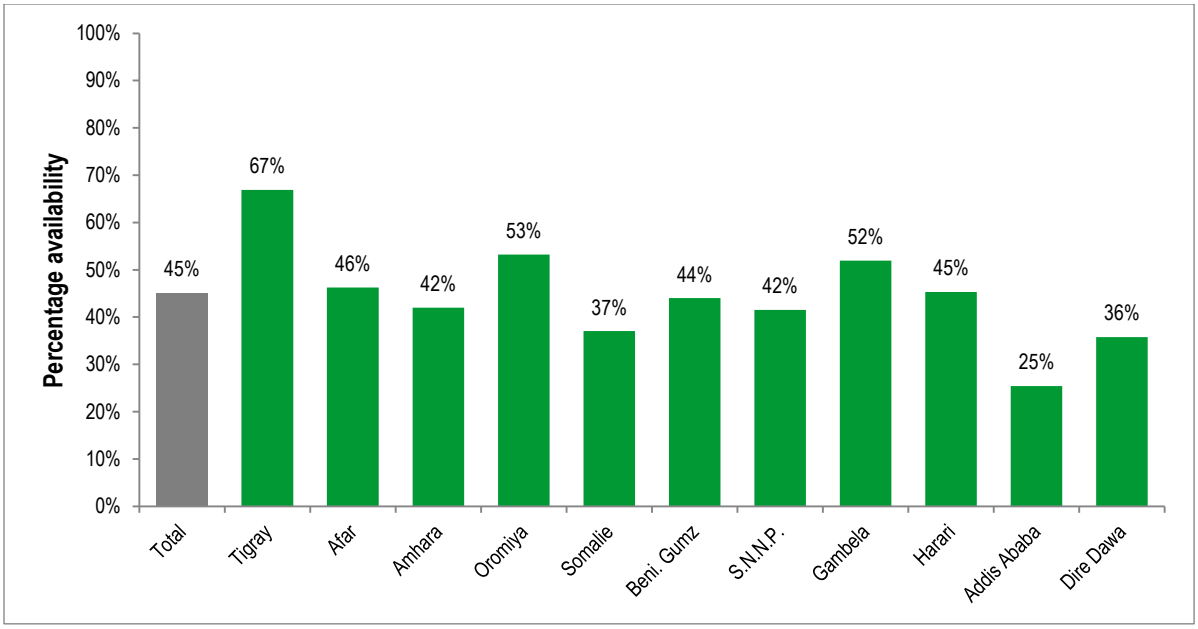


Figure 3.3.9: Percentage of facilities that offer PMTCT services, by region, Ethiopia SARA 2016 (N=547)

Service readiness

Facilities offering PMTCT services (346 facilities) were also assessed on their readiness to provide the service based on the availability of the ten tracer items2inTable 11.Table 12 shows the availability of these tracer items by region, Facility Type, Managing authority, and Urban/Rural, as well as the percentage of facilities with all ten items.

Table 3.3.11: Tracer items required for service delivery, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines for PMTCT • Guidelines for infant and young child feeding counselling • Staff trained in PMTCT • Staff trained in infant and young child feeding
Equipment	• Visual and auditory privacy
Diagnostics	• HIV diagnostic capacity for adults • Dried blood spot (DBS) filter paper for diagnosing HIV in newborns
Medicines & commodities	• Zidovudine (AZT) syrup • Nevirapine (NVP) syrup • Maternal ARV prophylaxis

Table 3.3. 7 Percentage of facilities that have tracer items for PMTCT services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=346)

Background characteristics	Guidelines available PMTCT	Guidelines infant and young child feeding	At least 1 trained staff PMTCT	At least 1 trained staff infant and young child feeding	Room with visual and auditory privacy	HIV diagnostic capacity for adults	DBS for diagnosing new born HIV	Zidovudine syrup	Nevirapine syrup	Maternal ARV prophylaxis	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions													
Tigray	88	74	57	36	98	37	10	8	75	64	0	55	31
Afar	51	41	57	39	98	40	2	8	61	52	0	45	19
Amhara	51	43	58	36	72	44	16	1	31	31	0	38	40
Oromiya	44	30	51	29	92	23	16	9	38	39	0	37	73
Somali	49	31	68	63	98	50	4	2	35	22	0	42	18
Beni. Gumuz	49	44	93	42	100	54	24	32	85	85	0	61	15
S.N.N.P.	37	29	79	8	86	51	8	14	30	31	0	37	40
Gambella	33	30	31	28	97	25	16	9	25	28	3	32	19
Harrari	95	62	100	65	91	14	9	14	37	46	0	53	15
Facility type													
Referral hospital	66	55	97	66	83	76	59	24	90	100	7	71	29
General hospital	86	64	83	52	76	62	50	28	87	93	3	68	108
Primary hospital	60	38	72	40	91	64	32	25	83	89	4	59	53
Health centre	48	36	63	29	88	37	13	8	39	38	0	40	134
Higher clinic	67	67	37	20	59	0	17	0	27	17	0	31	9
Medium clinic	47	38	27	9	100	27	0	0	0	0	0	25	8
Lower clinic	0	0	0	0	100	0	0	0	0	0	0	10	5
Managing authority													
Government	49	36	64	30	87	38	14	9	42	41	0	41	272
Other	62	57	45	30	77	15	18	2	28	24	1	36	74
Urban/Rural													
Urban	71	48	82	41	86	41	29	14	67	69	1	55	282
Rural	32	30	46	20	87	33	3	4	19	16	0	29	64
Total	50	38	62	30	86	37	15	8	41	40	0	41	346

Overall, the availability of tracer items for PMTCT services was low (41 percent): Percent of facilities with all items in health facilities providing PMTCT services was zero. Availability of guidelines for PMTCT and staff trained in the facilities was at 50 percent and 62 percent, respectively. This may reflect efforts of the PMTCT programme to provide adequate training to health workers in PMTCT. However, availability of guidelines and trained staff in infant and young child feeding was considerably lower at 38 and 40 percent, respectively, indicating that further effort is needed in this area. Availability of DBS for diagnosing new-born HIV was relatively very low at 15 percent. However, there was considerable variation across Regions: availability of guidelines for PMTCT in Harari was highest (95 percent) compared with Gambella (33 percent), At least 1 trained staff on PMTCT in Harrari and Dire Dawa are the highest (100 percent) compared with Gambella (31 percent), HIV diagnostic capacity for adults in Benshangul Gumuz is highest (54 percent) compared with Harrari (14percent).Availability of Nevirapine and Zidovudine was low at 41 and 8 percent, respectively;

Figure 3.3.10 shows the readiness scores (mean availability of the ten tracer items) by region, as well as the mean availabilities of items by domain. The readiness score was low at forty-one percent out of hundred percent. This indicates that not all of the required elements are in place in these facilities to be

able to offer an adequate level of the service. Addis Ababa and Benshangul Gumuz have the highest percentage of facilities that have tracer items for PMTCT services (61percent) compared with Gambella (32 percent) which is the lowest.

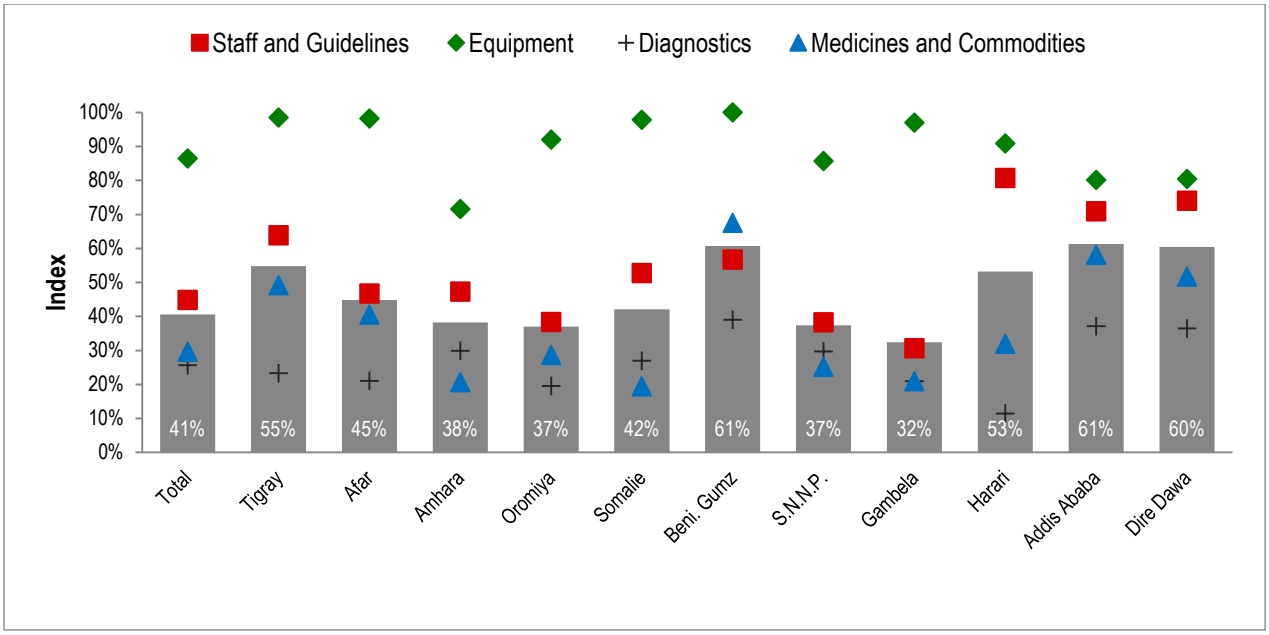


Figure 3.3.10: Percentage of facilities that have tracer items for PMTCT services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=346)

3.4. Sexually Transmitted Infection (STI)

Service availability

Sexually transmitted infections (STIs) are a variety of clinical syndromes caused by pathogens that can be acquired and transmitted through sexual activity .Table 3.4.1 shows the number and percentage of facilities offering STI services by region, by facility type, and by managing authority. Seventy seven percent of the facilities excluding Health posts provided STI services in the year 2016. Almost equal number; 77 percent and 76 percent of the facilities provided STI diagnosis and treatment services, respectively. The percentage of facilities providing STI services vary across the region, managing authorities, and facility types. All health facilities excluding Health posts in Dire Dawa and managed by the government were provided STI services more likely compared with other.

Table 3.4. 1 Percentage of facilities that provide Sexually Transmitted Infections service, by region, Ethiopia SARA 2016 (N=547)

	Offers services for STIs	Diagnosis of STIs	Prescribe treatment for STIs	Total number of facilities
Regions				
Tigray	90	90	90	42
Afar	77	77	77	38
Amhara	80	80	74	61
Oromiya	68	68	68	99
Somali	94	94	94	43
Beni. Gumuz	77	77	74	30
S.N.N.P.	80	77	80	61
Gambella	88	88	88	30
Harrari	84	84	84	23
Addis Ababa	80	79	80	91

Dire Dawa	100	100	95	29
Facility type				
Referral hospital	97	97	97	32
General hospital	95	94	94	117
Primary hospital	90	90	90	61
Health centre	93	93	93	165
Higher clinic	99	99	99	23
Medium clinic	94	94	94	64
Lower clinic	42	40	38	85
Managing authority				
Government	93	93	93	320
Other	60	59	57	227
Urban/Rural				
Urban	74	74	73	431
Rural	82	80	80	116
Total	77	77	76	547

Health posts are less likely to provide sexually transmitted infection service. Only 11 percent of the health posts offer sexually transmitted infection service. The figure is less as compared with 25 percent of 2014 ESPA plus survey. The percentage of facilities providing STI services was high in rural areas than urban. Service availability varies across the regions ranging from zero percent of Tigray, Oromiya, and Gambella to 73percent of Dire Dawa. Table 3.4.2 shows Percentage of facilities that offer STI services, by region.

Table 3.4. 2 Percentage of health posts that provide Sexually Transmitted Infections service, by region, Ethiopia SARA 2016 (N=138)

	Offers services for STIs
Total	11
Regions	
Tigray	0
Afar	8
Amhara	25
Oromiya	0
Somali	38
Beni. Gumuz	7
S.N.N.P.	13
Gambella	0
Harrari	27
Addis Ababa	NA
Dire Dawa	73
Facility type	
Health posts	11
Managing authority	
Government	11
Urban/Rural	
Urban	5
Rural	11

Service Readiness

Facilities offering STI services (477 facilities) were also assessed on their readiness to provide the services based on the availability of tracer items. Figure 3.4.1 shows percentage of facilities that have tracer items for STI services among facilities that provide this service. Only10 percent of the health facility excluding Health posts had all tracer items. Large number of the facilities had Condoms (84 percent) as compared with other items.

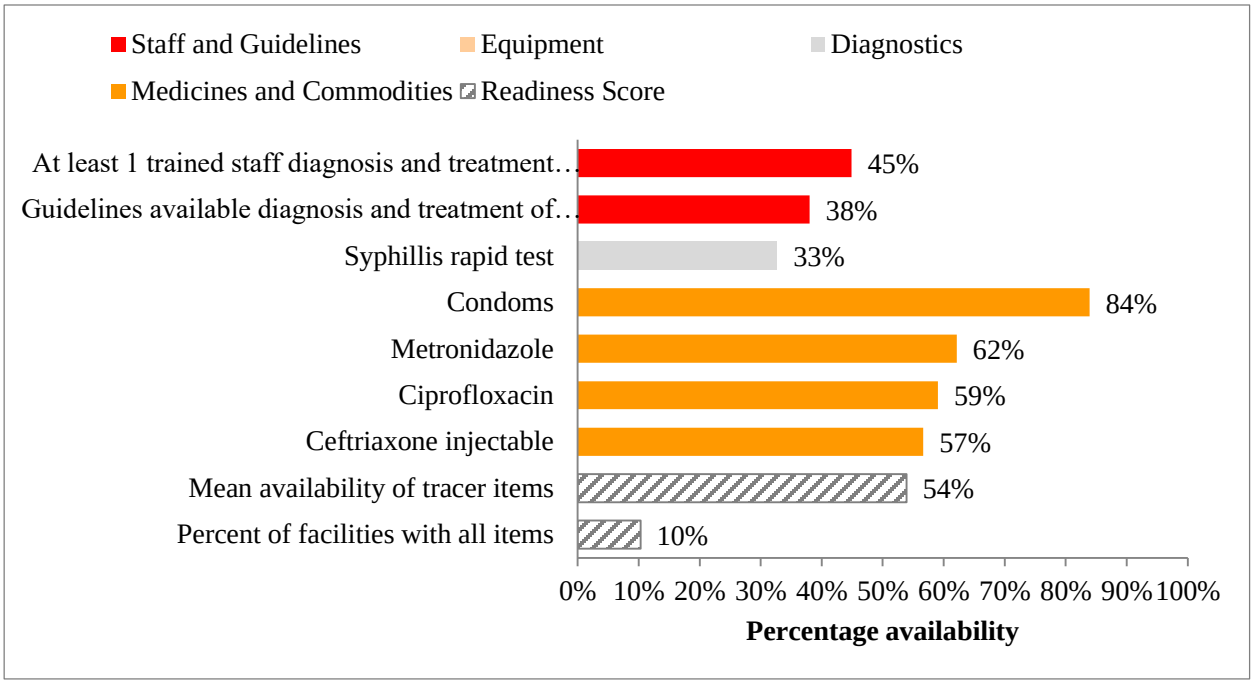


Figure 3.4.1 Percentage of facilities that have tracer items for STI services among facilities that provide this service, Ethiopia SARA 2016 (N=477)

Readiness score vary among the region from 39 percent of Gambella to 65 percent of Tigray and Somali. It is higher in government managed health facilities than others and also increases as the level of facility increases. Medicines and commodities such as Metronidazole, Ciprofloxacin, and Condoms were available in 84 percent, 59 percent, and 62 percent of the facility excluding Health posts respectively which is greater than Metronidazole 57 percent and Ciprofloxacin 53 percent of ESPA plus survey 2014. Almost half of facilities had staff trained in STI diagnosis and treatment (45percent), only 33 percent of facilities conducted syphilis testing on site which is greater than 25 percent of 2014 ESPA plus survey, and 38 percent of facilities had STI diagnosis and treatment Guidelines. Table 3.4.3 shows sexually transmitted infections service readiness.

Table 3.4. 3 Percentage of readiness of health facilities, excluding health posts that provide Sexually Transmitted Infections service, by region, Ethiopia SARA 2016 (N=477)

	Guidelines available diagnosis and treatment of STIs	At least 1 trained staff diagnosis and treatment of STIs	Syphilis rapid test	Condoms	Metronidazole	Ciprofloxacin	Ceftriaxone injectable	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Region										
Tigray	63	70	38	88	62	70	67	16	65	39
Afar	30	56	34	90	58	73	65	6	58	31
Amhara	34	45	30	89	67	64	64	4	56	54
Oromiya	40	45	32	91	67	62	67	22	58	80
Somali	26	27	63	79	92	93	76	13	65	41
Beni. Gumuz	49	59	29	100	73	68	59	6	62	24
S.N.N.P.	30	31	16	74	60	52	45	1	44	53
Gambella	26	27	34	94	31	36	25	6	39	27
Harrari	60	65	66	51	38	43	38	10	52	20
Addis Ababa	49	68	61	71	35	36	28	10	50	79
Dire Dawa	68	68	53	73	61	56	45	31	61	29

Facility type										
Referral hospital	71	71	65	100	100	100	97	35	86	31
General hospital	73	68	77	90	91	95	94	39	84	111
Primary hospital	55	64	60	96	98	100	98	25	82	55
Health centre	43	51	29	92	89	84	79	15	67	154
Higher clinic	34	42	90	73	17	21	17	7	42	22
Medium clinic	49	59	55	69	14	14	17	0	40	59
Lower clinic	9	11	1	70	17	12	15	0	19	45
Managing authority										
Governme nt	44	52	30	93	89	85	79	15	67	302
Other	29	34	37	69	17	15	19	2	31	175
Urban/Rural										
Urban	41	52	40	82	48	50	49	10	52	382
Rural	34	36	23	87	81	71	67	10	57	95
Total	38	45	33	84	62	59	57	10	54	477|

Percentage of facility with all items for health post is zero even though readiness score is 20%. Availability of condom and trained staff is 58 percent and 44 percent respectively. Table 3.4.4 sexually transmitted infections readiness at health posts.

Table 3.4. 4 Sexually Transmitted Infections readiness in health post, Ethiopia SARA, 2016

	Guidelines available diagnosis and treatment of STIs	At least 1 trained staff diagnosis and treatment of STIs	Syphilis rapid test	Condoms	Metronidazole	Ciprofloxacin	Ceftriaxone injectable	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Facility type										
Health posts	8	44	0	58	23	10	0	0	20	25
Managing authority										
Government	8	44	0	58	23	10	0	0	20	25
Urban/Rural										
Urban	0	100	0	100	100	100	0	0	57	1
Rural	8	44	0	58	22	9	0	0	20	24
Total	8	44	0	58	23	10	0	0	20	25

3.5. Tuberculosis

Key findings

- More than two-third (63 percent) of facilities excluding health posts and 36 percent of health posts offer TB services
- More than half (52 percent) of the facilities excluding health posts have the capacity to diagnose TB by sputum smear microscopy examination.
- Fifty-three percent of health facilities excluding Health posts have TB diagnostic testing
- Sixty-five percent of Health facilities excluding health posts have Guidelines available diagnosis & treatment of TB
- Sixty-seven percent of Health facilities excluding health posts and 74 percent for health post have At least 1 trained staff for the diagnosis & treatment of TB
- Among facilities excluding health posts,80 percent of them have a system for diagnosing HIV among TB clients

Ethiopia is one of the 22 high burden countries (HBCs) and TB remains one of the leading causes of mortality. According to the 2014 WHO report, the prevalence and incidence of all forms of TB are 211 and 224 per 100,000 of the population, respectively. Ethiopia is one of the high TB/HIV and multidrug resistant TB (MDR TB) burden countries. Among TB patients with known HIV status, about 11% were HIV co-infected. According to the recent national TB drug resistance surveillance report, 2.3% of new TB cases and 17.8% of previously treated TB cases were estimated to have MDR.

Considerable progress has been made in recent years in controlling and reducing the spread of TB. The implementation of DOTS in all public health facilities has become an effective way of supporting the monitoring and control of TB through programmes and sensitizations. The Millennium Development Goal with 6 targets on reducing the TB incidence rate has already been achieved in Ethiopia. Nationally, the TB incidence rate has fallen to 224 per 100,000 of the population in 2013 compared 369 in 1990. The target of halving TB prevalence rate by 2015 has also been met; TB prevalence rate has fallen by 50.5%. Ethiopia has also achieved the target of 50% reduction of TB mortality rate: by 2013, the national TB mortality rate had decreased by 64% (2014 WHO report).

Service availability

Table 3.5.1 shows the percentage of facilities offering tuberculosis services by Facility type, Managing authority and Urban/Rural. Overall, 63 percent of health facilities offered TB services, while 54 percent of the health facilities provide management and treatment follow-up for TB patients. Diagnosis of TB through X-ray (16 percent) and of MDR-TB through rapid test (GeneXpert MTB/RIF) (6 percent) is services provided by the health facilities at low scale.

Governmental Health facilities are more likely to provide TB services (93percent) compared with health facilities under other managing authority (30 percent). On the other hand, rural health facilities offered the highest percent of TB Services (74 percent) compared with urban health facilities (56 percent).

Figure 3.5.1 shows the Percentage of facilities that offered TB services by region. Based on this, facilities in Tigray region are more likely to provide the service (80 percent) and facilities in Gambella region (19percent) are the least.

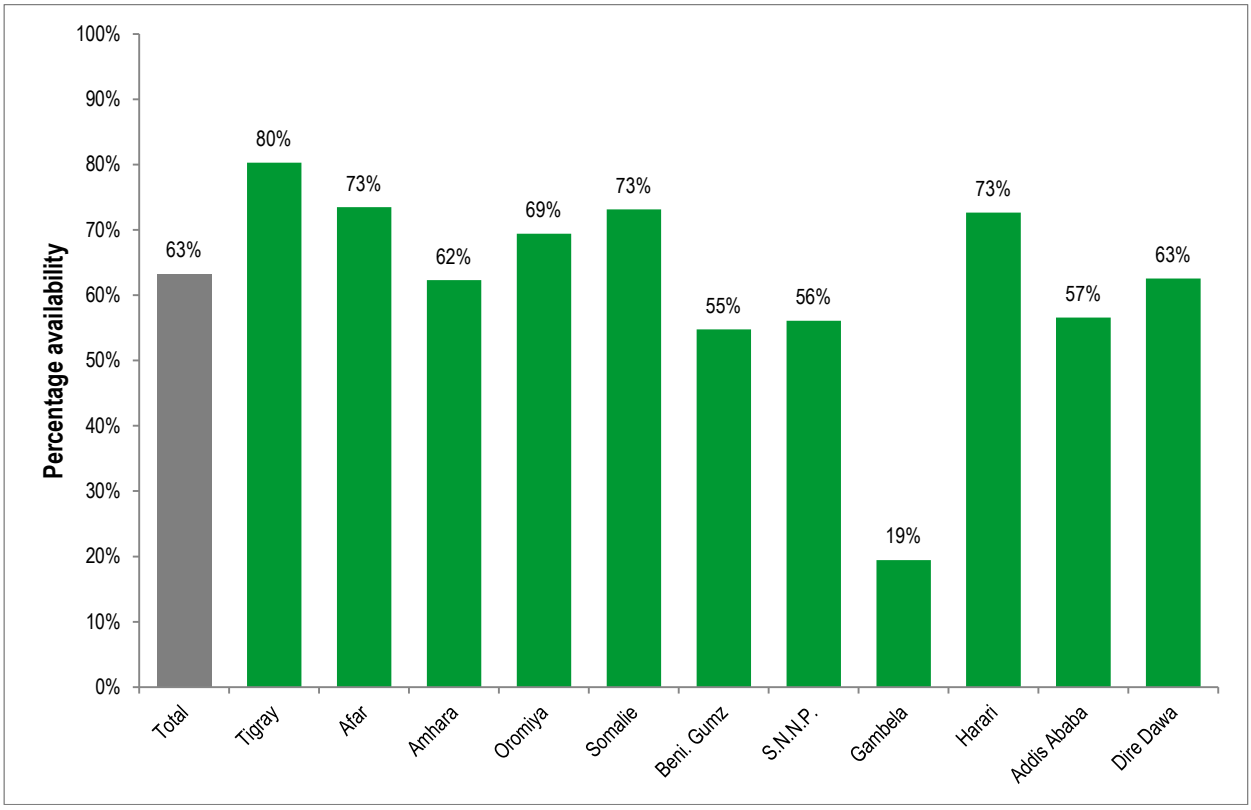


Figure 3.5.1: Percentage of facilities that offer tuberculosis services, by region, Ethiopia SARA 2016 (N=547)

Table 3.5. 1 Percentage of facilities that offer tuberculosis services, by region, Facility type, Managing authority, and residency , Ethiopia SARA 2016 (N=547)

Category	Offers TB services	TB diagnosis	TB diagnostic testing	TB diagnosis by clinical symptoms	TB diagnosis by sputum smear microscopy examination	TB diagnosis by culture	TB diagnosis by rapid test (Gene Xpert MTB/RIF)	TB diagnosis by chest X-ray	Prescription of drugs of TB patients	Provision of drugs to TB patients	Management and treatment follow-up for TB patients	Total number of facilities
Regions												
Tigray	80	80	76	46	76	7	7	24	62	55	67	42
Afar	73	66	58	53	58	5	2	23	55	55	55	38
Amhara	62	57	48	39	48	1	10	19	50	57	57	61
Oromiya	69	66	59	66	59	4	5	12	60	61	61	99
Somali	73	68	67	68	67	0	1	9	60	64	64	43
Beni. Gumuz	55	55	55	55	55	0	6	5	47	47	51	30
S.N.N.P.	56	56	45	56	42	0	1	7	50	50	50	61
Gambella	19	19	18	19	18	0	1	1	16	18	18	30
Harrari	73	73	73	66	73	12	14	12	57	25	25	23
Addis Ababa	57	57	53	56	53	9	14	43	33	30	30	91
Dire Dawa	63	57	57	57	57	0	7	24	49	52	57	29
Facility type												
Referral hospital	91	91	91	78	88	53	75	91	84	81	81	32
General hospital	90	86	85	76	85	32	58	85	84	86	87	117
Primary hospital	90	89	89	82	89	15	41	77	85	90	90	61
Health centre	95	89	83	77	82	3	8	16	89	93	94	165
Higher clinic	74	74	74	70	74	6	7	50	55	47	48	23
Medium clinic	50	50	49	50	49	0	3	28	22	19	21	64
Lower clinic	15	15	1	15	1	0	0	1	2	0	0	85
Managing authority												
Government	93	88	82	77	81	4	10	18	88	92	93	320
Other	30	30	21	29	21	1	2	13	13	10	11	227
Rural/Urban												
Urban	56	55	46	49	46	4	8	21	42	40	40	431
Rural	74	67	62	61	61	1	4	9	67	72	73	116
Total	63	60	53	54	52	3	6	16	52	53	54	547

Service readiness

The total of 403 health facilities offering TB services were also assessed on their readiness to provide TB service based on the availability of the twelve tracer items5in Table 3.5.2. Table 3.5.3 shows the availability of these tracer items by Region, Facility Type, Managing authority, and Urban/Rural.

Table 3.5.2: Tracer items required for service delivery, Ethiopia SARA 2016

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines for diagnosis and treatment of TB • Guidelines for management of HIV & TB co-infection • Guidelines related to MDR-TB treatment (or identification of need for referral) • Guidelines for TB infection control • Staff trained in TB diagnosis and treatment • Staff trained in management of HIV & TB co-infection • Staff trained in client MDR-TB treatment or identification of need for referral • Staff trained in TB Infection Control
Diagnostics	• TB microscopy • HIV diagnostic capacity • System for diagnosis of HIV among TB clients
Medicines & commodities	• First-line TB medications

Table 3.5. 3 Percentage of facilities that have tracer items for tuberculosis services among facilities that provide this service, Ethiopia SARA 2016 (N=403)

Category	Guidelines available diagnosis & treatment of TB	Guidelines available management of HIV & TB co-infection	Guidelines available MDR-TB	Guidelines available TB infection control	At least 1 trained staff diagnosis & treatment of TB	At least 1 trained staff management of HIV & TB co-infection	At least 1 trained staff MDR-TB	At least 1 trained staff TB infection control	TB microscopy	HIV diagnostic capacity	System for diagnosis of HIV among TB clients	All first-line TB medications	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions															
Tigray	71	76	50	72	70	65	48	65	51	30	76	74	1	62	36
Afar	56	40	1	39	73	46	13	63	44	36	57	75	0	45	27
Amhara	81	81	44	81	81	58	34	53	49	39	91	91	15	65	48
Oromiya	66	60	39	60	65	49	23	44	74	18	85	87	1	56	80
Somali	77	13	11	28	85	35	13	63	53	35	57	88	1	46	31
Beni. Gumuz	63	63	53	57	81	81	57	70	93	56	86	86	12	70	18
S.N.N.P.	48	38	17	32	53	33	23	27	85	48	74	89	11	47	45
Gambella	68	60	28	44	76	84	68	84	84	40	84	68	24	66	13
Harrari	53	50	44	44	54	57	29	44	81	18	57	34	0	47	19
Addis Ababa	52	46	33	47	53	50	41	44	79	21	60	54	5	48	64
Dire Dawa	58	56	33	35	78	74	73	65	89	35	74	83	4	63	22
Facility type															
Referral hospital	86	66	59	69	72	66	79	76	93	69	93	97	24	77	29
General hospital	89	81	66	66	70	69	72	58	94	64	92	96	23	76	105
Primary hospital	82	84	62	67	82	73	56	56	89	65	95	95	16	75	55
Health centre	75	67	39	65	77	55	32	51	67	35	92	99	8	63	154
Higher clinic	47	38	29	47	78	77	39	77	100	31	57	64	0	57	19
Medium clinic	42	42	14	39	28	16	1	16	94	16	55	38	0	33	30
Lower clinic	0	0	0	0	2	1	1	2	14	0	0	1	0	2	11
Managing authority															
Government	75	67	40	65	77	56	34	51	69	36	92	99	8	64	295
Other	31	28	14	28	32	26	12	26	68	16	38	33	1	29	108
Rural/Urban															
Urban	64	53	31	52	58	49	30	47	75	33	72	71	8	53	324
Rural	67	64	38	63	76	50	28	44	62	30	88	98	5	59	79
Total	65	58	34	57	67	49	29	46	68	31	80	84	7	56	403

Availability of first-line TB medications was high, with eighty-four percent of facilities having all first-line TB medications (Ionized, Pyrazinamide, Rifampicin, and Ethambutol, or combinations) to meet

the first-line TB regimen. There was considerable variation between managing authorities, with 99 percent of availability in Governmental facilities, and 33 percent in other facilities. More than 95 percent of hospitals and health centres had first line TB medications. The availability of guidelines on TB diagnosis and treatment was in 65 percent of the health facilities and availability of guidelines on HIV & TB co-infection somewhat lower 58 percent of the facilities. The supply of TB medicines to facilities is based on the number of TB-diagnosed patients registered in individual health facilities and is managed by the Health facilities.

Only 7 percent of facilities had all twelve tracer items for TB services. From Governmental Health Facilities Twenty-four percent of Referral hospitals had all twelve tracer items, compared with only 8 percent of health centres. Overall Health facilities readiness score was 56 percent. Referral Hospitals (77 percent) had a higher readiness score compared with lower clinics (2 percent). Figure 13 shows the readiness scores (mean availability of the twelve tracer items) by Region, as well as the mean availabilities of tracer items by domain.

The medicines domain tended to score highest across Benshangul Gumuz (70 percent), Gambella (66 percent), and Amahara (65 percent) compared with Afar Region (45 percent) and Somali (46 percent). Figure 3.5.3 shows Percentage of Health posts that have tracer items for tuberculosis services among Health posts that provide this service by region,Somale region(42 percent) had the highest compare with Addis Ababa,Benshangul Gumuz and Gambella zero percent.

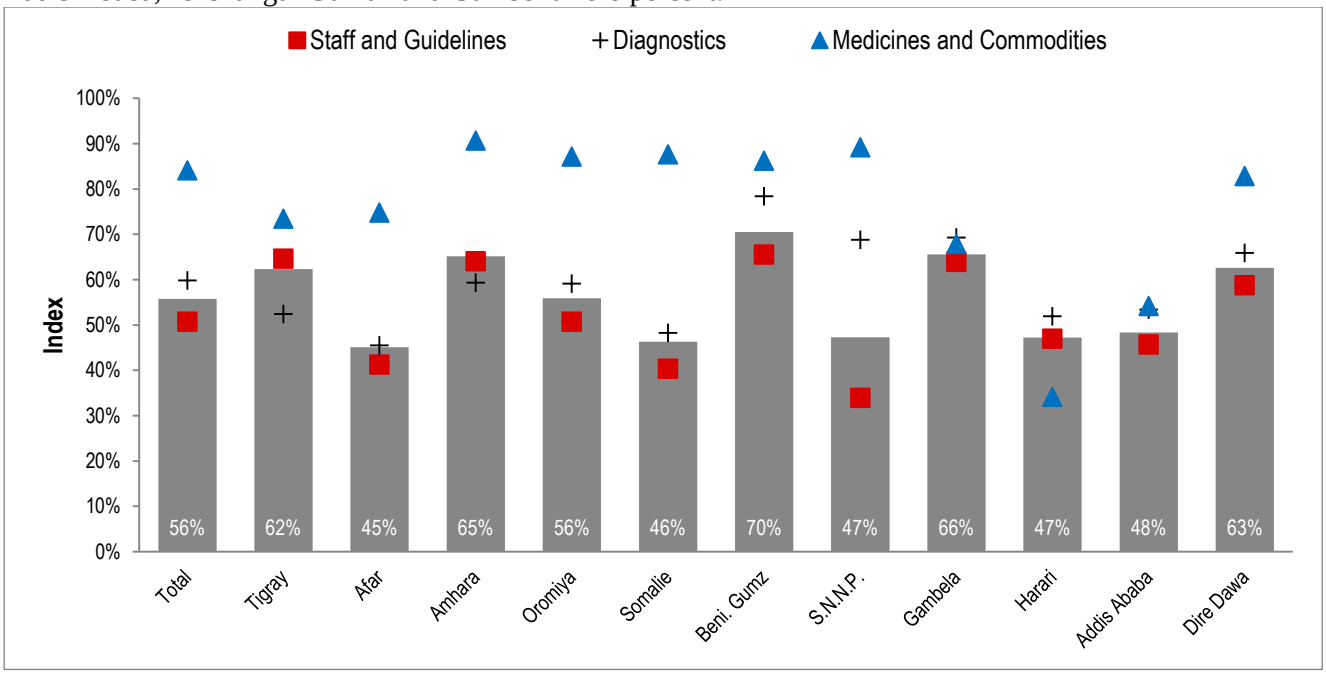


Figure 3.5.2 Percentage of facilities excluding Health posts that have tracer items for tuberculosis services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=403)

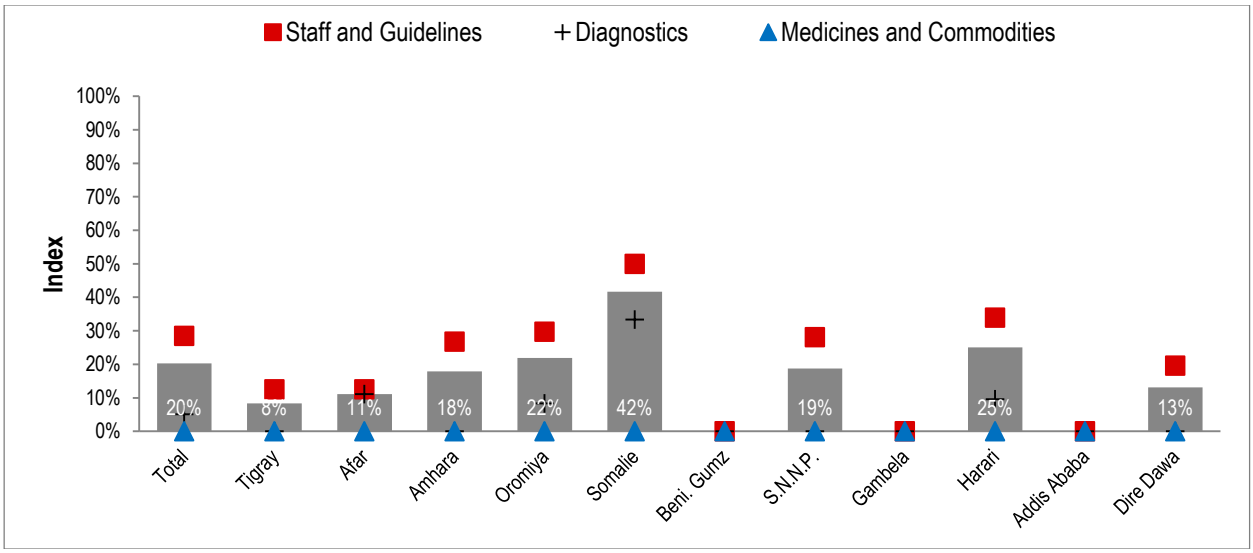


Figure 3.5.3 Percentage of Health posts that have tracer items for tuberculosis services among Health posts that provide this service, by region, Ethiopia SARA 2016 (N=39)

3.6. Malaria

Key findings

- Eighty-one percent of facilities excluding health posts and 74 percent of health posts offer diagnosis or treatment of malaria.
- Thirty four percent of facilities excluding health posts and 33 percent of Health posts had malaria Diagnosis and treatment guidelines
- Seventeen percent of health facilities excluding health posts and 47 percent of health posts have at least one trained staff to diagnose and treat malaria
- Sixteen percent of facilities excluding health posts and 33 percent of Health posts report that they had ITNs.
- First-line anti-malarial medicines were available in close to four of every ten (41 percent) facilities excluding health posts.
- Health facilities excluding health post have Readiness Score of 42 percent

Seventy-five percent of landmass of Ethiopia is considered at risk of malaria, which corresponds to areas below 2,000m altitude and is a major cause of morbidity and mortality. It is by far the most common reason for visits to health facilities. The number of malaria deaths fell from an estimated 67 (3 percent) in 2010, to 77 (1.16 percent) in 2015 a decline of 1.84 percent in under five children. Pregnant women and people infected with HIV are also particularly vulnerable to malaria. Since 2004/ 2005 the national first line ant malarial treatment has been artemether-lumefantrine (ART-LUM), artemisinin-based combination therapy (ACT), while quinine is used for the treatment and prevention of malaria in pregnancy in the first trimester. National Strategic Plan for Malaria Prevention ,Control and Elimination in Ethiopia 2011-2015aims to significantly scale up malaria control interventions such as the distribution of insecticide treated nets (ITNs), indoor residual spraying, case management, and information education communication and advocacy.(National Strategic Plan for Malaria Prevention ,Control and Elimination in Ethiopia 2011-2015).

Service availability

Table 3.6.1 shows the percentage of facilities offering malaria services by Region, Facility type, Managing authority and Urban/Rural. Almost all Governmental Health facilities provided malaria diagnosis or treatment services (98percent) and provision of malaria services across all regions was greater than 80 percent except Amhara region which is 68 percent.

Among the total health facilities assessed, 69 percent of them perform Malaria diagnosis by clinical symptoms followed by microscopy (54 percent) and RDT (39 percent).

Table 3.6. 1 Percentage of facilities that offer malaria services, by region, Ethiopia SARA 2016 (N=547)

Category	Offer diagnosis or treatment of malaria	Malaria diagnosis	Malaria diagnosis testing	Malaria diagnosis by clinical symptoms	Malaria diagnosis by RDT	Malaria diagnosis by microscopy	Malaria treatment	Total number of facilities
Regions								
Tigray	93	93	90	52	43	78	90	42
Afar	100	100	98	100	83	77	100	38
Amhara	68	68	59	42	29	45	68	61
Oromiya	82	82	63	78	46	48	80	99
Somali	98	98	98	98	73	77	98	43
Beni. Gumuz	89	85	70	85	29	66	81	30
S.N.N.P.	82	82	62	74	29	53	80	61
Gambella	89	89	73	89	54	43	89	30
Harrari	93	93	91	75	34	91	93	23
Addis Ababa	93	90	76	89	42	73	90	91
Dire Dawa	84	84	84	60	39	79	84	29
Facility type								
Referral hospital	97	97	97	91	3	97	97	32
General hospital	95	94	91	83	31	90	95	117
Primary hospital	90	90	90	82	18	90	90	61
Health centre	99	99	92	78	61	72	97	165
Higher clinic	84	84	84	77	37	84	81	23
Medium clinic	100	97	94	96	38	92	100	64
Lower clinic	47	46	12	44	7	6	43	85
Managing authority								
Government	98	98	91	78	58	72	97	320
Other	63	63	39	59	18	35	61	227
Rural/Urban								
Urban	80	80	61	74	28	57	78	431
Rural	83	83	74	63	54	50	81	116
Total	81	81	67	69	39	54	80	547

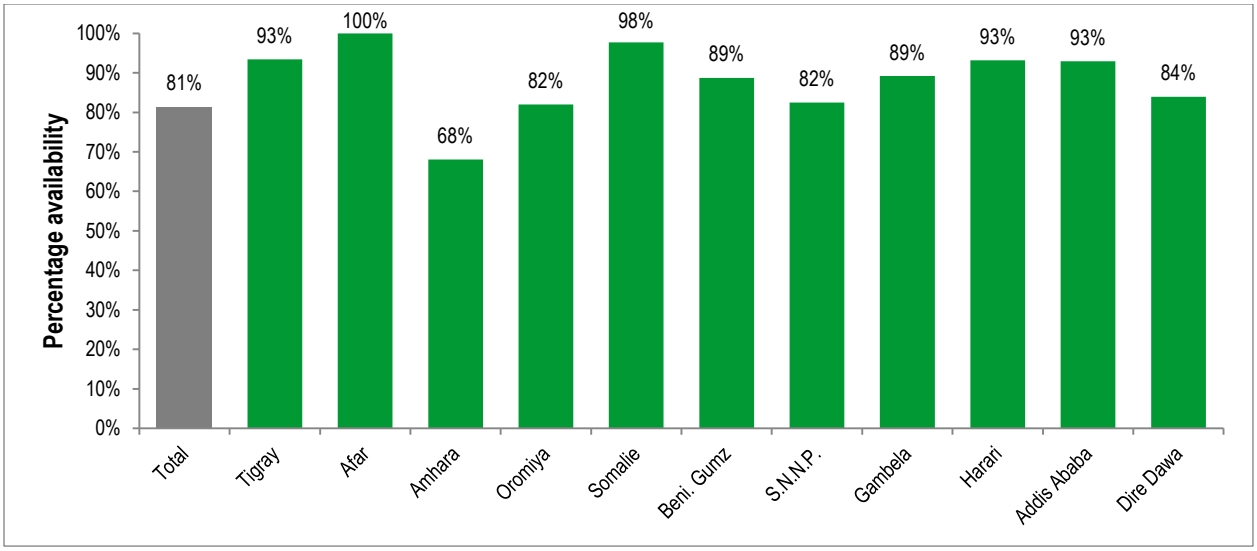


Figure 3.6.1: Percentage of facilities that offer malaria services, by region, Ethiopia SARA 2016 (N=547)

According to Figure 3.6.1, over all facilities that offer diagnosis or treatment of malaria is 81 percent.

Service readiness

Facilities offering malaria services (493 facilities) were assessed on their readiness to provide the service based on the availability of the nine tracer items in Table 17. Table18 shows the availability of these tracer items by Region, Type of facilities, Managing authority, and Urban/Rural.

Table 3.6.2: Tracer items required for service delivery

Domains	Tracer items (% of facilities with item)
Trained staff and guidelines	• Guidelines for diagnosis and treatment of malaria • Guidelines for IPT • Staff trained in malaria diagnosis and treatment • Staff trained in IPT
Diagnostics	• Malaria diagnostic capacity
Medicines & commodities	• First-line ant malarial in stock • Paracetamol cap/tab • IPT drug • ITN

Table 3.6. 2 Percentage of facilities that have tracer items for malaria services among facilities that provide this service, Ethiopia SARA 2016 (N=493)

Category	Guidelines available diagnosis and treatment of malaria	At least 1 trained staff diagnosis and treatment of malaria	Malaria diagnostic capacity	First-line antimalarial in-stock	Paracetamol cap/tab	ITN	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions									
Tigray	59	26	83	58	71	10	5	51	40
Afar	14	15	89	71	79	19	1	48	38
Amhara	39	13	83	52	83	22	0	49	49
Oromiya	39	18	72	42	74	18	4	44	85
Somali	13	18	89	62	90	72	0	57	40
Beni. Gumuz	27	34	63	54	83	31	4	49	27
S.N.N.P.	25	18	61	33	64	7	3	35	54
Gambella	27	23	80	39	42	12	3	37	28
Harrari	30	24	96	13	41	9	2	35	22
Addis Ababa	31	15	69	7	35	0	0	26	84
Dire Dawa	37	29	68	55	81	41	15	52	26
Facility type									
Referral hospital	35	19	90	55	100	10	3	52	31
General hospital	32	9	93	53	98	15	0	50	111
Primary hospital	35	24	84	78	100	24	2	57	55
Health centre	41	20	87	60	97	26	4	55	164
Higher clinic	17	7	97	7	31	2	1	27	22
Medium clinic	41	21	82	8	19	0	0	29	62
Lower clinic	13	9	13	6	20	0	0	10	48
Managing authority									
Government	40	20	86	60	97	25	4	55	309
Other	25	13	51	8	22	1	0	20	184
Urban/Rural									
Urban	33	20	66	28	55	7	1	35	390
Rural	36	15	82	57	90	28	5	51	103
Total	34	17	73	41	69	16	3	42	493

Availability of ACT, the first line treatment for malaria was only in 41 percent of the health facilities, and was generally high across governmental facilities (60 percent) compared with facilities under other managing authority (8 percent).

Addis Ababa city Administration had a lower (7percent) availability of first-line antimalarial in-stock compared with Afar region (71percent). Almost in all governmental health facilities (97percent) had paracetmol, but availability was lower among facilities under other managing authority (22percent).

At all health facilities providing malaria services, the availability of ITNs were low (16 percent). Seventy-three percent of the facilities were able to diagnosis malaria (RDT or blood slide). Availability of

guidelines on malaria diagnosis and treatment was 34 percent. Staff trained in malaria diagnosis and treatment is also low (17percent).

According to figure 3.6.2, overall mean availability of tracer items was 42 percent in which the highest proportion goes to Somali region (57 percent) while the lowest to Addis Ababa (26 percent).

On average, facilities had three of the nine tracer items, for an overall readiness score of 42 percent. Hospitals had a higher overall readiness score (53 percent), and generally showed higher availability for all tracer items compared with Lower clinic (10 percent).

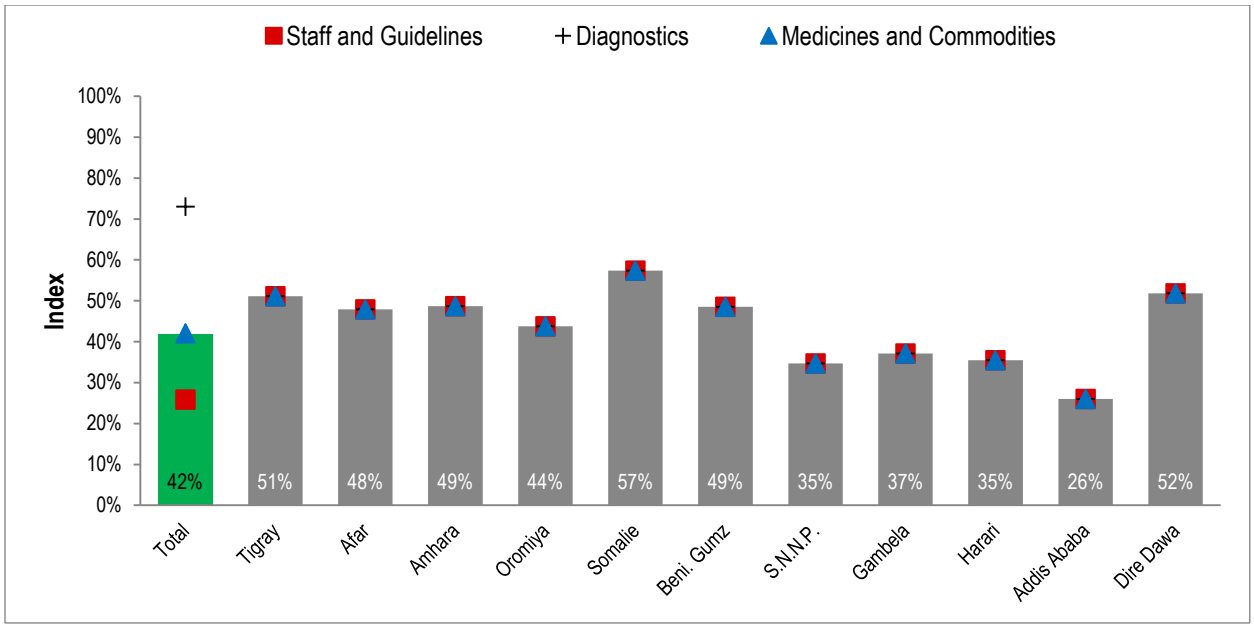


Figure 3.6.2 Percentage of facilities that have tracer items for malaria services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=493)

Figure 3.6.3 shows Percentage of Health posts that have tracer items for malaria services among Health posts that provide this service, by region.

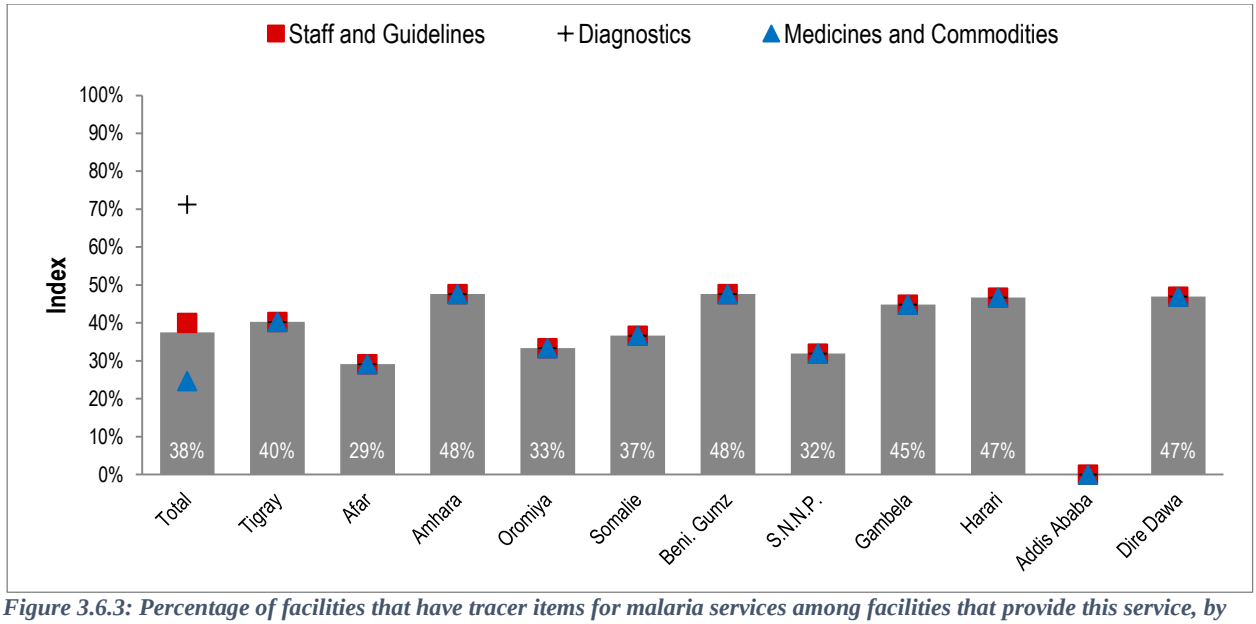


Figure 3.6.3: Percentage of facilities that have tracer items for malaria services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=122)

3.7. Non-Communicable Diseases

Non-communicable diseases (NCDs) are the leading causes of death and disability globally, killing more than three in five people worldwide and responsible for nearly half of the global burden of disease(1). 80% of NCDs deaths occur in low and middle income countries. The four main types of non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancer, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. Non-communicable diseases are preventable through effective interventions that tackle shared risk factors, namely: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol (2).

In order to improve health care services for NCDs, WHO recommended countries to integrate NCDs into primary health care by expanding the package of PHC services to include NCD "best and good buys" identified in the Global Report and strengthen health systems and address the gaps in building blocks, particularly health financing, access to medicines, health information, and the health workforce (WHO).

In the 2013 Ethiopian HSDP IV annual performance report, the major activities performed in 2013 were reported as follows:

- Establishment of NCD unit at FMOH;
- In collaboration with a partner, screening for cervical cancer has been started in 25 hospitals in five regions(Tigray, Amhara, Oromia, SNNP, and Addis Ababa);
- The national quantification document for chemotherapy drugs has been formulated;
- The national comprehensive design for radiotherapy and nuclear medicine site expansion has been prepared;
- Population-based cancer registry has been established under Black Lion Specialized Teaching Hospital in collaboration with a partner;
- Piloting of Mental Health Gap Action Program (mhGAP) was done in 20 primary health care (PHC) facilities in four regions of the country (Tigray, Amahara, Oromia and SNNP).

The results from the 2014 Ethiopian Service Provision Assessment Survey (ESPA, 2014) show, among all health facilities that offer services for non-communicable diseases, the proportion of facilities offering services specifically for: chronic respiratory disease, cardiovascular diseases, diabetes, and cancer were 76, 73, 59, and 23 percent respectively. But overall, the availability of guidelines for all non-communicable disease was quite low. In general, the availability of guidelines for diagnosis and management of; chronic respiratory diseases, diabetes, cardiovascular diseases, and cancer was 15 percent, 12 percent, 11 percent, and 7 percent respectively. And the availability of trained staff on diagnosis and treatment of; chronic respiratory diseases, cardiovascular diseases, diabetes, and cancer was only 9 percent, 8 percent, 6 percent, and 4 percent respectively. However, the difference observed between ESPA, 2014 report and this survey is because of; in ESPA 2014, the result of specific NCD service availability is analysed only among facilities that are giving NCD service; while in this survey, the result is analysed from all facilities assessed by the survey regardless of their NCD service offering status.

Key findings
• Overall, among all health facilities excluding health posts offering service for NCDs, the availability of diagnosis and/or management of; diabetes, cardiovascular disease, chronic respiratory disease and cervical cancer were 22 percent, 41 percent, 45 percent and 2 percent respectively. • Overall, among all NCDs, service for Cervical Cancer diagnosis was least frequently available; only 2 in 10 facilities excluding health posts offered the service. • Among all health facilities excluding health posts offering services for NCDs, the availability of trained staff for: diabetes, cardiovascular disease, chronic respiratory disease and cervical cancer diagnosis and treatment was 10 percent, 7 percent, 8 percent and 61 percent respectively.

3.7.1 Diabetes disease

Service availability

Table 3.7.1 shows, the percentage of facilities offering diabetes diagnosis and/or management services by Region, managing authority, facility type and urban/rural.

Overall, only twenty two percent of health facilities excluding health posts reported offering diabetes diagnosis and/or management services. While comparing between the regions, diabetes diagnosis and/or management services was widely available in Dire Dawa (82 percent) and less available in Amhara (13 percent) region. There is also great variation in the availability of this service between facility types (ranging from 91 percent in referral hospitals, only 5 percent in lower clinics); and diabetes diagnosis and/or management services was more likely available in facilities located in urban areas (35 percent) than facilities in rural areas (5 percent); and less likely available in government facilities (19 percent) compared with other managing authorities (26 percent). (Table 3.7.1)

Table 3.7. 1 Percentage of facilities that offer diabetes services, by region, facility type, managing authority, and urban/rural, Ethiopia, SARA 2016

	Diabetes diagnosis and/or management	Total number of facilities
Regions		
Tigray	29	42
Afar	35	38
Amhara	13	61
Oromiya	15	99
Somali	24	43
Beni. Gumuz	20	30
S.N.N.P.	16	61
Gambella	34	30
Harrari	55	23
Addis Ababa	68	91
Dire Dawa	82	29
Facility type		
Referral hospital	91	32
General hospital	90	117
Primary hospital	89	61
Health center	16	165
Higher clinic	69	23
Medium clinic	65	64
Lower clinic	5	85
Managing authority		
Government	19	320
Other	26	227
Urban/Rural		
Urban	34	431
Rural	5	116
Total	22	547

Service Readiness

Readiness to provide diabetes services was assessed based on the presence of the thirteen tracer items in Table 3.7.2.

Table 3.7. 2 SARA tracer items for diabetes service readiness, Ethiopia, SARA 2016

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diabetes diagnosis and treatment • Staff trained in diabetes diagnosis and treatment
Equipment	• Blood pressure apparatus • Adult scale • Measuring tape (height board/ stadiometre)
Diagnostics	• Blood glucose • Urine dipstick- protein • Urine dipstick- ketones
Medicines & commodities	• Metformin cap/tab • Glibenclamide cap/tab • Insulin regular injectable • Glucose 50% injectable • Gliclazide tablet or glipizide tablet

Figure 3.7.1 shows the percentage availability of these tracer items at facilities that offering diabetes diagnosis and/or management services excluding health posts.

In general, among health facilities that offering diabetes diagnosis and/or management services, none of them had all thirteen items; on average, 53 percent of facilities had seven of the thirteen items. Almost all health facilities, excluding health posts had blood pressure apparatus, and adult scale (100 percent, and 97 percent respectively). However, only few health facilities had guidelines (16 percent), and staff trained in the past two years (10 percent) in diabetes diagnosis and treatment during the survey. Availability of medicines was also low, among facilities providing diabetes services, the availability of injectable insulin, and Gliclazide tablet or glipizide tablet in stock (only 18 percent, and 4 percent respectively) on the day of the assessment. (Figure 3.7.1)

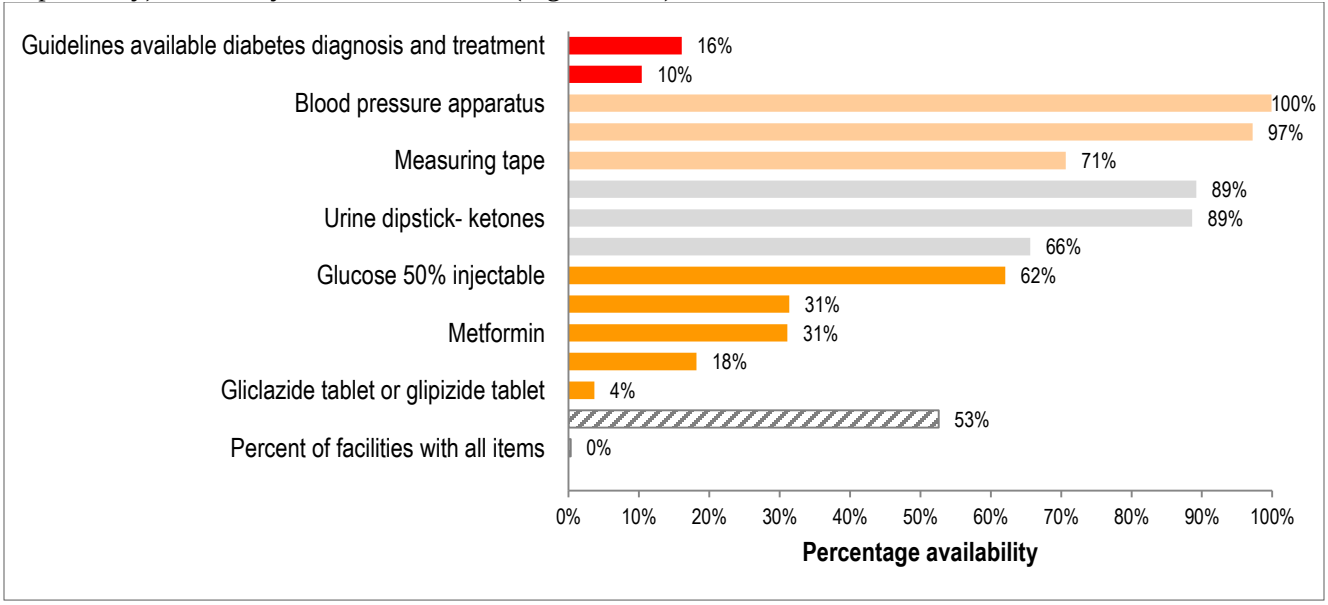


Figure 3.7. 1 Percentage of facilities that have tracer items for diabetes services among facilities that provide this service, Ethiopia SARA 2016

3.7.2 Cardiovascular disease

Service availability

Table 3.7.3 shows the percentage of facilities offering cardiovascular disease diagnosis and/or management services by Region, managing authority, facility type, and urban/rural.

Overall, about four out of ten health facilities, excluding health posts reported offering cardiovascular disease diagnosis and/or management services. While comparing between the regions, cardiovascular disease diagnosis and/or management services was widely available in Dire Dawa (82 percent), and less available in Gambela, and S.N.N.P (30 percent each) region (Figure 3.7.2). Cardiovascular disease diagnosis and/or management services was more likely available in hospitals settings than other facility types; and government facilities (51 percent) are more likely to offer this service compared with other managing authorities (30 percent); However, there was no much difference between facilities in urban areas (43 percent), and in rural areas (38 percent) in providing this service. (Table 3.7.3)

Table 3.7. 3 Percentage of facilities that offer cardiovascular disease services by region, facility type and managing authority, Ethiopia, SARA 2016

	Offers cardiovascular disease diagnosis and/or management	Total number of facilities
Regions		
Tigray	36	42
Afar	43	38
Amhara	33	61
Oromiya	45	99
Somali	40	43
Beni. Gumuz	63	30
S.N.N.P.	30	61
Gambella	30	30
Harrari	71	23
Addis Ababa	68	91
Dire Dawa	82	29
Facility type		
Referral hospital	84	32
General hospital	92	117
Primary hospital	89	61
Health center	50	165
Higher clinic	61	23
Medium clinic	71	64
Lower clinic	10	85
Managing authority		
Government	51	320
Other	30	227
Urban/Rural		
Urban	43	431
Rural	38	116
Total	41	547

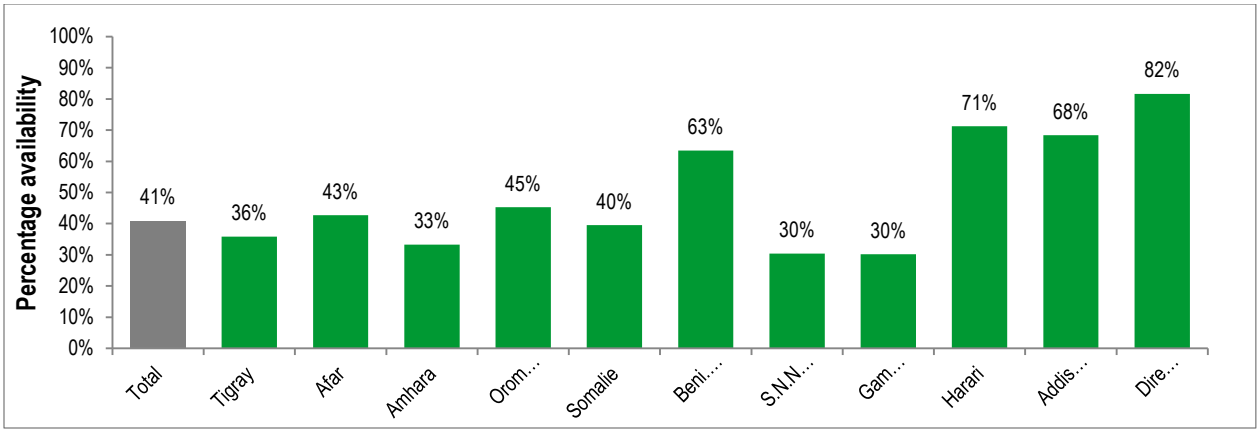


Figure 3.7. 2 Percentage of facilities that offer cardiovascular disease services, by region, Ethiopia, SARA 2016

Service Readiness

Readiness to provide cardiovascular disease services was assessed based on the presence of the twelve tracer items in Table 3.7.4.

Table 3.7. 4 SARA tracer items for cardiovascular disease services, Ethiopia, SARA 2016

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and treatment of chronic cardiovascular conditions • Staff trained in diagnosis and management of chronic cardiovascular conditions
Equipment	• Stethoscope • Blood pressure apparatus • Adult scale • Oxygen
Medicines & commodities	• ACE inhibitors (e.g. enalapril) • Hydrochlorothiazide tablet or other thiazide diuretic tablet • Beta blockers (e.g. atenolol) • Calcium channel blockers (e.g. amlodipine) • Aspirin cap/tabs • Metformin cap/tabs

Overall, among facilities that were providing cardiovascular disease services, only one percent of them had all twelve items; on average, 41 percent of facilities had six of the twelve items. Few facilities had guidelines (nine percent), and staff trained in the past two years (seven percent) in diagnosis and/or management of cardiovascular conditions. Availability of medicines was also low: only about half of facilities providing health services for cardiovascular conditions had aspirin in stock on the day of the assessment, and availability of other medicines was even lower. Availability of equipment items (stethoscope, blood pressure apparatus, and adult scale) was high (100 percent, 100 percent, and 88 percent respectively); however, these items are not specific to diagnosing and managing cardiovascular conditions. (Figure 3.7.3)

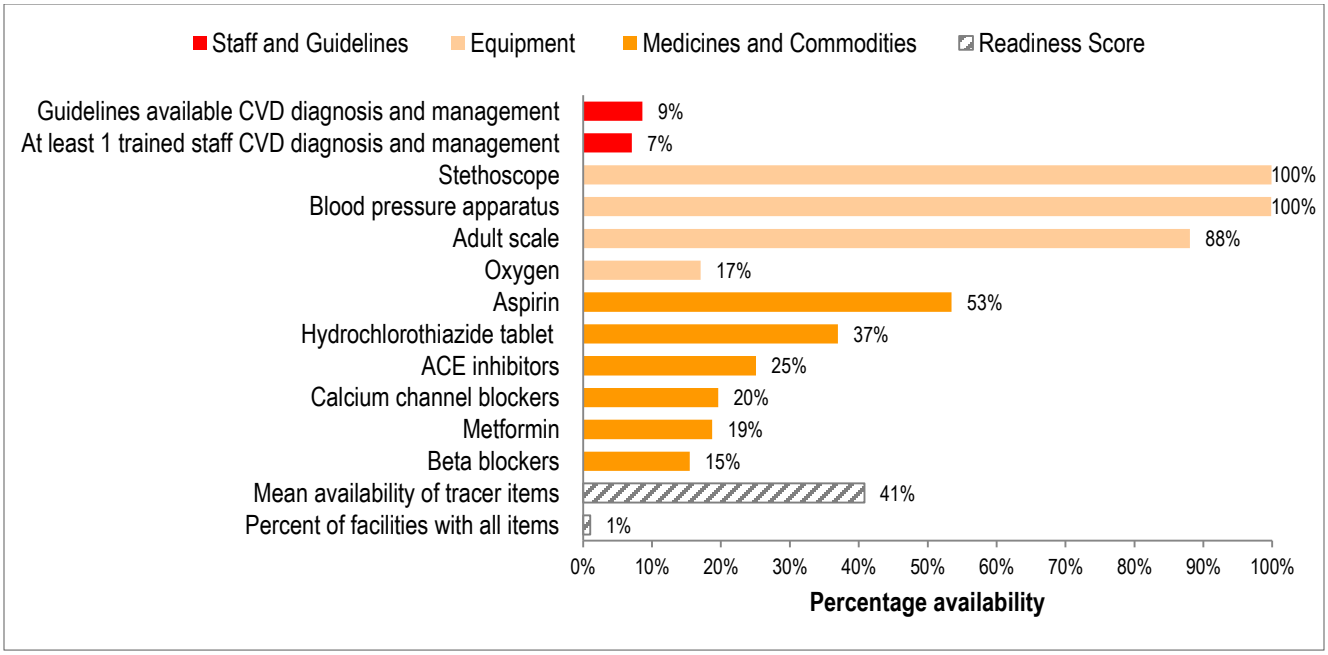


Figure 3.7. 3 Percentage of facilities that have tracer items for cardiovascular disease services among facilities that provide the service, Ethiopia, SARA 2016

3.7.3 Chronic respiratory disease

Service availability

In general, forty five percent of facilities, excluding health posts reported offering chronic respiratory disease diagnosis and/or management services. While comparing between the facility type, cardiovascular disease diagnosis and/or management services was more likely available in hospitals than other facility types (varying from 92 percent in general hospitals to only 11 percent in lower clinics). And also this service was more likely available in government facilities compared with other managing authority (56 percent, and 33 percent respectively); however, there was no observed difference between facilities in urban and rural areas in chronic respiratory disease diagnosis and/or management services. (Table 3.7.5)

Table 3.7. 5 Percentage of facilities that offer chronic respiratory disease services, by region, facility type and managing authority, Ethiopia, SARA 2016

	Offers chronic respiratory disease diagnosis and/or management	Total number of facilities
Regions		
Tigray	56	42
Afar	53	38
Amhara	27	61
Oromiya	58	99
Somali	40	43
Beni. Gumuz	70	30
S.N.N.P.	28	61
Gambella	57	30
Harrari	46	23
Addis Ababa	75	91
Dire Dawa	82	29
Facility type		
Referral hospital	91	32
General hospital	92	117

Primary hospital	89	61
Health center	55	165
Higher clinic	69	23
Medium clinic	76	64
Lower clinic	11	85
Managing authority		
Government	56	320
Other	33	227
Urban/Rural		
Urban	45	431
Rural	45	116
Total	45	547

Service readiness

Readiness to provide health services for chronic respiratory disease (CRD) was assessed based on the presence of the eleven tracer items in Table 3.7.6.

Table 3.7. 6 SARA tracer items for chronic respiratory disease Ethiopia, SARA 2016

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and management of CRD • Staff trained in diagnosis and management of CRD
Equipment	• Stethoscope • Peak flow meter • Spacers for inhalers • Oxygen
Medicines & commodities	• Salbutamol inhaler • Beclomethasone inhaler • Prednisolone cap/tabs • Hydrocortisone cap/tabs • Epinephrine injectable

Figure 3.7.5 shows, the percentage availability of these tracer items at facilities that offered diagnosis and/or management of chronic respiratory disease.

In general, among health facilities excluding health posts that offered diagnosis and/or management of chronic respiratory disease, No facility had all eleven items; on average, approximately three out of ten health facilities had six of the eleven items. Availability of medicines was low: epinephrine injectable had the highest availability in this category, but were present in only about half (54 percent) of facilities providing CRD services. However equipment like: stethoscope was available in all health facilities, but equipment items more specific to treating CRDs such as: oxygen, peak flow meters, and spacers for inhalers (15 percent, and 5 percent, and 4 percent respectively) had low availability (Figure 3.7.4). Except stethoscope the other ten tracer items were uniformly less likely available in all regions. (Table 3.7.7)

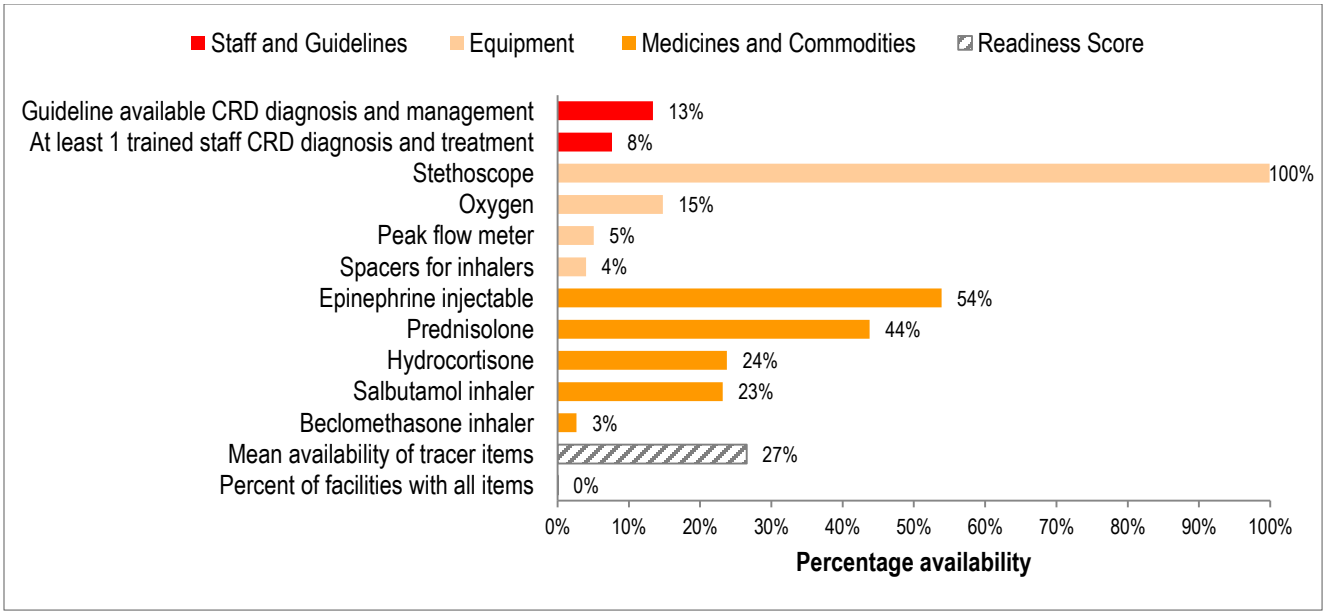


Figure 3.7. 5 Percentage of facilities that have tracer items for chronic respiratory disease services among facilities that provide the service, Ethiopia, SARA 2016

Table 3.7. 7 Percentage of facilities that have tracer items for chronic respiratory disease services among facilities that provide this service, by region, facility type and managing authority, Ethiopia, SARA 2016

	Guideline available CRD diagnosis and management	At least 1 trained staff CRD diagnosis and treatment	Stethoscope	Peak flow meter	Spacers for inhalers	Oxygen	Salbutamol inhaler	Beclomethasone inhaler	Prednisolone	Hydrocortisone	Epinephrine injectable	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions														
Tigray	8	0	100	6	5	4	28	2	28	21	44	0	22	31
Afar	6	6	100	6	5	5	18	2	30	34	67	0	25	22
Amhara	22	12	100	3	2	3	35	3	58	26	47	0	28	35
Oromiya	13	7	100	1	1	15	21	1	48	23	48	0	25	73
Somali	0	5	100	12	13	14	38	6	60	42	72	0	33	28
Beni. Gumuz	5	5	95	3	2	0	33	2	69	32	55	0	27	22
S.N.N.P.	0	0	100	1	1	3	13	4	36	15	79	0	23	35
Gambella	0	9	100	1	1	4	16	4	19	19	16	0	17	15
Harrari	0	0	100	19	24	46	43	19	66	51	51	0	38	13
Addis Ababa	27	17	100	20	14	41	19	4	30	24	57	0	32	74
Dire Dawa	2	4	100	26	15	39	26	11	47	59	63	0	36	24
Facility type														
Referral hospital	21	24	100	55	55	62	41	66	97	93	97	0	65	29
General hospital	18	8	100	40	34	65	61	38	95	93	96	1	59	108
Primary hospital	13	13	100	24	24	61	74	39	94	89	91	0	57	54
Health center	15	8	100	1	1	11	26	0	58	24	58	0	27	94
Higher clinic	28	9	100	23	11	50	22	1	30	30	42	0	31	20
Medium clinic	3	9	100	5	5	5	11	1	3	10	44	0	18	44
Lower clinic	9	1	100	0	1	1	5	0	3	3	30	0	14	23
Managing authority														
Government	15	8	100	3	3	14	27	3	60	27	60	0	29	233

Other	11	7	100	9	6	16	16	3	14	18	42	0	22	139
Urban/Rural														
Urban	13	6	100	9	7	21	27	4	45	33	59	0	29	314
Rural	14	10	100	0	0	7	17	0	42	11	46	0	23	58
Total	13	8	100	5	4	15	23	3	44	24	54	0	27	372

3.7.4 Cervical cancer

Service availability

Overall, only two out of ten health facilities, excluding health posts reported offering cervical cancer diagnosis and/or management services. Cervical cancer diagnosis and/or management services was more likely available in hospitals compared with other facility types. And also relatively was more likely available in government facilities compared with other managing authority (3 percent, and 1 percent respectively); however, this service was low in all regions (the highest is 14 percent in Harari, and the least is 0 percent in Afar, Oromiya, and Ben. Gumuz). (Table 3.7.8), (Figure 3.7.5)

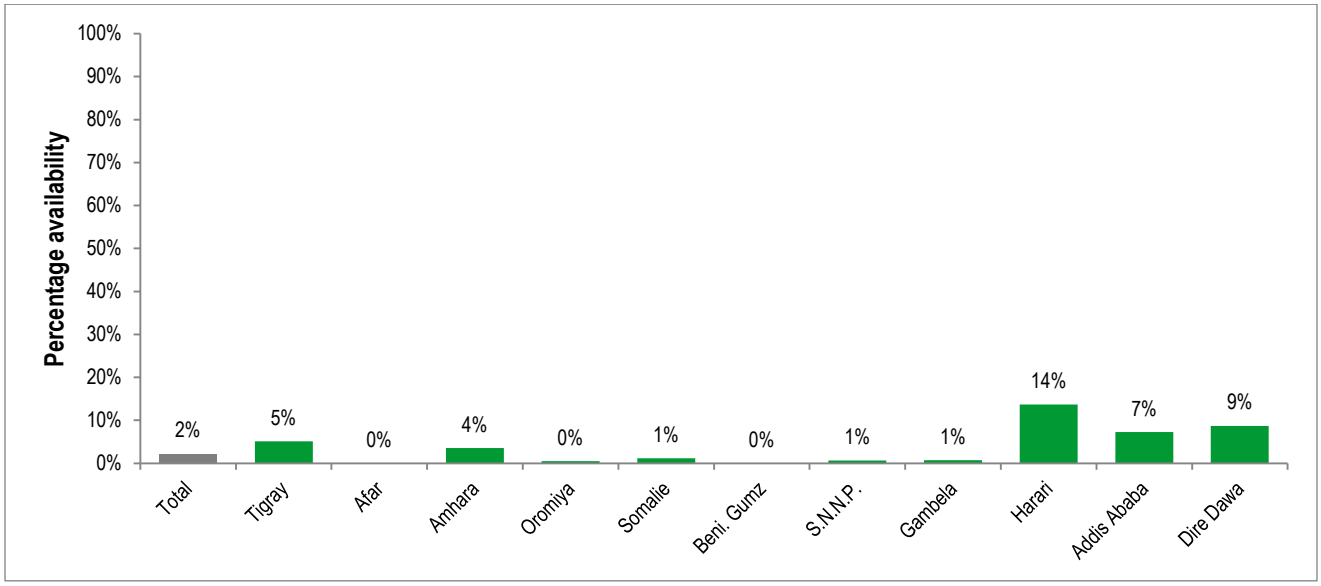


Figure 3.7. 6 Percentage of facilities that offer cervical cancer services, by region, Ethiopia, SARA 2016

Table 3.7. 8 Percentage of facilities that offer cervical cancer services by region, facility type and managing authority, Ethiopia, SARA 2016

	Offers cervical cancer diagnosis	Total number of facilities
Regions		
Tigray	5	42
Afar	0	38
Amhara	4	61
Oromiya	0	99
Somali	1	43
Beni. Gumuz	0	30
S.N.N.P.	1	61
Gambella	1	30
Harrari	14	23
Addis Ababa	7	91
Dire Dawa	9	29
Facility type		

Referral hospital	56	32
General hospital	38	117
Primary hospital	10	61
Health center	2	165
Higher clinic	4	23
Medium clinic	1	64
Lower clinic	0	85
Managing authority		
Government	3	320
Other	1	227
Urban/Rural		
Urban	4	431
Rural	0	116
Total	2	547

Service readiness

Readiness to provide health services for cervical cancer services was assessed based on the presence of the four tracer items in Table 3.7.9.

Table 3.7. 9 SARA tracer items for cervical cancer services, Ethiopia, SARA 2016

Domains	Tracer items (% of facilities with item)
Guidelines & Staff training	• Guidelines for cervical cancer prevention and control • Staff trained in cervical cancer prevention and control
Equipment	• Speculum
Diagnostics	• Acetic acid

Figure 3.7.6 shows, the percentage availability of these tracer items at facilities that offered diagnosis and/or management of cervical cancer.

In general, among health facilities that are providing diagnosis and/or management of cervical cancer, about five out of ten health facilities had all four items; on average, 72 percent of facilities had two out of the four items. Six out of ten facilities had staff trained in cervical cancer prevention and control, and about five out of ten had guidelines for cervical cancer prevention and control. Almost all of the facilities (96 percent) had a speculum, and 77 percent of facilities had acetic acid (Figure 3.7.6). Comparing between regions, readiness to provide diagnosis and/or management of cervical cancer in terms of: staff trained in cervical cancer prevention and control, and guidelines for cervical cancer prevention and control is higher in Gambella and Amhara region (100 percent, and 89 percent), while in other regions it is very low. And also it is observed that, all clinic types are unlikely to have staff trained in cervical cancer prevention and control, and guidelines for cervical cancer prevention and control. (Table 3.7.10)

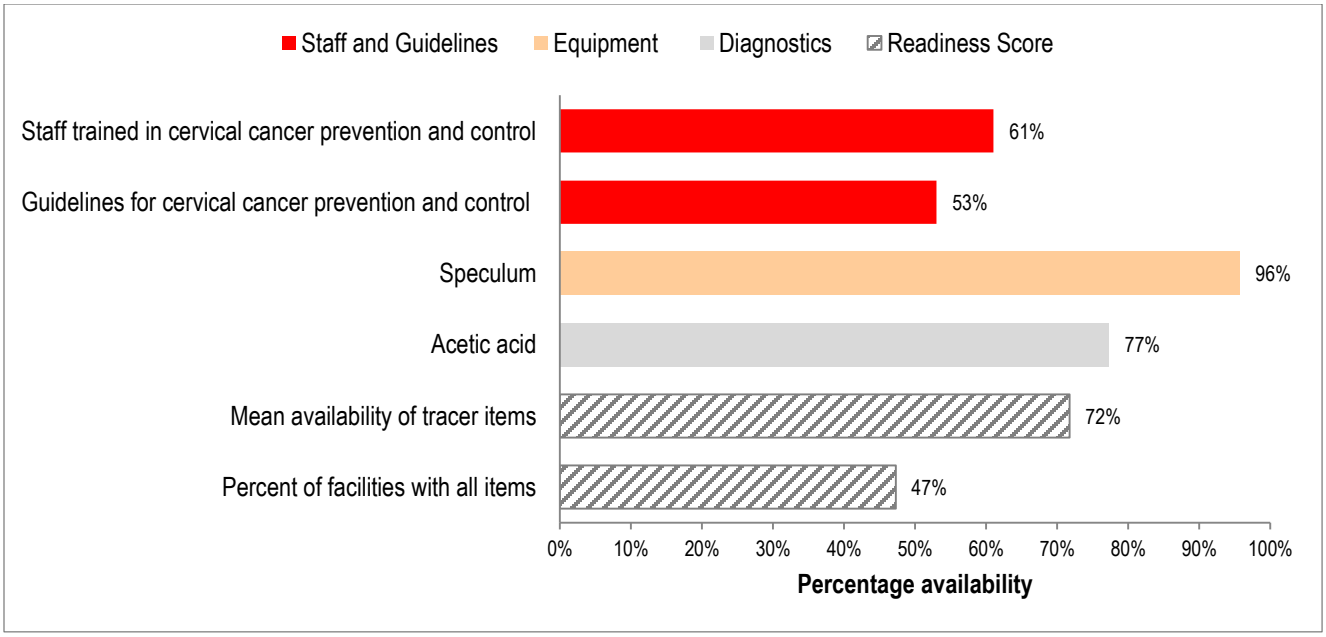


Figure 3.7. 4 Percentage of facilities that have tracer items for cervical cancer services among facilities that provide the service, Ethiopia, SARA 2016

Table 3.7. 10 Percentage of facilities that have tracer items for cervical cancer services among facilities that provide this service by region, facility type and managing authority, Ethiopia, SARA 2016

	Guidelines for cervical cancer prevention and control	Staff trained in cervical cancer prevention and control	Speculum	Acetic acid	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions							
Tigray	20	15	100	95	15	58	8
Afar	0	0	0	0	0	0	0
Amhara	89	86	100	95	85	93	13
Oromiya	18	55	100	55	18	57	11
Somali	0	0	100	0	0	25	2
Beni. Gumuz	0	0	0	0	0	0	0
S.N.N.P.	36	55	82	55	18	57	11
Gambella	100	100	100	100	100	100	1
Harrari	0	0	100	100	0	50	2
Addis Ababa	42	64	89	62	34	64	30
Dire Dawa	19	19	100	38	19	44	3
Facility type							
Referral hospital	39	67	100	83	28	72	18
General hospital	38	40	96	69	22	61	45
Primary hospital	17	0	83	33	0	33	6
Health center	83	94	94	83	83	89	7
Higher clinic	0	0	100	87	0	47	2
Medium clinic	0	0	100	100	0	50	2
Lower clinic	0	0	100	0	0	25	1
Managing authority							
Government	66	78	95	74	62	79	48
Other	20	18	98	84	10	55	33

Urban/Rural							
Urban	53	62	96	77	48	72	79
Rural	50	0	100	100	0	63	2
Total	53	61	96	77	47	72	81

3.8. Neglected Tropical Disease (NTD)

This chapter explores the following areas relating to the provision of neglected tropical disease services at health facilities in Ethiopia:

- Availability of services: examines the availability of NTD services.
- Service readiness: Addresses the availability of medicines, guideline and trained staff to provide good-quality NTD services.

Key Findings

- Among all NTD services, the most offered (38 percent) is for soil transmitted helminthes disease diagnosis and management, but the least offered (8 percent) service is for lymphatic filariasis disease diagnosis and management.
- Among health facilities excluding health posts offering NTD diagnosis and/or treatment services, eight in ten facilities have Albendazole, which is the most available medicine among all NTD medicines.
- Among health facilities excluding health posts that offer NTD diagnosis and/or treatment services, the availability of guidelines is very low ranging from 1 percent for lymphatic filariasis disease diagnosis and management to 19 percent for Dracunculiasis disease diagnosis and management services.
- The availability of trained staff for diagnosis and/or treatment of all NTDs are very low ranging from 8 to 20 percent.
- The highest mean availability of tracer item was for lymphatic filariasis (45 percent) and the least mean availability of NTD tracer item was for trachoma (10 percent).

Availability of services for neglected tropical diseases

Providing attention to Neglected Tropical Diseases (NTD) in the integrated manner was one of the main activities reported in HSDP IV annual performance report of FMOH 2015. In this report, over 9.9 million and over 1.5 million people took drugs for the prevention of onchocerciasis and lymphatic filariasis respectively. A total of 2.6 million and 5.3 million School age children received Praziquntal and Mebendazole for Schistosomis and STH de worming respectively. Furthermore, over 28 million people living in 248 trachoma endemic woredas were covered with Zithromax MDA and over 83,000 people have been operated for trachomatous trichiasis (FMOH, 2015).

Services were deemed available when the providers in the facility diagnose, prescribe treatment, or manage patients with each specific neglected tropical disease (NTDs). In general, the provision of NCD services is found in less than half of the health facilities excluding health posts. Among all hospitals, 72 percent of referral and general hospitals have services for soil-transmitted helminths (Table ***3.8.1***).

Among all NTD services, services of lymphatic flariasis (8 percent), and podoconiosis (9 percent) were the least frequently available services in health facilities excluding health posts (Fig ***3.8.1***).

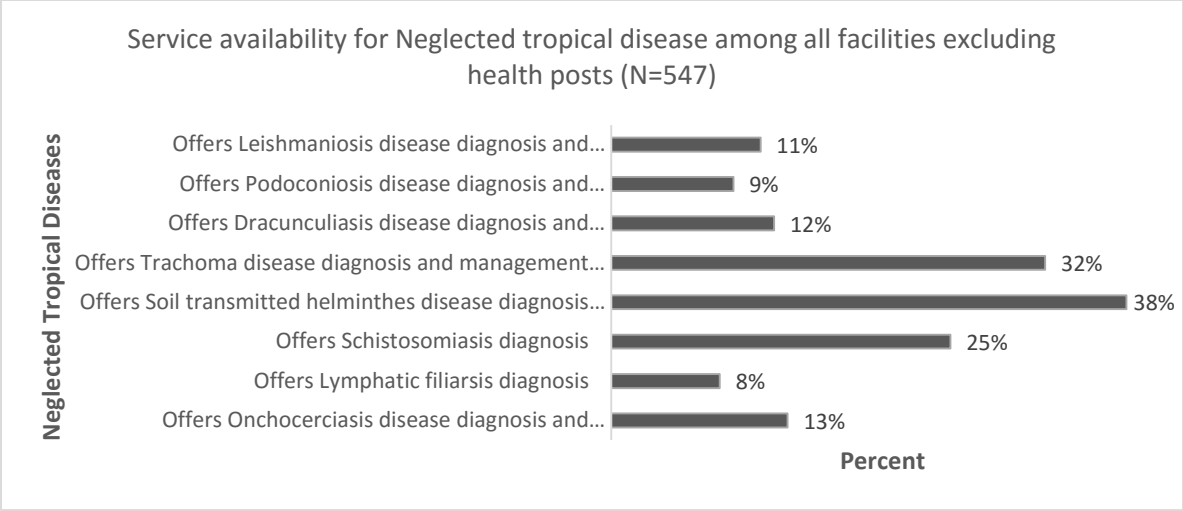


Figure 3.8.1 Availability of services for Neglected tropical diseases among facilities excluding health posts, Ethiopia SARA 2016

In general, Services for all neglected tropical disease (NTDs) are more likely available in hospitals compared with other facility types, and Government facilities are more likely to provide these services compared with other managing authorities. In Somali and Afar regions, the availability of services for NTD is less likely available than other regions. Table ***3.8.1*** provides details on the availability of services and additional information that describes the specific services available, by facility type, managing authority and regions (***Table 3.8.1)***.

Table 3.8. 1 Service availability for neglected tropical diseases, by background characteristics, Ethiopia SARA 2016

Among all facilities, excluding health posts, the percentages offering services for neglected tropical diseases, by background characteristics, Ethiopia SARA 2016

Background Characteristics	Offers Onchocerciasis disease diagnosis and management[1]	Offers Lymphatic filiarsis diagnosis and management [2]	Offers Schistosomiasis diagnosis[3]	Offers Soil transmitted helminthes disease diagnosis and management[4]	Offers Trachoma disease diagnosis and management [5]	Offers Dracunculiasis disease diagnosis and management[6]	Offers Podoconiosis disease diagnosis and management[7]	Offers Leishmaniosis disease diagnosis and management [8]	Total number of facilities
Regions									
Tigray	7%	10%	30%	45%	53%	15%	6%	18%	42
Afar	1%	1%	30%	42%	40%	0%	0%	1%	38
Amhara	10%	4%	24%	39%	36%	3%	3%	10%	61
Oromiya	21%	14%	37%	40%	29%	21%	18%	18%	99
Somali	1%	1%	16%	47%	20%	3%	0%	2%	43
Beni. Gumuz	56%	23%	60%	74%	66%	22%	9%	12%	30
S.N.N.P.	10%	4%	13%	36%	33%	10%	7%	4%	61
Gambella	11%	1%	8%	22%	16%	5%	1%	1%	30
Harrari	44%	42%	71%	69%	19%	46%	35%	35%	23
Addis Ababa	9%	5%	14%	16%	19%	5%	8%	10%	91
Dire Dawa	19%	23%	60%	53%	38%	18%	14%	28%	29
Facility type									
Referral hospital	63%	66%	72%	69%	75%	56%	59%	66%	32
General hospital	45%	44%	72%	70%	68%	37%	34%	44%	117

Primary hospital	38%	36%	59%	70%	66%	41%	31%	33%	61
Health centre	18%	10%	38%	55%	48%	17%	13%	14%	165
Higher clinic	7%	11%	24%	36%	19%	8%	13%	18%	23
Medium clinic	24%	10%	24%	37%	34%	9%	9%	16%	64
Lower clinic	1%	0%	4%	8%	5%	2%	0%	0%	85
Managing authority									
Government	19%	11%	39%	56%	49%	18%	14%	15%	320
Other	8%	4%	11%	18%	13%	5%	4%	6%	227
Urban/Rural									
Urban	16%	9%	22%	30%	27%	12%	10%	13%	431
Rural	9%	6%	31%	48%	39%	11%	8%	8%	116
Total	**13%**	**8%**	**25%**	**38%**	**32%**	**12%**	**9%**	**11%**	547

[1] Providers in the facility diagnose, prescribe treatment for, or manage patients with onchocerciasis.
[2] Providers in the facility diagnose, prescribe treatment for, or manage patients with lymphatic filariasis.
[3] Providers in the facility diagnose, prescribe treatment for, or manage patients with schistosomiasis.
[4] Providers in the facility diagnose, prescribe treatment for, or manage patients with soil-transmitted helminthes.
[5] Providers in the facility diagnose, prescribe treatment for, or manage patients with trachoma.
[6] Providers in the facility diagnose, prescribe treatment for, or manage patients with dracunculiasis.
[7] Providers in the facility diagnose, prescribe treatment for, or manage patients with podoconiosis.
[8] Providers in the facility diagnose, prescribe treatment for, or manage patients with leishmaniasis.

Readiness to provide quality NTD services

Readiness to provide health services for neglected tropical disease diagnosis & treatment services was assessed based on the presence of two domains (staff & training and Medicines & commodities) Table 3.8.2

Table 3.8. 2 ***SARA tracer items for Specific neglected tropical diseases diagnosis and treatment services, Ethiopia SARA*** 2016

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for NTD diagnosis and treatment • Staff trained in NTD diagnosis and treatment
Medicines & commodities	• Ivermectin • Albendazole • Mebendazole • Azithromycin cap/tab or oral liquid • Praziquantel • Sodium stibo gluconate (ssg) • Amphotercin B

Availability of medicines

Table ***3.8.3*** presents availability of neglected tropical disease medicines among facilities offering NTD diagnosis and/or treatment services, the percentages that have NTD medicines available in the facility on the day of the survey, by background characteristic.

In general, among all health facilities offering NTD diagnosis and/or treatment services, about eight in ten facilities have Albendazole available in the facility on the day of the visit, and 77 percent of them have Mebendazole. However, overall, the availability of the drugs Ivermectin, Sodium stiboGluconate (SSG), and Azithromycin for neglected tropical disease treatment service is only 3 percent, 4 percent, and 11 percent respectively (Table ***3.8.3***).

The availability of drugs for neglected tropical disease treatment service varies by facility types; where it is more likely available in hospitals than other facility types. There is also regional discrepancy on the availability of the drugs for neglected tropical disease treatment service. For instance, the drug Ivemectin is available in all health facilities of Afar region and none of the health facilities in Addis Ababa, Dire Dawa, Harrari and Somali regions have Ivermectin. Table ***3.8.3*** provides details on the availability of specific drugs for NTD treatment services and additional information, by type of facility, managing authority and regions.

Table 3.8. 3 Availability of neglected tropical disease medicines in facilities offering neglected tropical disease services, Ethiopia SARA 2016

Among facilities, excluding health posts, offering NTD diagnosis and/or treatment services, the percentage that have NTD medicines available in the facility on the day of the survey, by background characteristics, Ethiopia SARA 2016

Background Characteristics	Ivermectin `	Albendazole	Praziquantel	Mebendazole	Azithromycin cap/tab or oral liquid	Sodium stibo gluconate (ssg) or Amphotercin B	Total number of facilities
Regions							
Tigray	0%	28%	51%	62%	34%`	28%	16
Afar	100%	100%	46%	75%	0%	100%	1
Amhara	30%	100%	63%	78%	2%	2%	14
Oromiya	17%	84%	63%	76%	15%	1%	28
Somali	0%	34%	19%	77%	14%	0%	2
Beni. Gumuz	23%	83%	71%	85%	12%	0%	8
S.N.N.P.	2%	100%	52%	84%	2%	5%	18
Gambella	7%	100%	100%	50%	43%	100%	1
Harrari	0%	67%	49%	50%	43%	0%	11
Addis Ababa	0%	32%	19%	60%	34%	1%	13
Dire Dawa	0%	70%	61%	87%	31%	0%	9
Facility type							
Referral hospital	10%	100%	83%	100%	58%	29%	21
General hospital	2%	90%	64%	94%	49%	13%	51
Primary hospital	9%	100%	67%	98%	43%	20%	22
Health centre	22%	100%	65%	91%	8%	3%	14
Higher clinic	0%	0%	8%	39%	57%	0%	3
Medium clinic	0%	11%	11%	11%	4%	0%	9
Lower clinic	0%	100%	66%	32%	3%	0%	1
Managing authority							
Government	21%	100%	66%	92%	10%	5%	86
Other	0%	19%	27%	25%	16%	0%	35
Urban/Rural							
Urban	14%	70%	53%	65%	22%	2%	109
Rural	18%	100%	62%	87%	0%	7%	12
Total	**3%**	**80%**	**58%**	**77%**	**11%**	**4%**	**121**

Guideline for neglected tropical diseases

The availability of Guidelines and staff with recent training are among elements identified as important for the provision of good quality health services.

Overall, among all facilities excluding health posts that offer services for NTD diagnosis and/or treatment services, the availability of guidelines and trained staff for NTD disease service is low. In general, the availability of guideline for Dracunculiasis disease diagnosis and management prevention and control is 19% and it is less than 14 percent for other NTD. Among regions, Afar, Amhara, Harrari and Dire Dawa regions are less likely to have guideline compared with other regions. However, urban facilities are more likely to have guidelines for NTD diagnosis and/or treatment services compared with rural facilities (Table ***3.8.4***). Table ***3.8.4*** presents information on the availability of NTD guideline on the day of the survey, among facilities offering NTD diagnosis and/or treatment services, by background characteristics.

Table 3.8. 4 Availability of neglected tropical disease guidelines in facilities offering neglected tropical disease services, Ethiopia SARA 2016

Among facilities, excluding health posts, offering NTD diagnosis and/or treatment services, the percentage that have NTD guidelines available in the facility on the day of the survey, by background characteristics, Ethiopia SARA 2016

Background Characteristics	Guidelines for Onchocerciasis prevention and control	Guidelines for Lymphatic filiarsis prevention and control	Guidelines for Schistosomiasis prevention and control	Guidelines for Soil transmitted helminthes disease diagnosis and management prevention and control	Guidelines for Trachoma disease diagnosis and management prevention and control	Guidelines for Dracunculiasis disease diagnosis and management prevention and control	Guidelines for Podoconiosis disease diagnosis and management prevention and control	Guidelines for Leishmaniosis disease diagnosis and management prevention and control	Total number of facilities
Regions									
Tigray	8%	5%	16%	11%	18%	33%	9%	26%	23
Afar	0%	0%	0%	0%	0%	#DIV/0!	#DIV/0!	0%	13
Amhara	1%	1%	1%	1%	1%	6%	3%	2%	29
Oromiya	18%	1%	20%	9%	13%	17%	21%	21%	52
Somali	34%	34%	2%	1%	2%	15%	100%	0%	19
Beni. Gumuz	19%	0%	7%	11%	7%	20%	37%	9%	19
S.N.N.P.	1%	2%	23%	8%	10%	31%	1%	5%	26
Gambella	29%	0%	0%	0%	0%	29%	0%	0%	3
Harrari	0%	0%	3%	0%	0%	0%	0%	0%	18
Addis Ababa	39%	3%	25%	6%	19%	3%	2%	3%	25
Dire Dawa	0%	0%	0%	0%	0%	0%	0%	0%	21
Facility type									
Referral hospital	10%	10%	9%	9%	25%	17%	11%	14%	23
General hospital	15%	10%	13%	12%	15%	16%	18%	19%	84
Primary hospital	9%	9%	8%	14%	13%	12%	11%	10%	36
Health centre	14%	0%	13%	5%	7%	17%	18%	18%	60
Higher clinic	0%	0%	0%	0%	0%	0%	0%	0%	9
Medium clinic	0%	0%	0%	0%	0%	0%	0%	0%	28

Lower clinic	65%	0%	81%	28%	63%	91%	0%	0%	8
Managing authority									
Government	14%	2%	13%	6%	7%	17%	17%	18%	166
Other	10%	1%	19%	8%	15%	29%	1%	1%	82
Urban/Rural									
Urban	18%	2%	15%	10%	14%	22%	21%	17%	205
Rural	0%	0%	14%	3%	4%	15%	1%	7%	43
Total	**13%**	**1%**	**14%**	**6%**	**9%**	**19%**	**14%**	**14%**	**248**

Trained staff for neglected tropical diseases

In general, only 12 percent and 8 percent of all facilities had trained staff for diagnosis and/or treatment of Trachoma, and soil transmitted helminths respectively during the survey time. As table, ***3.8.5*** shows, the availability of trained staff is only ranging from 8 percent to 20 percent. There is High discrepancy between government managed and other health facilities on the availability of trained staff for NTD diagnosis and/or treatment services (Table ***3.8.5)***.

Table 3.8. 5 Availability of neglected tropical disease training staff in facilities offering neglected tropical disease services, Ethiopia SARA 2016

Among facilities, excluding health posts, offering NTD diagnosis and/or treatment services, the percentage that have NTD guidelines available in the facility on the day of the survey, by background characteristics, Ethiopia SARA 2016

Background Characteristics	Staff trained in Onchocerciasis prevention and control	Staff trained in Lymphatic filiarsis prevention and control	Staff trained in Schistosomiasis prevention and control	Staff trained in Soil transmitted helminthes disease diagnosis and management prevention and control	Staff trained in Trachoma disease diagnosis and management prevention and control	Staff trained in Dracunculiasis disease diagnosis and management prevention and control	Staff trained in Podoconiosis disease diagnosis and management prevention and control	Staff trained in Leishmaniosis disease diagnosis and management prevention and control	Total number of facilities
Regions									
Tigray	0%	0%	0%	0%	1%	0%	0%	0%	23
Afar	0%	0%	0%	0%	4%	#DIV/0!	#DIV/0!	0%	13
Amhara	1%	1%	0%	0%	1%	0%	2%	2%	29
Oromiya	34%	26%	20%	18%	25%	17%	21%	21%	52
Somali	34%	34%	2%	1%	2%	15%	100%	33%	19
Beni. Gumuz	53%	48%	20%	16%	18%	40%	50%	46%	19
S.N.N.P.	0%	0%	23%	8%	10%	31%	0%	0%	26
Gambella	21%	100%	10%	3%	5%	42%	100%	100%	3
Harrari	0%	0%	3%	0%	0%	0%	0%	0%	18
Addis Ababa	0%	0%	1%	1%	2%	0%	0%	1%	25
Dire Dawa	0%	0%	0%	0%	0%	0%	0%	0%	21
Facility type									
Referral hospital	5%	5%	4%	9%	33%	6%	5%	10%	23
General hospital	4%	4%	5%	5%	18%	7%	8%	13%	84

Primary hospital	9%	9%	6%	5%	18%	4%	11%	15%	36
Health centre	29%	25%	13%	9%	10%	14%	18%	16%	60
Higher clinic	0%	0%	0%	0%	0%	0%	0%	0%	9
Medium clinic	0%	0%	0%	0%	0%	0%	0%	1%	28
Lower clinic	0%	0%	56%	26%	44%	91%	0%	0%	8
Managing authority									
Government	27%	22%	12%	8%	10%	14%	17%	16%	166
Other	0%	1%	13%	8%	11%	29%	1%	2%	82
Urban/Rural									
Urban	16%	3%	2%	1%	3%	2%	2%	3%	205
Rural	30%	43%	23%	15%	18%	38%	36%	33%	43
Total	20%	17%	12%	8%	11%	17%	13%	12%	248

Readiness Score for NTD

Table 3.8.6 summarises the readiness score to provide specific NTD services for the subset of facilities that offered such services The overall readiness score for specific neglected tropical diseases was assessed based on the three domains (staff, training, and commodities). Overall readiness score for lymphatic filariasis was the highest (45 percent), with differences by region, facility type, managing authority and urban rural place of residence. The lowest readiness score for all facility types (and for both government and non-government facilities) was for Trachoma (10 percent). Most of the low readiness score were due to the low score in "guidelines and staff training" domain (see Table 3.8.6).

Table 3.8.6 Mean availability of tracer items for facilities offering neglected tropical disease services by background characteristics, Ethiopia SARA 2016.

Among facilities, excluding health posts, offering NTD diagnosis and/or treatment services, the percentage that have NTD mean tracer items available in the facility on the day of the survey, by background characteristics, Ethiopia SARA 2016

Background Characteristics	Mean availability of tracer items for Onchocerciasis prevention and control	Mean availability of tracer items for lymphatic filariasis	Mean availability of tracer items for Schistosomiasis prevention and control	Mean availability of tracer items for Soil transmitted helminthes	Mean availability of tracer items for Trachoma	Mean availability of tracer items for Dracunculiasis	Mean availability of tracer items for Podoconiosis	Mean availability of tracer items for Leishmaniosis	Total number of facilities
Regions									
Tigray	3%	15%	19%	20%	15%	16%	4%	17%	42
Afar	25%	50%	12%	19%	2%	#DIV/0!	#DIV/0!	25%	38
Amhara	8%	51%	16%	20%	1%	3%	2%	2%	61
Oromiya	24%	49%	31%	29%	18%	17%	21%	16%	99
Somali	26%	34%	7%	20%	5%	15%	100%	12%	43
Beni. Gumuz	33%	54%	28%	31%	12%	30%	44%	21%	30
S.N.N.P.	1%	50%	30%	27%	8%	31%	0%	3%	61
Gambella	20%	75%	29%	14%	12%	36%	50%	63%	30
Harrari	0%	34%	14%	13%	11%	0%	0%	0%	23
Addis Ababa	14%	17%	15%	18%	16%	1%	1%	2%	91
Dire Dawa	0%	35%	15%	22%	8%	0%	0%	0%	29
Facility type									
Referral hospital	8%	54%	26%	32%	36%	11%	8%	16%	32
General	8%	49%	23%	30%	25%	12%	13%	16%	117

hospital									
Primary hospital	9%	55%	22%	31%	22%	8%	11%	14%	61
Health centre	22%	56%	26%	28%	8%	15%	18%	14%	165
Higher clinic	0%	0%	2%	10%	14%	0%	0%	0%	23
Medium clinic	0%	6%	3%	3%	1%	0%	0%	1%	64
Lower clinic	24%	50%	68%	28%	41%	91%	0%	0%	85
Managing authority									
Government	21%	56%	26%	28%	9%	15%	17%	14%	320
Other	4%	10%	19%	12%	14%	29%	1%	1%	227
Urban/Rural									
Urban	16%	36%	19%	20%	12%	12%	11%	8%	431
Rural	16%	61%	29%	28%	8%	27%	18%	17%	116
Total	**16%**	**45%**	**24%**	**25%**	**10%**	**18%**	**14%**	**11%**	**547**

3.9. Public Health Emergency Management (PHEM) Services

Key Findings

- Among all facilities, excluding health posts, 13 percent of facilities offer public health emergency management services.
- Among all health facilities, excluding health posts offering PHEM services, 7 percent had trained staff available during the survey.
- Among facilities excluding health posts that offer PHEM services, the availability of guidelines is very low (2 percent) ranging from 0 percent in lower clinics to 11 percent in referral hospitals
- The overall readiness score for public health emergency management service was also low (5 percent) ranging from 20 percent in referral hospitals to 0 percent in lower clinics.

The public health system is continually challenged by recurrent and unexpected disease outbreaks and is facing the challenge of managing health consequences of natural and human made disasters, emergencies, crisis, and conflicts. These problems continue to disrupt the health care system, while successful detection and response to these challenges is becoming increasingly complicated. PHEM is designed to ensure rapid detection of any public health threats, preparedness related to logistic and fund administration, and prompt response to and recovery from various public health emergencies. Investigations of diseases are now more complex in nature than they were in the past because of a variety of new pathogens, risk factors and outbreaks, which cross jurisdictions and national boundaries—often raising political and economic concerns. In order to combat with the challenges that are ever growing, the way working processes reorganized and its capacities should be changed. In the 2015 annual performance report, some of the public health emergency management activities indicated that for epidemic prone diseases under surveillance, some of cases are increased from the previous year report. For instance, in 2015, about 32,222 laboratories confirmed and epidemiologically linked measles cases were reported nationally with 199 deaths. Compared to 2014, there was an increase by 23.9%. Furthermore, 1,875 suspected meningococcal meningitis cases and 61 deaths with CFR of 3.3% were also reported with slight increase from the previous year (FMOH, 2015). In 2016 the Ethiopian health facilities has been assessed for public health emergency management (PHEM) Service availability and readiness. This chapter explores the following areas relating to the provision of public Health emergency management services at health facilities in Ethiopia:

- Availability of services: examines the availability of public Health emergency management services.
- Service readiness: Addresses the availability guideline and trained staff to provide good-quality public Health emergency management services.

Availability of PHEM Services

Public health emergency management services in the public health sectors in Ethiopia are expected to be offered at all facility levels. However, the range of public health emergency management services offered differs by type of facility, region, managing authority and urban rural area of residence. Overall 13 percent of facilities offer public health management services. Regarding regional variation, the availability of public health emergency preparedness service was highest is in Benishangul Gumuz region (31 percent) and the lowest is in Gambella region where only 2 percent of facilities offer PHEM services (Fig 3.9.1). The provision of public health emergency management services decreases by the decrease in the level of facility which ranges from 84 percent in referral hospitals to 0 percent in lower clinic. Facilities managed by government (17 percent) and located in urban areas (18 percent) more likely offer public health emergency management services than their counter parts (Table 3.9.1).

Percentage of facilities that offer Public Health Emergency Management services, by region (N=547)

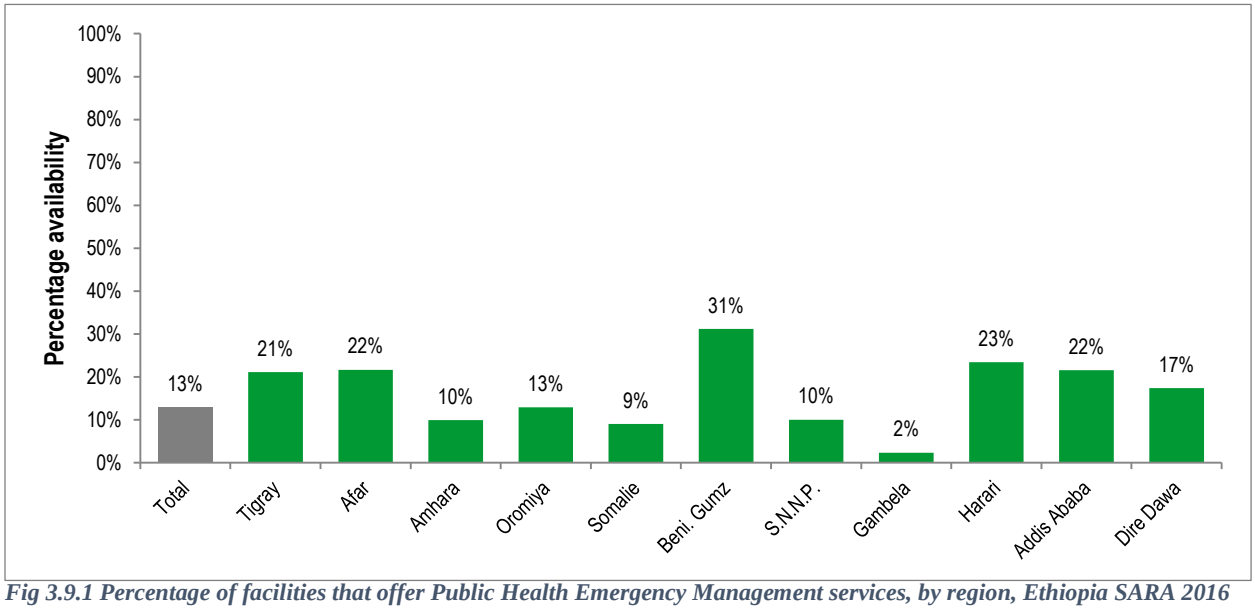


Fig 3.9.1 Percentage of facilities that offer Public Health Emergency Management services, by region, Ethiopia SARA 2016

Readiness for PHEM Services

Readiness to provide health services for public health emergency management services was assessed based on the presence of one domain (staff & training) Table 3.9.1

Table 3.9. 1 SARA tracer items for Public health emergency management services, Ethiopia SARA 2016

Domain	Tracer items (% of facilities with item)
Staff & training	• Guidelines for Public health emergency management services • Staff trained in Public health emergency management

Table 3.9.2 summarises the two domains (guideline and trained staff) for readiness to provide public health emergency management (PHEM) services for the subset of facilities that offered public health emergency management services. Among facilities that offer PHEM services, lowest domain score for all facility types (and for both government and non-government facilities), regions and facilities located in urban rural area was for guidelines(2 percent). Overall, 7 percent had trained available. The overall readiness score was also low (5 percent) ranging from 20 percent in referral hospitals to 0 percent in lower clinics (Fig 3.9.2 and Table 3.9.2). Fig 3.9.2 describes percentage of facilities that have tracer items for Public Health Emergency Management services among facilities that provide this service.

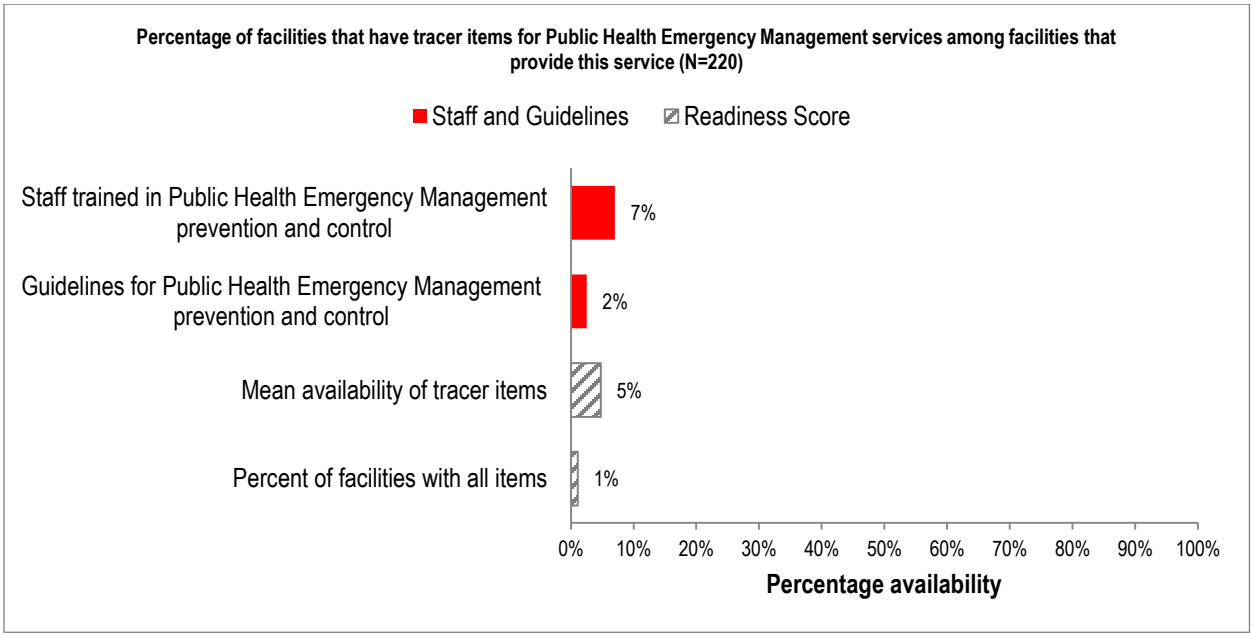


Fig 3.9.1 Percentage of facilities that have tracer items for Public Health Emergency Management services among facilities that provide this service (N=220), Ethiopia SARA 2016

Table 3.9. 2 PHEM service availability, among facilities excluding health posts, offering PHEM services, the percentage that have PHEM guideline and trained staff available in the facility on the day of the survey, by background characteristics, Ethiopia SARA 2016

	Offers Public Health Emergency Management diagnosis	Guidelines for Public Health Emergency Management prevention and control	Staff trained in Public Health Emergency Management prevention and control	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions						
Tigray	21%	4%	4%	4%	4%	19
Afar	22%	0%	0%	0%	0%	10
Amhara	10%	2%	2%	1%	2%	26
Oromiya	13%	0%	1%	0%	0%	52
Somali	9%	0%	0%	0%	0%	16
Beni. Gumuz	31%	4%	4%	4%	4%	11
S.N.N.P.	10%	1%	3%	1%	2%	26
Gambella	2%	0%	0%	0%	0%	2
Harrari	23%	0%	0%	0%	0%	9
Addis Ababa	22%	10%	36%	2%	23%	42

Dire Dawa	17%	0%	10%	0%	5%	7
Facility type						
Referral hospital	84%	11%	30%	11%	20%	27
General hospital	71%	16%	14%	10%	15%	83
Primary hospital	79%	0%	2%	0%	1%	48
Health center	15%	2%	1%	0%	1%	43
Higher clinic	27%	0%	24%	0%	12%	9
Medium clinic	18%	0%	15%	0%	7%	10
Lower clinic	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0
Managing authority						
Government	17%	3%	3%	1%	3%	167
Other	8%	2%	17%	1%	9%	53
Urban/Rural						
Urban	18%	3%	9%	1%	6%	201
Rural	6%	0%	0%	0%	0%	19
Total	13%	2%	7%	1%	5%	220

3.10. Surgery & blood transfusion

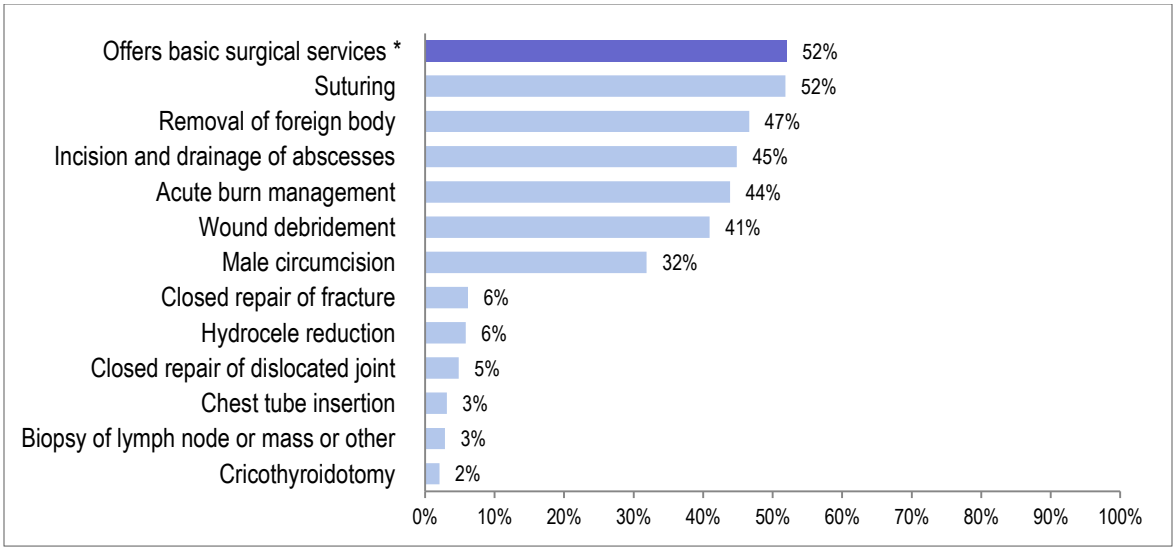
Surgery is often the only solution to prevent disabilities and death from road traffic accidents, falls, burns, disasters, domestic violence, pregnancy related complications, infections and congenital defects. Transfusion of safe blood products is also important to treat such conditions that cannot be prevented or managed effectively by other means. Increasing access to and improving the quality of surgical interventions and blood transfusion is an increasingly recognized priority in developing countries like Ethiopia (Jin Yung Bae, and WHO).

Basic surgical services

Service availability

Availability of basic surgical service at the facility during the implementation of the survey were assessed based on the facility provide basic surgical services such as incision and drainage of abscesses, Wound debridement, Acute burn management, Suturing, Closed treatment of fracture, Cricothyroidotomy, Male circumcision, Hydrocele reduction, Chest tube insertion, Closed repair of dislocated joint, Biopsy of lymph node or mass or other, and Removal of foreign body.

About 52 percent of the facilities provided any type of surgical services. The most obtain-able service in the facilities were suturing 52 percent followed by removal of foreign body 47 percent. On the other hand, Chest tube insertion, Biopsy of lymph node or mass or other, and Cricothyroidotomy were the least performed surgical services among all facilities which were 3, 3 and 2 percent respectively.



* Facility offering any basic surgical services (including minor surgery such as suturing, circumcision, wound debridement, etc.), or caesarean section.

Figure 3.10.1: Percentage of facilities that offer basic surgical services, Ethiopia SARA 2016 (N=547)

Figure 3.10.2 shows percentage of facilities that offer basic surgical services by region. It publicized the presence of disparity among regions. About 70 percent of facilities that found in Addis Ababa, SNNP, and Dire Dawa (71, 68, & 68 percent respectively) were offered basic surgical service. However, only one in five facilities in Oromia region was performing basic surgical services.

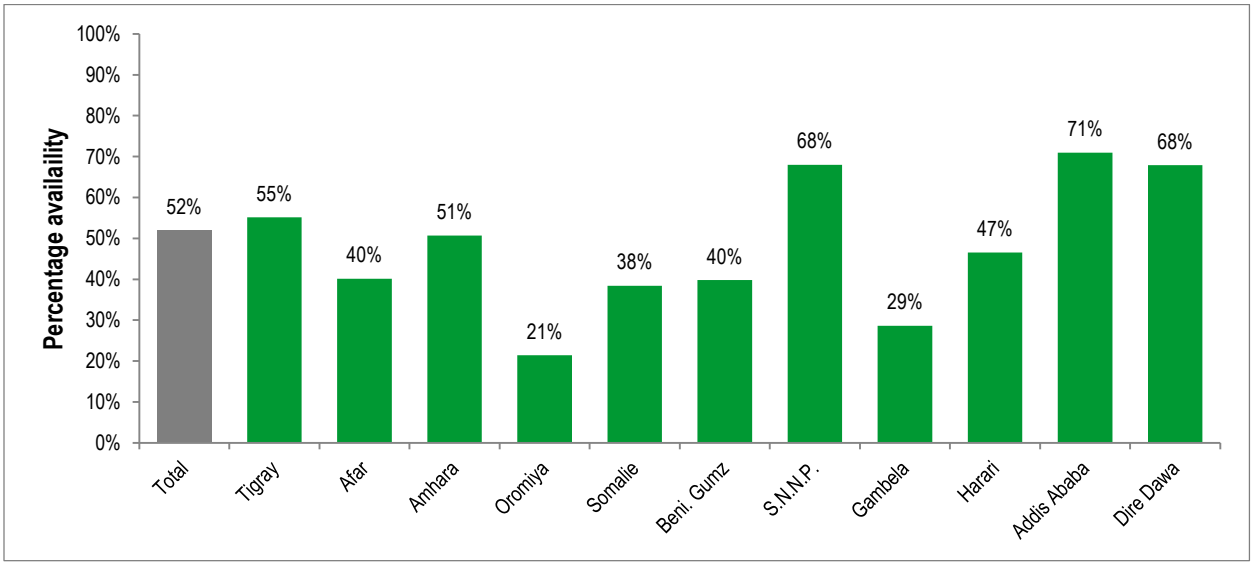


Figure 3.10.2: Percentage of facilities that offer basic surgical services, by region, Ethiopia SARA 2016 (N=547)

Table 3.10.1 illustrates the proportion of facilities that provide basic surgical service by facility type, managing authority, and residence. Provision of basic surgical services is a culture for most general, (99 percent), referral (97percent), and primary (89 percent) hospitals. Whereas lower clinics (40 percent) were the least performing compared with other facility types. More than half of facilities that managed by government (56 percent) and about half of (48 percent) facilities managed by other than government entity were offered basic surgical services. Greater proportion of facilities in rural area 56 percent were provides basic surgical services compared with facilities which were found in urban area 49 percent.

Table 3.10. 1 Proportion of facilities that provide basic surgical services by facility type, managing authority, and residence, Ethiopia SARA 2016 (N 547)

	Offers basic surgical services
Total	52
Facility type	
Referral hospital	91
General hospital	96
Primary hospital	89
Health centre	48
Higher clinic	52
Medium clinic	61
Lower clinic	35
Managing authority	
Public	50
Private	43
Urban/Rural	
Urban	46
Rural	47

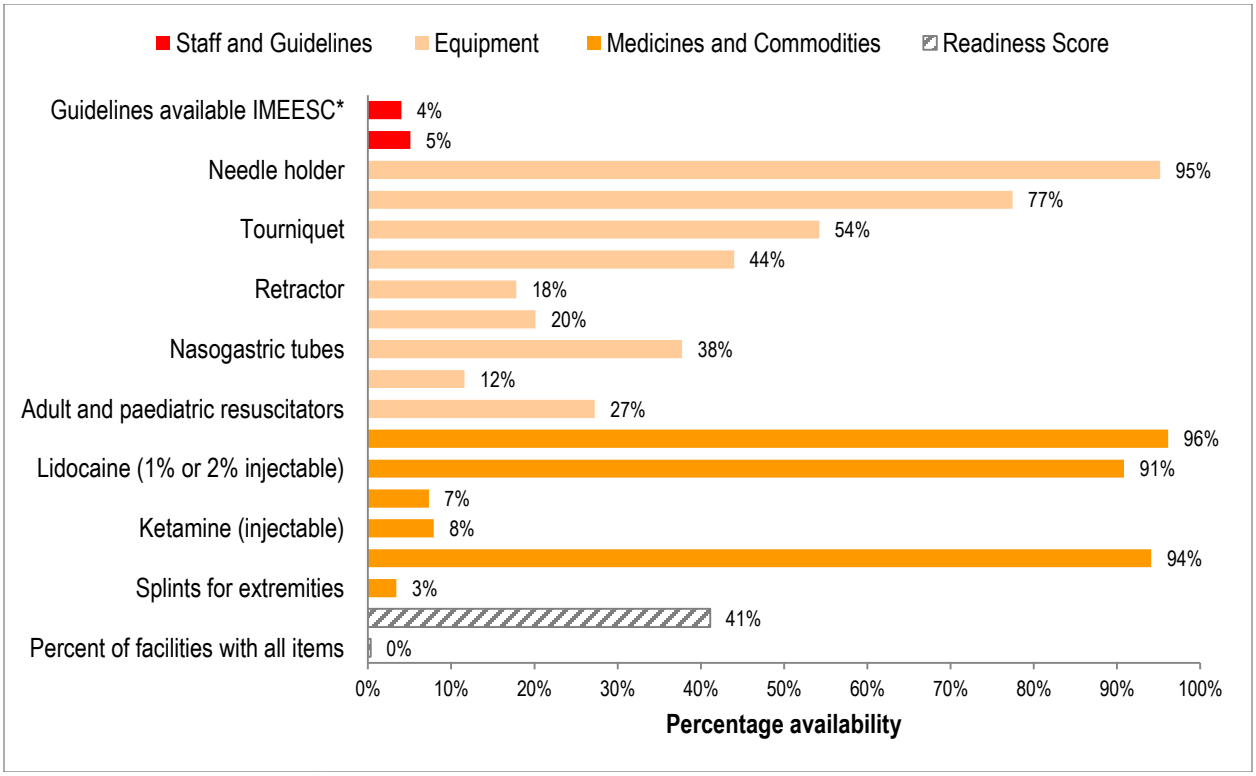
Service Readiness

The ability of health facilities to offer a specific service and the capacity to provide that service show the services readiness of the facility. Facilities offering surgical services (380 facilities) were assessed on service readiness based on the availability of the 17 tracer items (see Table 3.10.2).

Table 3.10. 2 Tracer items for basic surgical care service readiness, Ethiopia SARA 2016

Tracer items required for service delivery	
Trained staff and guidelines	• Materials for cast
• Guidelines for IMEESC	• Staff trained in IMEESC
Equipment	• Needle holder
• Scalpel handle with blade	• Retractor
• Surgical scissors	• Nasogastric tubes (10-16 FG)
• Tourniquet	• Adult and pediatric resuscitators
• Suction apparatus (manual or electric sucker)	• Oxygen
Medicines and commodities	• Skin disinfectant
• Sutures (both absorbable and non-absorbable)	• Ketamine (injectable)
• Lidocaine (1% or 2% injectable)	• Splints for extremities

Figure 3.10.3 indicates percentage of facilities that have tracer items for basic surgical services among facilities that provide this service. Overall, 5 percent of facilities that provide surgical care had at least one trained staff in IMEESC. Similarly, IMEESC guideline were also available at 4 percent of facility that offering basic surgical services. Equipment items such as needle holder and surgical scissors were the most widely available in facilities that provide surgical services (95 percent and 77 percent, respectively) while, oxygen (12 percent) was the least available among all equipment items in health facilities. More than 90 percent of facilities that provide surgical care had medicine and commodities like skin disinfectant, suture material, and lidocaine (1% or 2%), (96, 94, 91 percent respectively) whereas Splints for extremities were found in 3 percent of facilities that offered surgical service.



*IMEESC- Integrated Management for Emergency and Essential Surgical Care

Figure 3.10.3: Percentage of facilities that have tracer items for basic surgical services among facilities that provide this service, Ethiopia SARA 2016 (N=380)

From all 17 tracer items, availability of trained staff and guidelines were found in 5 percent of facilities. The overall readiness score among facilities that provide basic surgical service were 41percent. Almost equal proportions of government and non-government facilities that provide basic surgical service had readiness score of 42 percent and 40 percent, respectively. Urban facilities had greater readiness 47 percent score compared with rural facilities 34 percent.

Table 3.10. 3 Percentage of facilities that have tracer items for basic surgical services and service readiness score among facilities that provide this service, by region, facility type, managing authority, and residence (N=380), Ethiopian SARA 2016.

	Staff and Guidelines	Equipment	Medicines and Commodities	Readiness Score
Total	**5**	**43**	**51**	**41**
Regions				
Tigray	4	43	50	41
Afar	7	51	54	47
Amhara	6	42	49	40
Oromiya	1	43	51	41
Somali	5	44	50	41
Beni. Gumuz	10	47	50	44
S.N.N.P.	3	33	49	35
Gambella	5	31	33	29
Harrari	2	55	58	50
Addis Ababa	10	66	59	57
Dire Dawa	4	58	55	51
Facility type				
Referral hospital	21	91	88	82
General hospital	27	92	89	83
Primary hospital	33	91	85	82

Health centre	5	40	50	40
Higher clinic	3	70	61	59
Medium clinic	2	47	49	42
Lower clinic	0	30	44	31
Managing authority				
Public	6	44	52	42
Private	2	42	50	40
Urban/Rural				
Urban	7	50	55	47
Rural	2	33	46	34

Comprehensive Surgical

Service availability

Availability of comprehensive surgical service at the facility at the time of survey implementation were assessed based on the facility provide comprehensive surgical services such as Tracheostomy, Vasectomy, Obstetric fistula repair, Appendectomy, Hernia repair (elective), Comprehensive surgical services, Tubal ligation, Dilatation & Curettage, Episiotomy, Hernia repair (strangulated), Cystostomy, Urethral stricture dilatation, Laparotomy, Congenital hernia repair, Neonatal surgery, Cleft palate, Skin grafting and contracture release, Open reduction and fixation for fracture, Amputation, Cataract surgery, Club foot repair, Drainage of osteomyelitis-septic arthritis.

Figure 3.10.4 shows Availability of comprehensive surgical services among hospitals. Availability of comprehensive surgical service was directed only for hospitals. Episiotomy (91 percent) was widely available service followed by laparotomy (88 percent) but, only thirty percent of hospitals provide cleft palate repair.

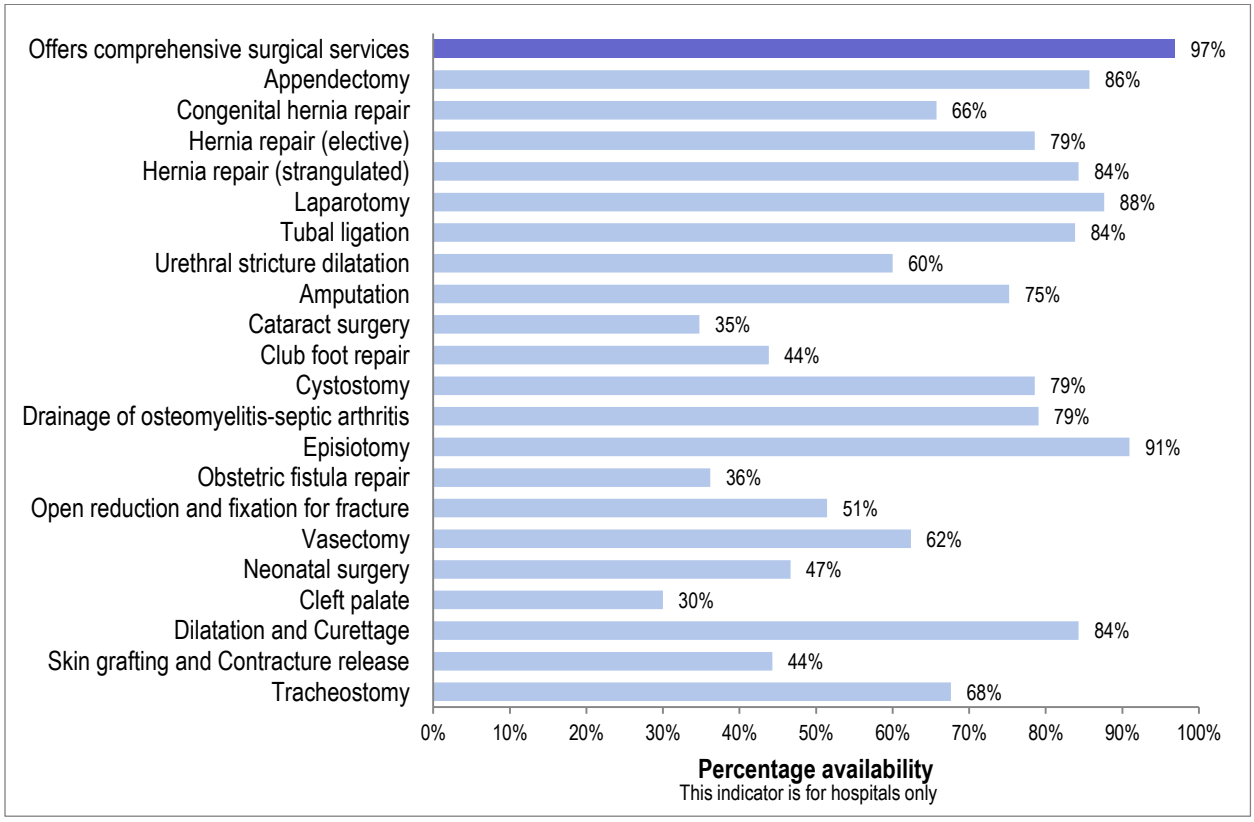


Figure 3.10.4 Percentage of hospitals that offer comprehensive surgical services, Ethiopia SARA 2016 (N=32)

Service readiness

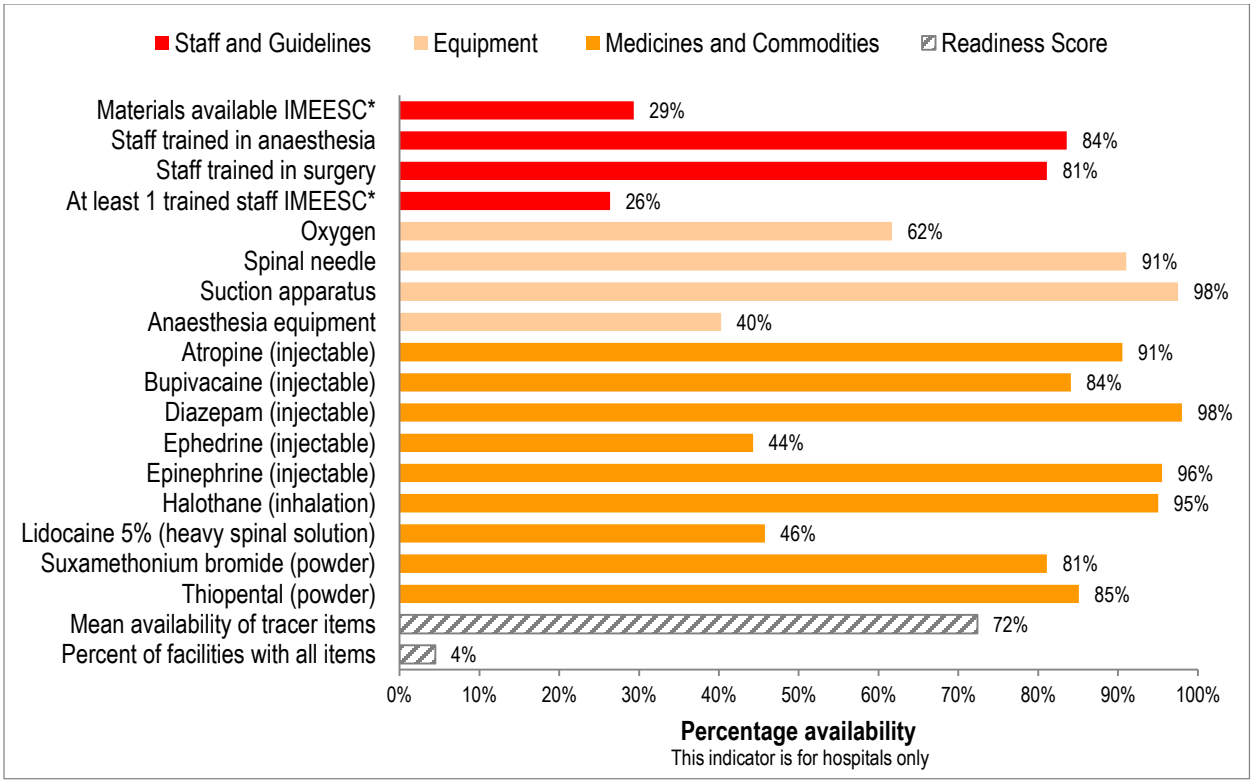
The ability of hospitals to offer a specific comprehensive surgical service and the capacity to provide this service show the services readiness of the hospitals. Hospitals offering comprehensive surgical services (201 hospitals) were assessed on service readiness based on the availability of the 17 tracer items

Table 3.10. 4 Types of tracer items required for comprehensive surgical care services, Ethiopia SARA 2016.

Tracer items required for service delivery	**Trained staff and guidelines**
• Materials for IMEESC (WHO Integrated Management for Essential and Emergency Care)	• Staff trained in IMEESC
• Staff trained in surgery	• Staff trained in anaesthesia
Equipment	• Oxygen
• Anaesthesia equipment	• Spinal needle
• Suction apparatus	**Medicines and commodities**
• Thiopental (powder)	• Suxamethonium bromide (powder)
• Atropine (injectable)	• Diazepam (injectable)
• Halothane (inhalation)	• Bupivacaine (injectable)
• Lidocaine 5% (heavy spinal solution)	• Epinephrine (injectable)
• Ephedrine (injectable	

Figure 3.10.5 shows Percentage of hospitals that had tracer items for comprehensive surgical services among facilities that provides this service. From those hospitals which perform comprehensive surgical care, 80% of them had at least one trained staff who trained in aesthesia and in surgery (84 and 81 percent respectively) in the past two years.

Among all equipment, Suction apparatus, 98 percent, were widely available in hospitals that provide surgical care services followed by spinal needle (91 percent). Aesthesia machine was the least obtainable equipment in hospitals that offered surgical services 40 percent. On the other hand, lidocaine 5% (heavy spinal solution) (46 percent) and Ephedrine injectable (44 percent) were the least available medicines and commodity in hospitals. The overall readiness score among hospitals that provide comprehensive surgical service were 72%.



*IMEESC- Integrated Management for Emergency and Essential Surgical Care

Figure 3.10.5 Percentage of hospitals that have tracer items for comprehensive surgical services among facilities that provide this service, Ethiopia SARA 2016 (N=31)

Blood transfusion

Service availability

Availability of blood transfusion services at the facility were assessed by asking whether the facility provide blood transfusion services at the time of the survey or not. Overall, 4% of health facilities offered blood transfusion services. This result varies by regions, facility type and residence. About one in ten facilities in Dire Dawa and Addis Ababa city administrations (15 and 12 percent respectively) offered blood transfusion service while only 1percent of facilities in Gambella and SNNP regions provide this service at the time of the survey. Greater proportions of general hospitals (96%) provide blood transfusion services whereas 1 percent of health centres and medium clinics offered this service. Public (4 percent) facilities provide blood transfusion services than private facilities (3 percent) (see table-3.10.5).

Table 3.10. 5 Percent distributions of blood transfusion services, by regions, facility type, managing authority, and residence, Ethiopian SARA, 2016 (N=547).

	Offers blood transfusion	Total number of facilities
Regions		
Tigray	4	42
Afar	2	38
Amhara	4	61
Oromiya	2	99
Somali	10	43
Beni. Gumuz	2	30
S.N.N.P.	1	61
Gambella	1	30
Harrari	8	23
Addis Ababa	12	91
Dire Dawa	15	29
Facility type		
Referral hospital	91	32
General hospital	96	117

Primary hospital	66	61
Health centre	1	165
Higher clinic	15	23
Medium clinic	1	64
Lower clinic	0	85
Managing authority		
Public	4	320
Private	3	227
Urban/Rural		
Urban	6	431
Rural	0	116
Total	**4**	**547**

Service readiness

The ability of health facilities to offer blood transfusion service and the capacity to provide this service show the services readiness of health facilities. Health facilities offering blood transfusion service (193) were assessed on service readiness based on the availability of the 7 tracer items such as presences of at least 1 trained staff for appropriate use of blood and safe blood transfusion, Guidelines for appropriate use of blood and blood transfusion, blood storage refrigerator, blood typing, cross match typing, blood supply safety, and blood supply sufficiency.

Forty five percent of facilities had at least one staff member who trained about appropriate use of blood and safe blood transfusion. Blood typing (98 percent) was the most widely available diagnostic services. Ninety one percent of facilities had blood supply safety at the time of the survey. Two percent of facilities had all tracer items (See *Figure-3.10.6)*.

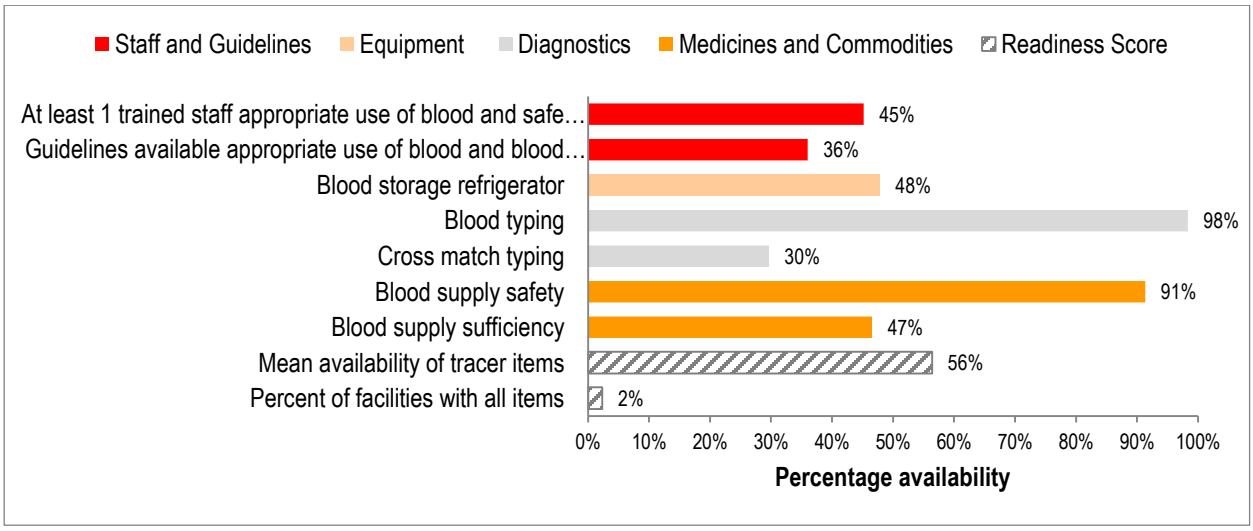


Figure-3.10.6 Percentage of facilities that have tracer items for blood transfusion services among facilities that provide this service, Ethiopian SARA 2016 (N=193)

The readiness of facilities to offer blood transfusion services were vary by regions, facility type, residence, and managing authorities. The overall readiness score were 56 percent. Facilities in Addis Ababa (77 percent) and Harrari (71 percent) had grater readiness score than facilities that found in other regions. Availability of trained staff and guideline were highest (88 percent) in Harari followed by Addis Ababa (64 percent). All facilities in Gamebella had equipment for blood transfusion services. All facilities in Benishangule Gumuz region had diagnostic services. Greater proportions of facilities in Addis Ababa (92 percent) and Dire Dawa (89 percent) had medicine and commodities for blood transfusion services. Higher clinics had better readiness score (71 percent) than other facility types. The overall readiness score of private facilities were 67 percent. Facilities which reside in urban and rural settings had similar readiness score which was 56 percent for each.

Table 3.10. 6 Percentage of facilities that have tracer items for blood transfusion services among facilities that provide this service, by region, Ethiopia SARA 2016 (N=193)

	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
	41	**48**	**64**	**69**	**56**
Regions					
Tigray	28	56	63	75	55
Afar	75	50	75	50	64
Amhara	20	27	54	58	42
Oromiya	47	57	63	59	56
Somali	16	12	50	54	36
Beni. Gumuz	0	50	100	50	50
S.N.N.P.	38	56	56	54	50
Gambella	0	100	50	50	43
Harrari	88	75	75	50	71
Addis Ababa	64	65	79	92	77
Dire Dawa	38	57	61	89	62
Facility type					
Referral hospital	48	76	78	67	66
General hospital	50	62	69	72	63
Primary hospital	41	65	54	58	53
Health centre	0	0	50	50	29
Higher clinic	66	43	71	89	71
Medium clinic	0	0	50	75	36
Lower clinic	0	100	50	100	57
Managing authority					
Public	33	43	58	60	49
Private	53	56	73	82	67
Urban/Rural					
Urban	40	47	64	69	56
Rural	45	60	50	70	56

Reference

FMOH. Health sector development programme IV annual performance report EFY 2007 (2015), 2015, Ethiopia

Jin Yung Bae , Reinou S Groen& Adam L Kushner, Surgery as a public health intervention: common misconceptions versus the truth , 2011Bulletin of the World Health Organization;89:394-394. doi: 10.2471/BLT.11.088229

UN, Report of the United Nations Conference on Sustainable Development (Rio de Janeiro, Brazil, 20–22 June 2012), A/CONF.216/16 , 2012.

WHO. Facts on non-communicable diseases, WHO March 2013

WHO, the clinical use of blood in medicine, obstetrics, pediatrics, surgery & anesthesia, and trauma &burn, accessed at http://www.who.int/bloodsafety/clinical_use/en/Manual_EN.pdf, in 8/1/2016.

WHO, Background to Safe Surgery Saves Lives, Why safe surgery is important? ; Patient safety, accessed at http://www.who.int/patientsafety/safesurgery/issue/en/ on 6/25/2016.

WHO 2013. Service Availability and Readiness Assessment (SARA) Implementation Guide : An annual monitoring system for service delivery *In:* WHO (ed.). 20 Avenue Appia, 1211 Geneva 27, Switzerland: World Health Organization.

SURVEY PERSONNEL *Appendix A*

ADVISORY COMMITTEE

Dr. Amha Kebede, Director General, EPHI
Dr. Yibeltal Assefa, Deputy Director General, Research and Technology Transfer, EPHI
Ato Abebe Bekele, Health System Research Directorate Director, EPHI

NATIONAL LEVEL COORDINATORS

Theodros Getachew
Abebe Bekele
Terefe Gelibo
Atkure Defar
Kassahun Amenu
Habtamu Teklie
Tefera Taddele
Girum Taye
Abebech Asmamaw
Mekonnen Tadesse

TECHNICAL WORKING GROUP (TWG)

Abebe Bekele
Theodros Getachew
Atkure Defar
Kassahun Amenu
Habtamu Teklie
Mekonnen Tadesse
Asfaw Kelbessa
Solomon Abay
Sisay Endale
Dr. Mekdim Enkossa
Dr. Sofonias Getachew

DATA PROCESSING TEAM

Terefe Gelibo
Beza Teshome
Solomon Enyew

REGIONAL COORDINATORS

Abebech Asmamaw
Girum Taye
Habtamu Teklie
Ibrahim Kedir
Kassahun Amenu
Tefera Taddele

World Health Organization (WHO)

Dr. Sofonias Getachew
Kavitha Viswanathan
Ashley Sheffel
Bob Pond

Editor

Tagu Zergaw (EPHI)

DATA COLLECTORS AND FIELD SUPERVISORS

Sara Gosaye	Habtamu derajew	Wallelign Molla
Endale Bezu	Gebreabezgi Welday	Hadush Hailu T/haimanot
Asmamaw Yideg	Astewaye Tesfaye	Atimen derso Bitew
Tadesse Tilahun	Elias Gashaw	Berhan Ararsa
Robel Gemechu	Gudeta Gedefa	Tenaw Yimer
Sena Abera	Abule Gelgelu	Eyasu Eshetu
Kaleb Kanito	Fekadu Ayalew	Lamesgin Abebayehu
Emebet Asnake	Habtemariam Abate	Tesfaye Diriba
Abiy Tesfu	Addisu Haile Hussien	Betsega Wolde
Sitota Ambecha	Tadesse Sahle	Yohannes Tsige
Diro Bedasa	Asgelom Mekonen	Meharu Ergicho
Yeshigeta Gebre	Alemayehu Gutasa Guchu	Assefa Degefaw
Bayush birhane Abay	Frezer Workneh Bekele	Laykemariam
Kedir Yimam	Hannamariam Getaye	Sintayehu Berhane
Hareg G/kidane	Mamaru Molla Mengistu	Ashenafi Belete wakie
Yosef Tefera Tesfaye	Rahel Meseret	Tadesse Tesfaye
Emebet Haile	Aliyi Amano Genemo	Mihret Gidey belay
Menelik Tadesse	Gezahegn Yimer mohammed	Dejene Yirdaw
Tizita Mesele	Mikias H/mariam	Kasaye Etefa Gemechu
Getahun Hibdye	Elsabet Birhanu	Adugna Andualem
Masresha Addis	Abebaw Molla	Mesfin Asmamaw
Tilaye Mengist	Simegnew Molla Messele	Wendesen Niguse
Deneke Gebre	Naji Abamecha Abanano	Habib Sabir
Meseret Robi	Wegayehu Zeneb	Engidashet Tsedeke
Hamba Yigezu	Mahlet Nebiyu	Abebaw Tiruneh
Ermiyas worku Tesema	Solomon Berhanu	Sisay Kesto Dune
Simegnew Fekadu	Cherinet Gugssa	Damte Beyene
Misikir Amare Teffera	Eden Belachew	Mikyas Arega

ETHIOPIA
Services Availability and Readiness Assessment 2016

Summary Report