MINISTRY
OF HEALTH

ANNUAL REPORT 2017

STATISTICAL REPORT 2017

FOREWORD

Health Information System (HIS) is critical pillar in the National Health care delivery system. It provides the data and information that are required to support evidence –based decision making in the Country's Health care planning and programming. As such the role of HIS is more than just routine collection of the health service data and subsequent conveyance of the same to higher levels of the health care system. HIS must endeavor to provide decision makers in health care system with value added data that enables them to make informed decisions. This annual report (2017) does exactly that by availing data on a diverse range of health related issues that are important to county and sub county level health care planners.

The data contained in this report are generated from diverse sources: individuals, health facilities, disease surveillance sites, the community as well as geographical (special) areas or units. The data which has been analyzed and aggregated is useful for planning purposes not at only the sub county but also the county and national levels depending on each levels needs and requirements. Health care providers are frequently concerned with the collection and reporting on health service (patient) data with minimal, if any, collection and reporting on management/ administrative data. In the absence of data collection and provision of information health resources such as personnel, finances, physical facilities, transport and equipment, becomes difficult to relate health resources to actual provision of services to the population being served.

This report provides reliable and relevant health information for use by all in order to make evidence based decisions in the allocation of the scarce resources available for purposes of improving the quality of health services at all levels in Garissa County

Currently District Health Information System 2 (DHIS) is used by all Counties to manage health data. In Garissa County 20 Health Centres were installed with EMR (AFYA EHMS) efforts that targets to establish and maintain a simple, coherent, technically sound, easily understood and compatible information system that tracks the degree of achievement of the health sector objectives at all levels while taking into account the county values of universal coverage, equity, equality and social justice. The ultimate should transcend data gathering and processing to the intelligent utilization of the information to improve health care service provision and delivery in

support of National aspiration, neatly encapsulated in our national long term development blue print, **vision 2030 of creating a globally competitive and prosperous nation with a high quality of life by 2030.**

ISNINO RAGE ALI
CHIEF OFFICER OF HEALTH
GARISSA COUNTY

ACKNOWLEDGEMENT

We would like to acknowledge the efforts of all health facility staff, other institutions and individuals who participated and contributed into providing the material that was used to draw up the report and the subsequent development of this report.

In particular, we wish to specially acknowledge the Chief Officer of Health, Garissa County and the entire County Health Management Team for their leadership support.

We also wish to thank the Sub County Health Management Teams and facility staffs for the valuable contribution and support in improving the Health Information System.

Special thanks go to County Health Records and Information Manager and the editorial team for the technical input and commitment during the process of developing this report.

Finally we wish to thank all those who contributed directly or indirectly into the development of this report.

TABLE OF CONTENT

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ABD	Available Bed Days
ACSM	Advocacy, Communication and Social Mobilization
ALOS	Average Length of Stay
ANC	Antenatal Clinic
ART	Anti Retroviral therapy
ARV	Anti Retroviral
BCG	Bacillus Calmette-Guerin
CBC	Central Bureau of Statistics
CORPS	Community Own Resource Persons
DHIS	District health information software
DLTLD	Division of Leprosy, TB and Lung Diseases
DOT	Direct Observation of Treatment
EHR	Electronic Health Records
EMR	Electronic Medical Records
EPTB	Extra Pulmonary Tuberculosis
FIC	Fully Immunized Child
GOK	Government of Kenya
HIS	Health Information System
HIV/AIDS	Human Immune-Deficiency Virus/ Acquired Immune Deficiency Syndrome
ICT	Information Communication Technology
KDHS	Kenya Demographic Health Survey
MCH	Maternal Child Health
MDGS	Millennium Development Goals
MDR	Multi Drug Resistance
MFL	Master Facility List
OBD	Occupied Bed Days
OOC	Out of Control
OPV	Oral Polio Vaccine
Penta	Pentavelent
PMTCT	Prevention of Mother to Child Transmission
SM+VE	Smear Positive

SMND	Smear Not Done
SM-VE	Smear Negative
TB	Tuberculosis
TO	Transfer Out
WPV	Wild Polio Virus

EXECUTIVE SUMMARY

This executive summary sets out the key highlights of the Annual Health sector statistics for year 2017. The report, which was compiled by the County Health Information Office Garissa, contains aggregated statistics for the County Health Sector and is an invaluable guide for decision makers at all levels of the health care system in the County.

This annual report is statistical compilation of key health sector indicators, rates and trends accompanied by detailed illustrations in the form of tables and figures. The County morbidity trend remained constant over the past three years with Upper Respiratory Tract Infections being leading cause of OPD morbidity for 2015, 2016 and 2017, and UTI, Diarrhoea, disease of skin and other diseases of respiratory system being among the top 5 morbidities in the 3 consecutive years. However, there is an upward trend in non-communicable diseases like diabetes and hypertension for the last 4 years. The reporting rate for OPD morbidity was at 86%.

Service workload measures accessibility (new patients) and utilization (re-visits) and is used for planning and allocation of resources in a health institution. There has been a gradual increase in workload in the County from 2013 to 2016 and a slight decrease in 2017 which can be attributed to the prolonged industrial strike. The percentage bed occupancy was 24% in year 2017 compared to 52% in 2016, Average length of stay was 3 days (period between admission and discharge) and on average, each bed was occupied by 27 patients in the year 2017.

In the inpatient services, there were a total of 10,298 inpatient cases and 268 deaths as reported in DHIS event capture module with Pneumonia unspecified (J18.9) was the leading cause of admission and mortality with 868 cases of admission and 17 deaths translating to 8.4% of total admissions and 6.3% of all mortalities respectively.

Immunization program targets children Under 1 year, however measles second dose was introduced in 2013 to include children up to two years. Out of 24,065 under 1 year children eligible for immunization in 2017, only 13,338 (55%) children were fully immunized while 10,727 (45%) were not reached with both routine and outreach strategies. This was decline in comparison to 68% in 2016.

Nutrition program measures the nutrition status of under-five and manage malnutrition. In year 2013, 10% of the children weighed were underweight, while 3% were stunted. 6—23 months were most malnourished; this may be due to the introduction of complementary feeding at this age. 8% of the children attending child welfare clinic were underweight in 2017 compare to 7% in 2016, however, stunting rate improved marginally from 2.5% in 2016 to 1.7% in 2017.

Utilization of the skilled delivery services reduces significantly the effects related to complications that may arise during child birth. Many of these obstetric complications are preventable if diagnosed early and a proper management constituted promptly. Despite Maternity services being free, the County had a reduction of Skilled Deliveries coverage from 46% in 2016 to 44% in 2017 which can partly be attributed the prolonged nurses strike that lasted for 5 months.

Family planning coverage is still very low in the county, coverage rate dropped marginally in 2017 to 8% down from 10% in 2016 with Garissa Sub County having the highest number of women on family planning at 14%.

A total of 44,685 clients were tested for HIV thus 6.4% of county population knew their HIV status in year 2017. The County HIV prevalence was 0.76%.

INTRODUCTION

This annual report is a summary of aggregate of services carried out in the year under review.
The report covers program activities, interventions and achievements. The source of data was mainly drawn from:

- Outpatient system that reports morbidity and other statistics that are collected for patients who are non-resident in health facilities

- In patient system that reports morbidity and mortality for patients admitted in health facilities

- Service workload statistics that analyse health service utilization

- Hospital administrative statistics that describes bed utilization and other activities in the inpatient departments of the hospitals.

This report is in accordance with the monitoring and evaluation framework in the Kenyan health system which essentially based on reports from the routine Health information system.
The critical functions of monitoring and evaluation in Health information system are two- fold. First, to inform policy makers about the progress towards achieving targets and meeting objectives and secondly to assist health managers in day to day decision making and respond to data demand towards millennium development goals and the aspirations of vision 2030.
Therefore, the information system incorporates most of the data needed by policy makers, clinicians, and health service users to promote and protect population health.

OVERVIEW OF HEALTH INFORMATION SYSTEM

The vision and mission of HIS are derived from the Kenya health policy framework, the performance monitoring and evaluation framework and to the achievement of Kenya's vision 2030.

Vision

To be a centre of excellence for quality health and health –related data for information for use by all.

Mission

To provide timely, reliable and accessible quality health information for evidence –based decision making in order to maximize utilization of scarce resources in the health sector.

Mandate

The mandate of HIS is to collect, generate, analyze and disseminate health information to facilitate Effective policy formulation, management, planning, budgeting, implementation, monitoring and evaluation of health services and program interventions in the health sector.
The Health Information System (HIS) is essentially a comprehensive and intergraded system that is involved in collection, collation, analysis, evaluation, storage and dissemination of health and health related data and information for use by its various stakeholders.

The HIS is like other systems, consists of parts and levels which are interrelated, interdependent and work towards a common goal. The malfunctioning of any of the parts affects other parts of the system. Similarly therefore, the functionality and operations of HIS not differ from this in that it collects morbidity and mortality statistics, service statistics to support rational resource allocation such as human resource, financial, fixed assets and infrastructure ,drugs and supplies logistics. It is therefore evident that HIS is a powerful tool for making health care delivery more effective and efficient.
Currently HIS data is collected and entered into the web based District Health information software where it is accessible to all users.

1.0 CHAPTER ONE: DEMOGRAPHIC PROFILE

1.1 Geographic Background

Garissa County is one of the 47 (007) Counties in Kenya. It covers an area of 44,174.1Km^2 and lies between latitude 10 58'N and 20 1' S and longitude 380 34'E and 410 32'E. The County borders the Republic of Somalia to the East, Lamu County to the South, Tana River County to the west, Isiolo County to the North West and Wajir County to the North.

The County is low lying, with altitudes ranging between 70m and 400m above sea level. The area is hot and dry most of the year, receiving scarce rainfall in the range of 150mm -300mm annually. Frequent droughts and unreliable rains do not favour agricultural activities and the growth of pasture for livestock rearing. Tana River runs along the western boundary of the County and is the only permanent natural source of water for Garissa town and the surrounding areas. Seasonal Rivers (laggas) provide water during the wet season for both human and livestock, although they greatly interfere with road transportation. The County also hosts part of Boni forest, a section of which is the Boni National Reserve, a protected wildlife conservation area.

The County hosts the largest Refugee Camp in the world (Dadaab) with an estimated population of about 450,000 people, this makes the County prone to outbreaks of communicable diseases.

Garissa has seven Sub Counties namely; Garissa, Ijara, Dadaab, Lagdera, Fafi, Hulugho and Balambala. The County is mostly inhabited by ethnic Somalis, however, Garissa Township is mostly cosmopolitan. The County has an estimated population of 725, 589, A male population of 380,211 and a female population of 345,348 (census 2009).

1.2 Map of Garissa

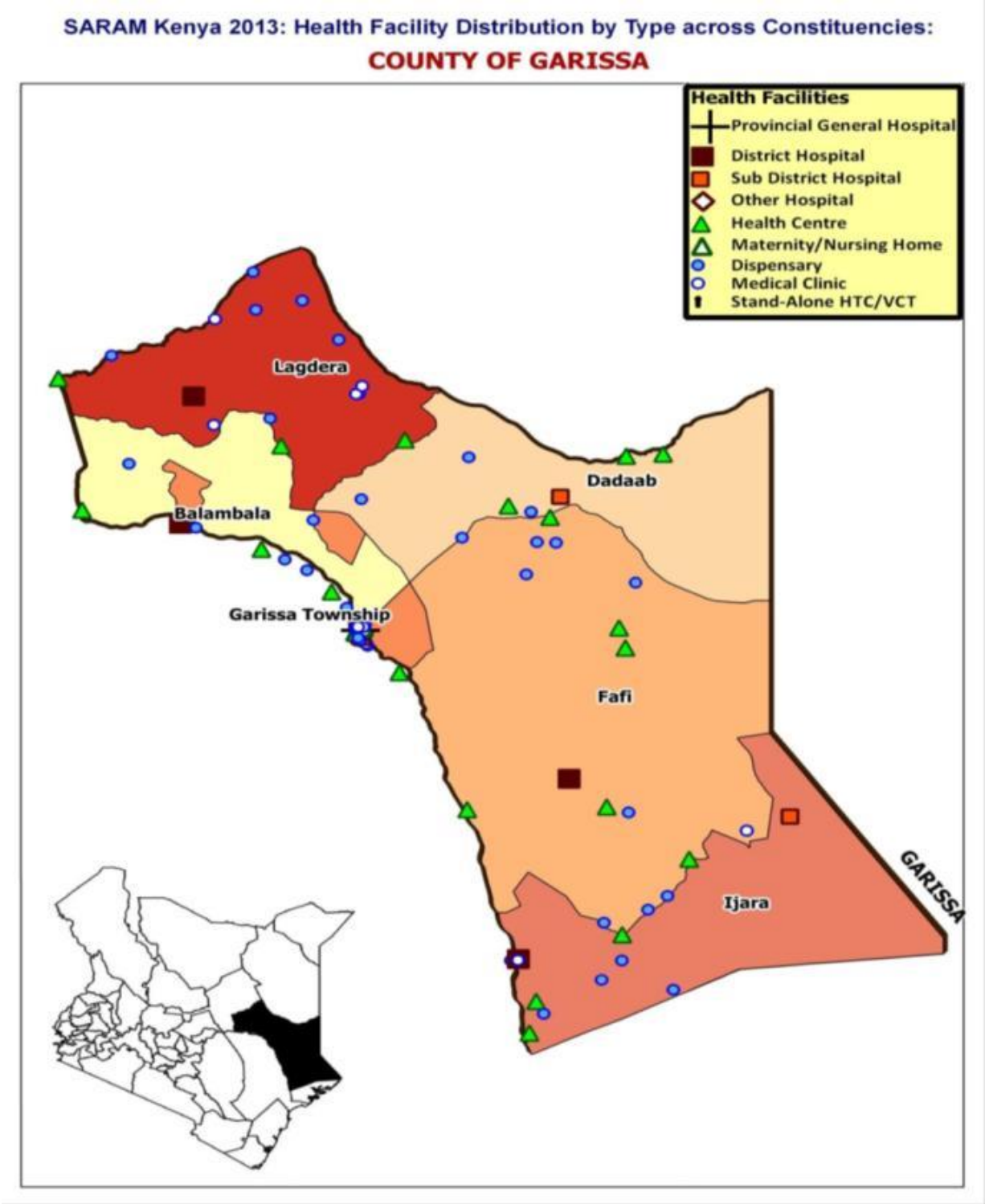


Figure 1 Map of Garissa County

1.3 Population pyramid for Garissa County

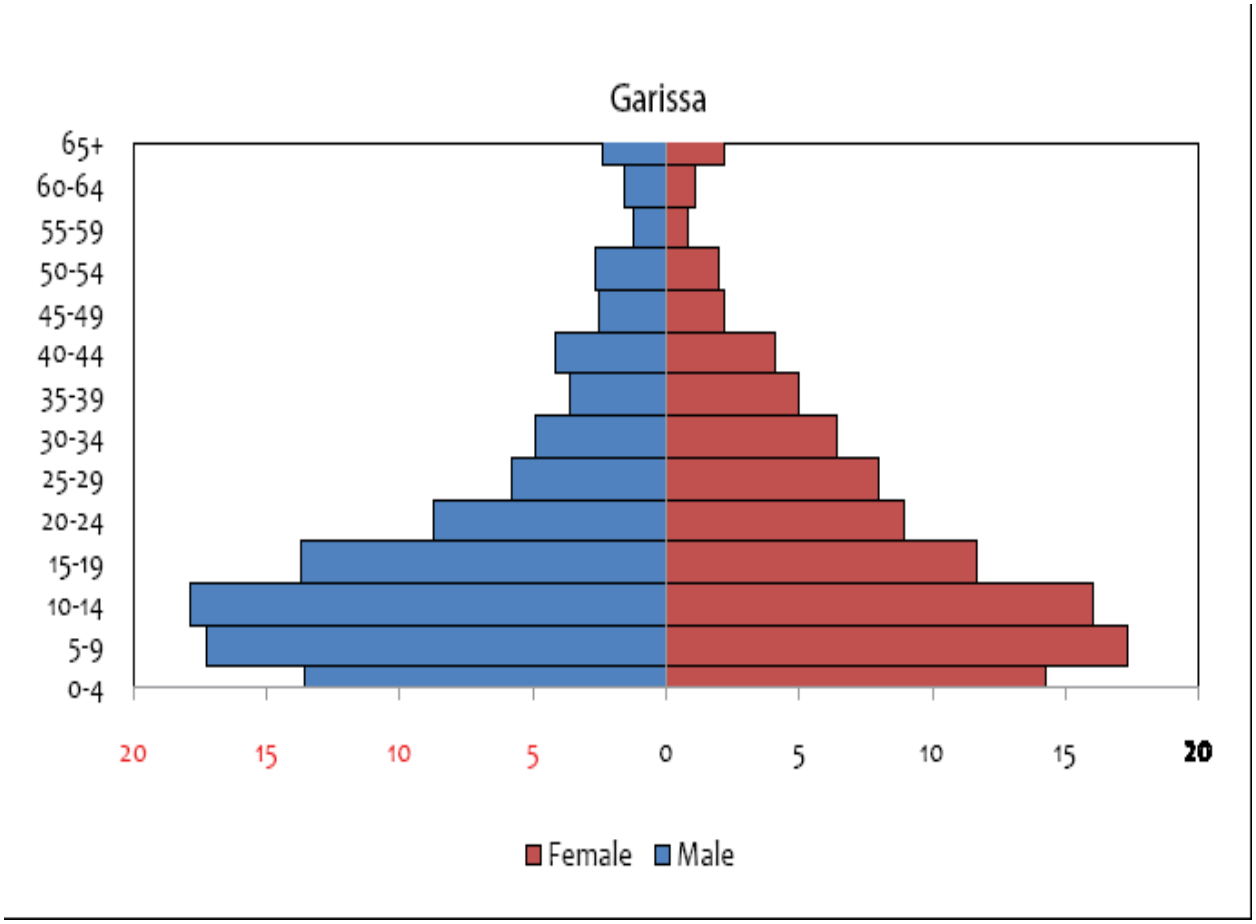


Figure 2 Garissa County population pyramid, 2017

1.4 Population Size and Composition

The County has an estimated population of 725, 589, A male population of 380,211 and a female population of 345,348 (census 2009).

Table 1 Garissa County Population Projections 2009 - 2017

	Garissa County population projections 2009 - 2017								
Sub County	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Balambala	62,390	64,823	67,351	69,978	72,707	75,543	78,489	81,550	84,730
Dadaab	66,520	69,220	72,029	74,952	77,994	81,159	84,453	87,880	91,307
Fafi	93,285	97,071	101,010	104,949	109,042	113,295	117,714	122,304	127,074
Garissa	127,672	132,651	137,825	143,200	148,785	154,587	160,616	166,880	173,388
Hulugho	48,814	50,718	52,696	54,751	56,886	59,105	61,410	63,805	66,293
Ijara	43,849	45,559	47,336	49,182	51,100	53,093	55,164	57,315	59,550
Lagdera	69,760	72,591	75,537	78,602	81,792	85,111	88,565	92,159	95,754
County	**512,290**	**532,633**	**553,783**	**575,614**	**598,306**	**621,893**	**646,410**	**671,893**	**698,097**

Source: Garissa County CIDP – 2017, Growth rate – 3.9%

1.5 Projected Population by Category Projected Population by Category

Table 2 Projected Population for 2017 by category

Description	Estimated proportion (%)	Estimated Population 2017
Total population	100	**698,097**
Total Number of Households	5.9	116,350
Children under 1 year (12 months)	3.4	23,735
Children under 5 years (60 months)	16.3	113,790
Under 15 year population	44.6	311,351
Women of child bearing age (15 – 49 Years)	23.2	161,959
Estimated Number of Pregnant Women	3.7	25,830
Estimated Number of Deliveries	3.7	25,830
Estimated Live Births	3.5	24,433
Total number of adolescent(15-24)	21.5	150,091
Total number of adults (25-59)	29.8	208,033
Total number of elderly (60+)	4.4	30,716

Table 3 Population per Sub county 2017

Sub County	Total population	Households	Population <1y	Population <5y	Population <15y	WCBA	Deliveries
Balambala	84,730	14,122	2542	12710	38637	19064	2796
Dadaab	91,307	15,218	3013	16435	38623	21914	3104
Fafi	127,074	21,179	3812	19061	57946	28592	4193
Garissa	173,388	28,898	7802	27742	79065	39012	8102
Hulugho	66,293	11,049	1998	10655	26636	15982	2198
Ijara	59,550	9,925	2025	10719	28584	14292	1965
Lagdera	95,754	15,959	2873	16470	41844	22981	3160
County	**698,097**	**116,350**	**24065**	**113792**	**311335**	**161837**	**25518**

Source: DHIS

1.6 Distribution of Health facilities in the county

Health care services in the County is provided by a mix of public, private, traditional groups and NGOs (especially in the refugee camps) with the government providing over 90% of the health services through community units (87 units), primary health care facilities (76), GOK Hospitals (8), and (83) private facilities.. The private health facilities are mainly confined to the big commercial centers and a very few in small towns. The average distance between health facilities is more than 45 km.

1.7 Distribution of Health Facilities by type

Table 4 Distribution of Health Facilities by type

S/No	Sub County	Community Units	Dispensaries	Health Centres	Hospitals	Private Facilities	Total
1	**Balambala**	9	6	3	1	0	**19**
2	**Dadaab**	14	10	4	1	2	**31**
3	**Fafi**	13	6	5	1	1	**26**
4	**Garissa**	18	12	3	2	76	**111**
5	**Hulugho**	8	4	1	1	0	**14**
6	**Ijara**	11	7	3	1	2	**24**
7	**Lagdera**	15	12	2	1	2	**32**
8	**County**	**88**	**57**	**21**	**8**	**83**	**257**

51% of the total health facilities are Government owned while 49% are privately owned.

Garissa Sub County has the highest number of private facilities accounting for 82%, however, only 8 (11%) report to DHIS.

Balambala and Hulugho Sub Counties do not have private facilities.

1.8 Human Resource by Cadre-2017

Table 5 Human Resource by cadre

SNO	Cadres	Available	Required	Gap
		GOK		
1	Medical officers	43	102	59
2	Medical Specialist	18	33	15
3	RCO	64	220	156
4	BSC Nursing	10	30	20
5	KRCHN	240	300	60
6	KECHN	105	250	145
7	Occupational Therapist	2	20	18
8	Dentist	3	14	11
9	Dental Technologist	4	30	26
10	Pharmacists	11	30	19
11	Pharmaceutical Technologist	23	30	7
12	Physiotherapist	6	20	14
13	Orthopaedic technologist	7	24	17
14	Medical Social worker	2	8	6
15	Plaster technicians	2	20	18
16	Laboratory Technologists	80	100	20
17	Laboratory Technician	3	48	45
18	Health Record & Information Officers	26	40	14
19	Health Record & Information Technicians	4	20	16
20	Nutritionists	46	71	25
21	Public health officer	67	88	21
22	Public health technician	1	26	25
23	Medical Engineering	4	20	16
24	Radiographer	8	30	22

25	Community Oral Health Officer	3	14	11
26	CHEWs	52	88	36
27	Health Administrative Officer	13	24	11
28	ICT Officer	1	11	10
29	Procurement Officer	0	18	18
30	Accountant	2	14	12
31	Drivers	38	44	6

Generally, there is a huge shortage of human resource for health as shown in Table 5 above.

2.0 SERVICE DELIVERY STATISTICS

2.1 OUT PATIENT MORBIDITY

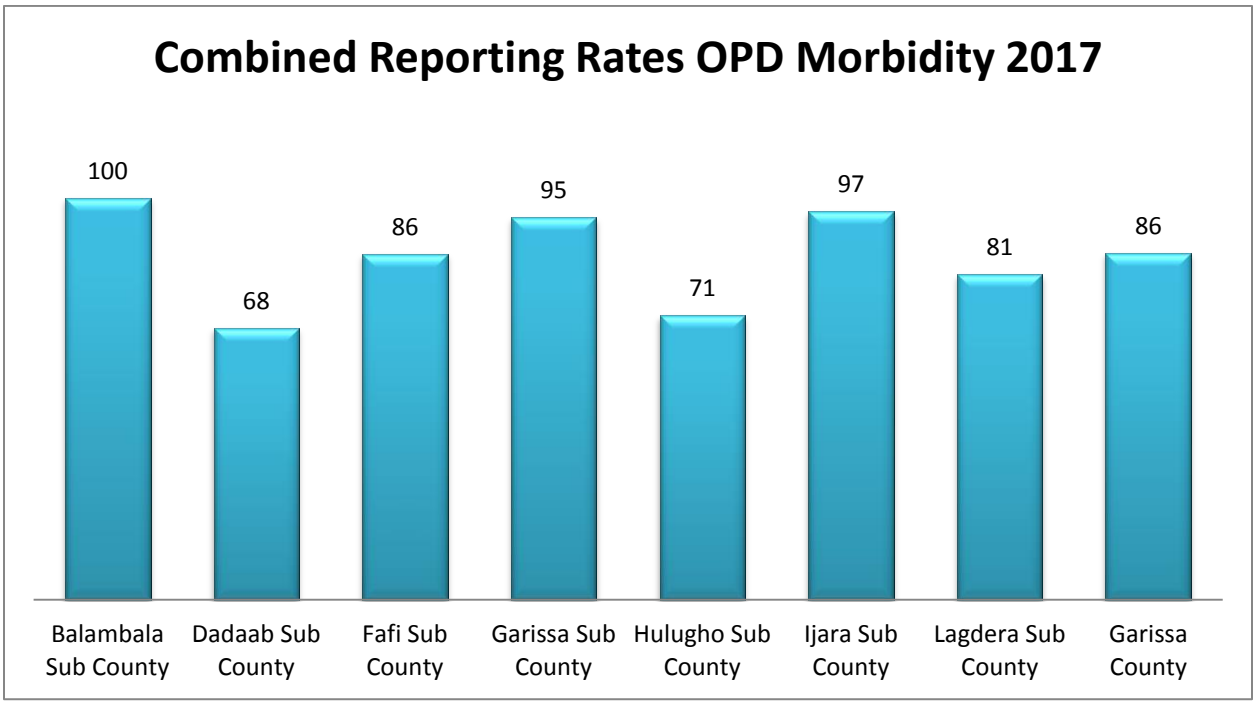


Figure 3 Combined Reporting Rates for OPD Morbidity 2017

The County Reporting Rate for OPD Morbidity was 86% (MOH 705A&B)

2.2 Top ten OPD Morbidities 2017

Table 6 Top Ten OPD Morbidity 2017

Top Ten Morbidities Combined (<5&>5years)	2016	Top Ten Morbidities Combined (<5&>5years)	2017
Upper Respiratory Tract Infections	130,582	Upper Respiratory Tract Infections	141,738
Other Dis. Of Respiratory System	67,300	Urinary Tract Infection	60,073
Urinary Tract Infection	64,048	Diarrhoea	36,869
Diarrhoea	40,181	Other Dis. Of Respiratory System	25,007
Disease of the skin	31,080	Disease of the skin	22,139
Pneumonia	28,392	Pneumonia	20,689
Intestinal worms	12,606	Typhoid fever	10,748
Ear Infections/ Conditions	12,065	Ear Infections/ Conditions	9,971
Typhoid fever	10,208	Intestinal worms	9,858
Confirmed Malaria (only Positive cases)	8,985	Fevers	7,573

Upper Respiratory Tract Infections was the leading cause of OPD morbidity for both 2016 and 2017, with UTI, Diarrhoea, disease of skin and other diseases of respiratory system being among the top 5 morbidities in the 2 consecutive years.

2.3 Contribution of top ten from total cases 2017

Table 7 Contribution of Top Ten from total cases 2017

Contribution of top ten from total cases		
Top Ten Morbidities Combined (<5&>5years)	2017	Contribution from total cases
Upper Respiratory Tract Infections	141,738	33%
Urinary Tract Infection	60,073	14%
Diarrhoea	36,869	9%
Other Dis. Of Respiratory System	25,007	6%
Disease of the skin	22,139	5%
Pneumonia	20,689	5%
Typhoid fever	10,748	3%
Ear Infections/ Conditions	9,971	2%
Intestinal worms	9,858	2%
Fevers	7,573	2%

33% of the clients who attended OPD department were treated for URTI, 14% for UTI and 9% for diarrhea.

2.4 Contribution of under five morbidity from total cases

Table 8 Contribution for Under 5 from total OPD cases

SNO.	Condition	Number of cases	contribution from the total cases (combined <5&>5)	contribution from the total cases <5
1	Upper Respiratory Tract Infections	64475	45%	41%
2	Diarrhoea	25342	69%	16%
3	Other Dis. of Respiratory System	9990	40%	6%
4	Pneumonia	9517	46%	6%
5	Diseases of the skin	8141	37%	5%
6	Tonsillitis	6138	100%	4%
7	Urinary Tract Infection	5347	9%	3%
8	Intestinal worms	5173	52%	3%
9	Fevers	4150	55%	3%
10	Ear Infections/Conditions	3478	35%	2%

Of the diarrhea cases treated from the OPD 69% were children below the age of 5 years.

4% of children below 5 years who visited OPD were treated for tonsillitis, this account for all cases (100%).

2.5 Diarrhoea trend 2015 - 2017

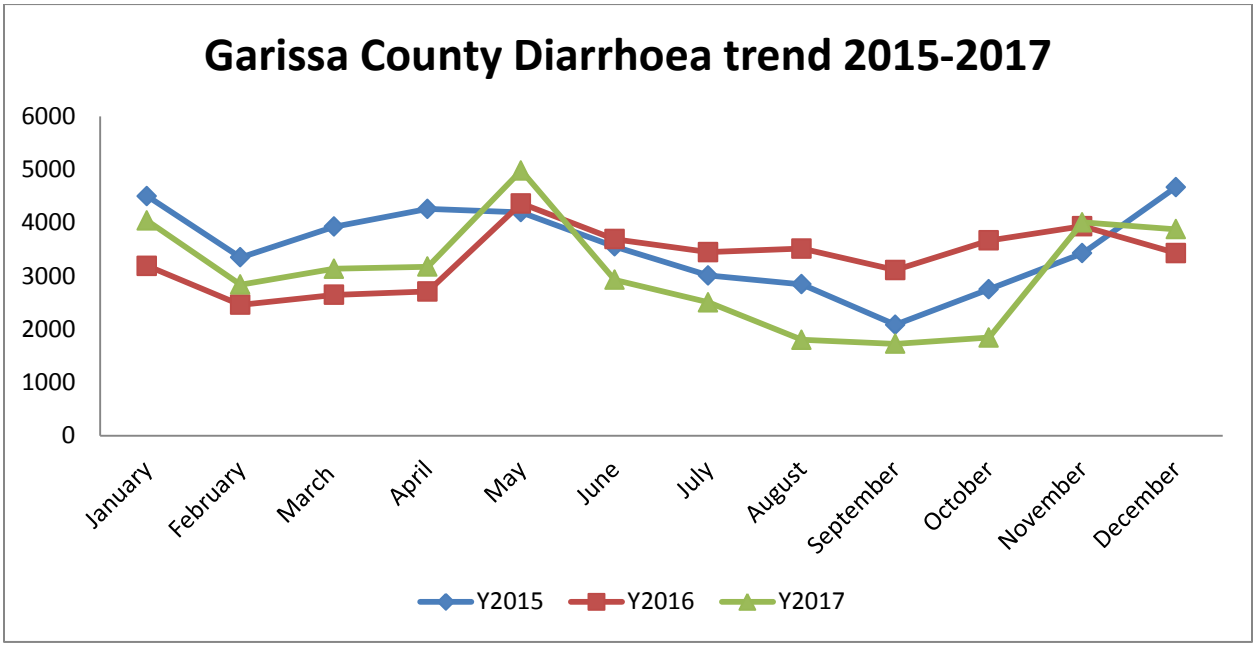


Figure 4 Garissa County Diarrhoea trend 2015-2017

In all the years, the months of January, may and December recorded the highest number of diarrhea cases, this may be attributed to rainy period in the county. Months with dry spell record the least number of cases.

2.6 Pneumonia trend 2015 - 2017

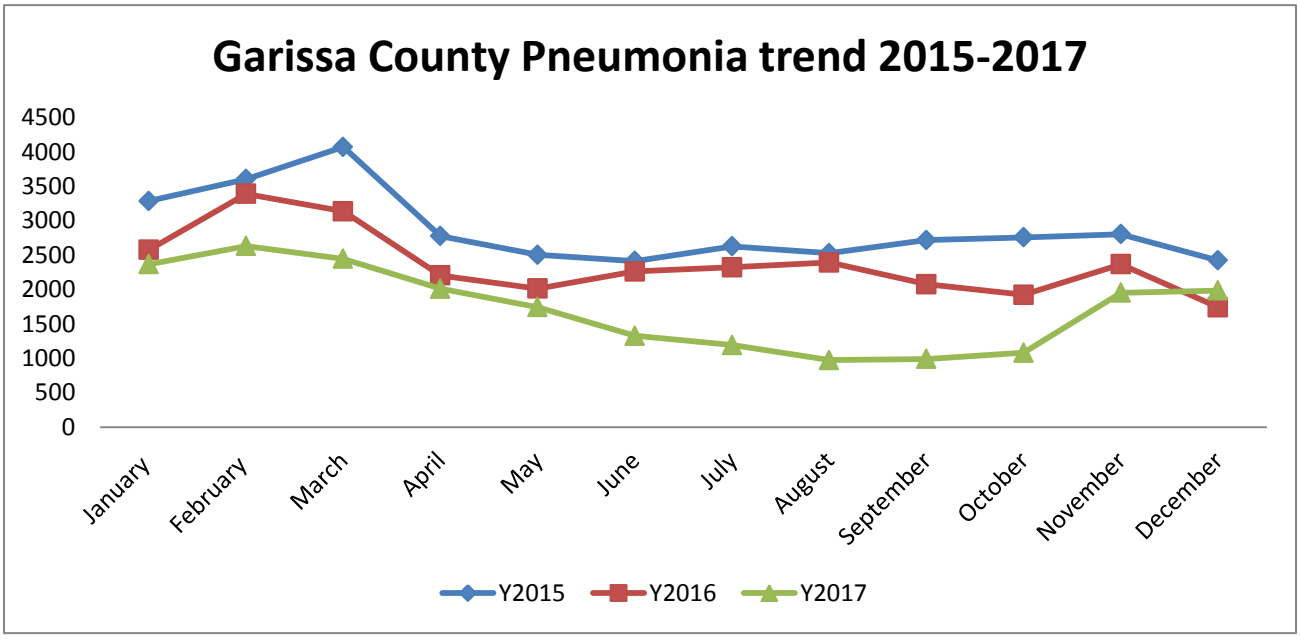


Figure 5 Garissa County Pneumonia trend 2015 - 2017

- Pneumonia is one of the immunizable diseases introduced in EPI schedule in year 2011 however, the burden of pneumonia is still high in the County.
- In year 2017, 6% of the OPD cases were pneumonia out of which 46% were children below the age of 5 years.
- High cases of pneumonia were reported between the months of February and March across the years under review.

2.7 Trend of non communicable diseases

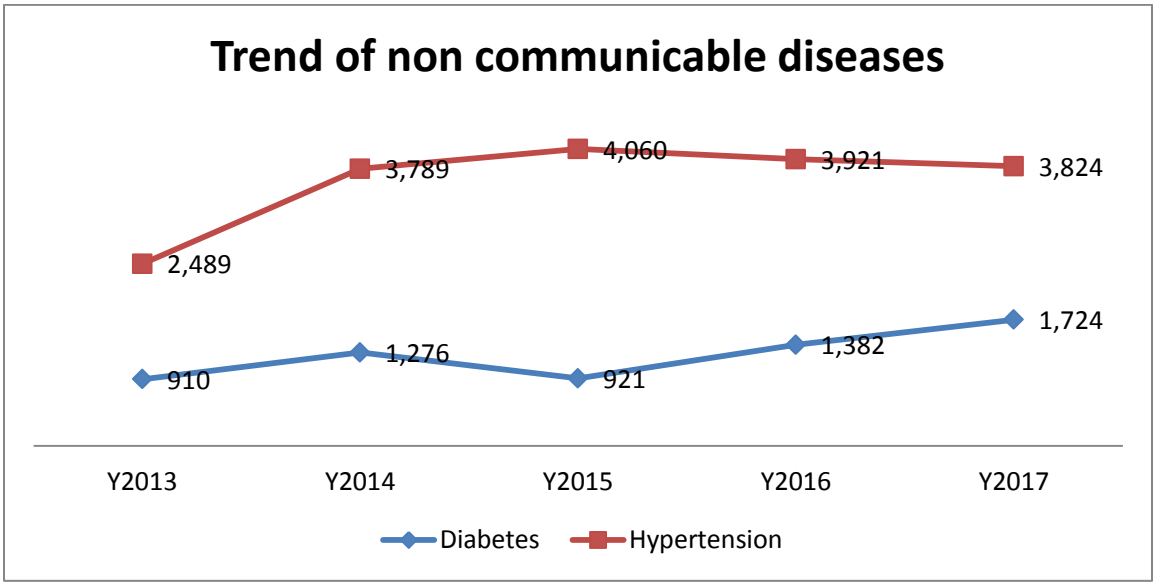


Figure 6 Trend of non communicable diseases

- Generally, there is an upward trend in diabetes cases through the years 2013 to 2017.
- Hypertension cases have been on gradual decrease from year 2015 through to 2017.

3.0 WORKLOAD

Service workload statistics are derived from the facilities on day to day activities on outpatient services. It measures accessibility (new patients) and utilization (re-visits). Workload is used for planning and allocation of resources in a health institution.

In the year 2017 the County expected 1020 reports, however, 859 reports were received which accounted for 84%. This was a reduction as compared to the previous year 2016 which was 92%.

Some of the probable causes include:

- Non-submission of reports by health facilities during the Industrial Strike which lasted for almost 5 months.
- Closure of health facilities due to insecurity.
- Knowledge gap especially for newly recruited staffs.

3.1 Report Completeness and Timeliness

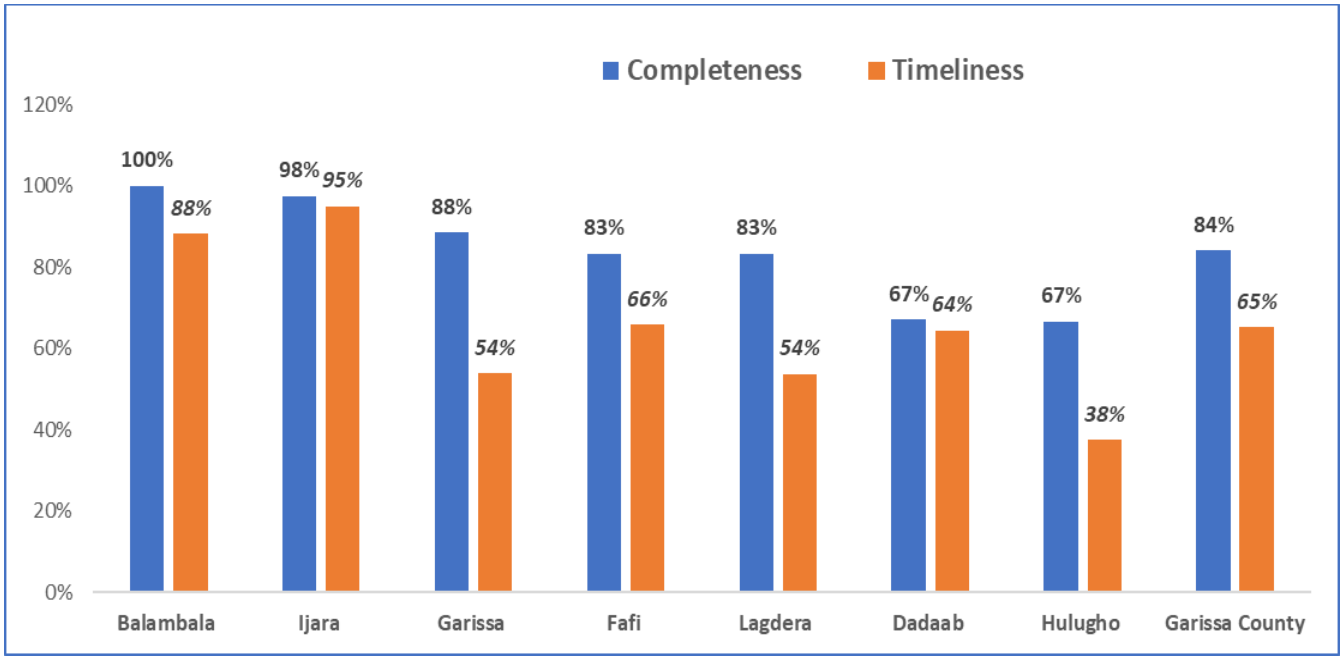


Figure 7 Reporting Rates 2017

Garissa County workload reporting rate was 84% Complete and 65% timely. Hulugho and Dadaab Sub Counties had the lowest reporting completeness each at 67% while Balambala had

the highest at 100%. In terms of timeliness, Ijara Sub County was highest with 95% while Hulugho had the lowest with 38%.

3.2 Trend of OPD Workload

Figure 8 Trend of OPD workload

TREND OF OPD WORKLOAD					
SUBCOUNTY	**2013**	**2014**	**2015**	**2016**	**2017**
Balambala	33,453	47,758	44,897	44,790	39,712
Dadaab	47,618	83,749	109,502	134,452	77,929
Fafi	42,583	90,119	50,483	71,083	72,944
Garissa	168,423	213,161	208,003	219,253	186,193
Hulugho	141,69	22,648	16,379	21,904	17,353
Ijara	36,201	51,285	62,402	69,523	63,458
Lagdera	461,91	67,328	66,403	62,542	53,643
GARISSA COUNTY	**355,185**	**576,048**	**558,069**	**623,547**	**511,232**

The above table shows the total number of patients seen per year, per Sub County from 2013 to 2017 with 2016 recording the highest workload.

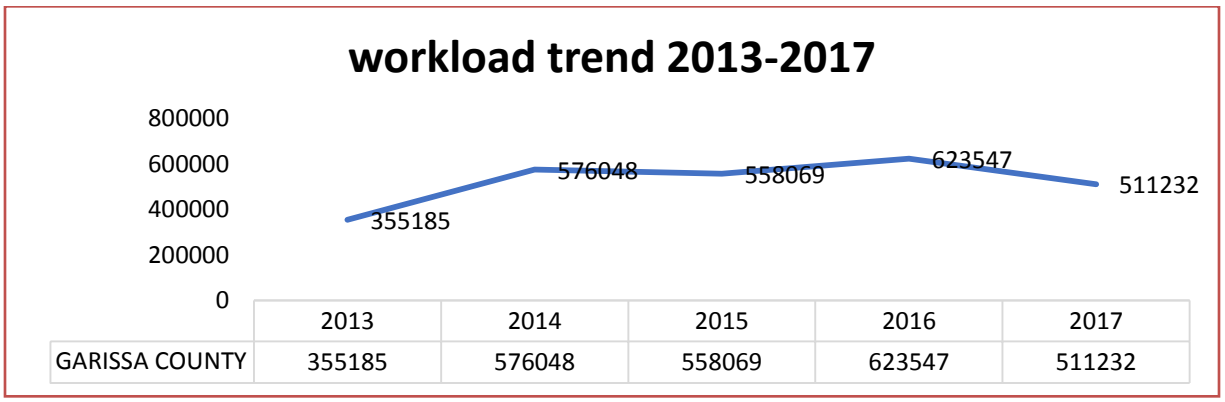


Figure 9 Trend of OPD workload 2013-2017

There is a gradual increase in workload in the county from 2013 to 2016 and a slight decrease in 2017 which can be attributed to the prolonged industrial strike.

3.3 Access and Utilization

Utilization of health care refers to use if health services by the people and accessibility to a facility is the ability to provide required health services.

Table 9 Access and Utilization of services

	ACCESS					UTILIZATION				
SUBCOUNTY	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
Balambala	39%	52%	46%	44%	40%	7%	11%	11%	11%	7%
Dadaab	37%	69%	87%	109%	62%	20%	32%	41%	34%	23%
Fafi	24%	35%	20%	32%	27%	16%	37%	23%	26%	28%
Garissa	96%	261%	94%	103%	87%	17%	32%	35%	28%	20%
Hulugho	20%	28%	21%	26%	19%	7%	9%	6%	8%	7%
Ijara	53%	74%	97%	108%	87%	16%	21%	15%	13%	20%
Lagdera	42%	56%	55%	50%	44%	14%	23%	20%	17%	12%
GARISSA COUNTY	**50%**	**103%**	**62%**	**69%**	**55%**	**15%**	**26%**	**24%**	**22%**	**18%**

55% of Garissa County population accessed services at health facilities in year 2017 with Garissa and Ijara Sub Counties having the highest at 87% while Hulugho having the least at 19%.

Utilization was low at 18% with Dadaab Sub County having 23%, this means that clients don't come back for follow up visits.

3.4 Outpatient Attendance Per 1000 Population

Table 10 Outpatient attendance per 1000 population

Sub County	Population 2017	OPD Workload	Outpatient attendance per 1000 population
Balambala Sub County	84,730	39,712	469
Dadaab Sub County	91,307	77,929	853
Fafi Sub County	127,075	72,944	574
Garissa Sub County	173,388	186,193	1,074
Hulugho Sub County	66,591	17,353	261
Ijara Sub County	59,,550	63,458	1,066
Lagdera Sub County	95754	53,643	560
GARISSA COUNTY	**698,395**	**511,232**	**732**

The average number of Outpatient attendance per 1000 population was 732 with Ijara and Garissa having the highest at 1066 and 1074 respectively.

3.5 Proportion of OPD Filter Clinic Attendance in Garissa County

Table 11 Proportion of OPD filter clinic attendance

	ATTENDANCES	**% ATTENDANCES**
OPD Attendance <5yrs Female	83,371	16%
OPD Attendance <5yrs Male	76,909	15%
OPD attendance >5yrs Male	143,098	28%
OPD attendance >5yrs Female	188,269	37%
OPD Casualty attendance	19,585	4%
TOTAL	**511,232**	**100%**

More female clients are attending filter clinics as compared to men in both under and over 5 years, this expected as they are care givers in the homes, will accompany children and relatives to hospitals and will always inform health care workers of any concern they may be having in regard to their health.

Table 12 workload per Nurse per Sub County

Sub County	OPD Workload	No of Nurses	No of Patients Per Nurse per day
Balambala Sub County	39,712	21	7
Dadaab Sub County	77,929	28	11
Fafi Sub County	72,944	23	12
Garissa Sub County	186,193	198	4
Hulugho Sub County	17,353	7	10
Ijara Sub County	63,458	32	8
Lagdera Sub County	53,643	26	8
GARISSA COUNTY	**511,232**	**335**	**6**

On average, one Nurse attends to 6 clients in a day in the County with Fafi and Dadaab Sub Counties Nurses attending to 12 and 11 clients respectively.

3.6 Administrative Statistics

Hospital administrative statistics is based on bed compliment against occupation of the same in a period of time which intern generate indicators useful in planning and management of services to the patients and hospital concerned.

Administrative statistics is a service offered in Tier 3 hospitals (Sub County Hospitals and County referral Hospital) where inpatient admission services are available. This is reported in four different data sets namely

- ✓ Event capture
- ✓ Service workload

- ✓ Hospital Administrative statistics
- ✓ Inpatient activities

The statistics provide hospital administration with indicators necessary to deliver services on evidence based aspect. Specific areas concerned where managers are likely to benefit are:

- Procurement and supplies
- Identifying health needs in the catchment population.
- Effectiveness of the curative services
- Measures access in terms of admissions
- Staffs, bed utilization and availability

3.7 Hospital administrative statistics 2017

Table 13 Hospital Administrative statistics 2017

Data	Balambala	Dadaab	Fafi	Garissa	Hulugho	Ijara	Lagdera	Garissa County
Beds	14	42	8	242	12	37	20	375
Cots	0	0	0	3	2	3	2	10
Admissions 2016	216	561	0	14,338	301	1,821	805	18,042
Admissions 2017	159	384	507	5,729	322	1309	554	8,964
Discharges 2017	152	440	507	6,248	354	1279	471	9,451
Absconders	0	12	1	275	0	41	13	342
Deaths	0	3	1	228	1	8	11	263
Parole	0	35	0	63	0	0	0	98
Occupied Bed Days 2016	621	948	0	52,639	101	11,431	1,616	67,356
Occupied Bed Days 2017	444	470	507	27,566	34	1,613	1,590	32,224
Well Persons Days	0	0	0	172	114	90	20	396
Available Bed Days	5,124	15,372	2,928	88,330	4,392	13,505	7,320	136,971
Vacant Bed Days	4,680	14,902	2,421	60,764	4,358	11,892	5,730	104,747
Average Length of Stay	**3**	**1**	**1**	**4**	**0**	**1**	**3**	**3**
Turn over Interval	**31**	**33**	**5**	**9**	**12**	**9**	**12**	**10**
Through put Per Bed	**11**	**11**	**64**	**28**	**30**	**36**	**25**	**27**
Bed Occupancy 2016	**12%**	**56%**	**3%**	**47%**	**22%**	**42%**	**0%**	**52%**
Bed Occupancy 2017	**9%**	**3%**	**17%**	**31%**	**1%**	**12%**	**22%**	**24%**

- The County had a total of 375 Beds and 10 Cots for the year 2017
- There were a total of 8,964 admissions in 2017 as compared to 18,042 admissions for the year 2016, this drop was contributed by the industrial strike that was between July to October 2017
- The County reported total number of 263 deaths in the year 2017
- The percentage bed occupancy was 24% in year 2017 compared to 52% in 2016
- Averagely, each bed stayed vacant for 10 days between successful patients
- On average, each bed was occupied by 27 patients in the year 2017
- Average length of stay was 3 days (period between admission and discharge)

3.8 Admissions per Sub County

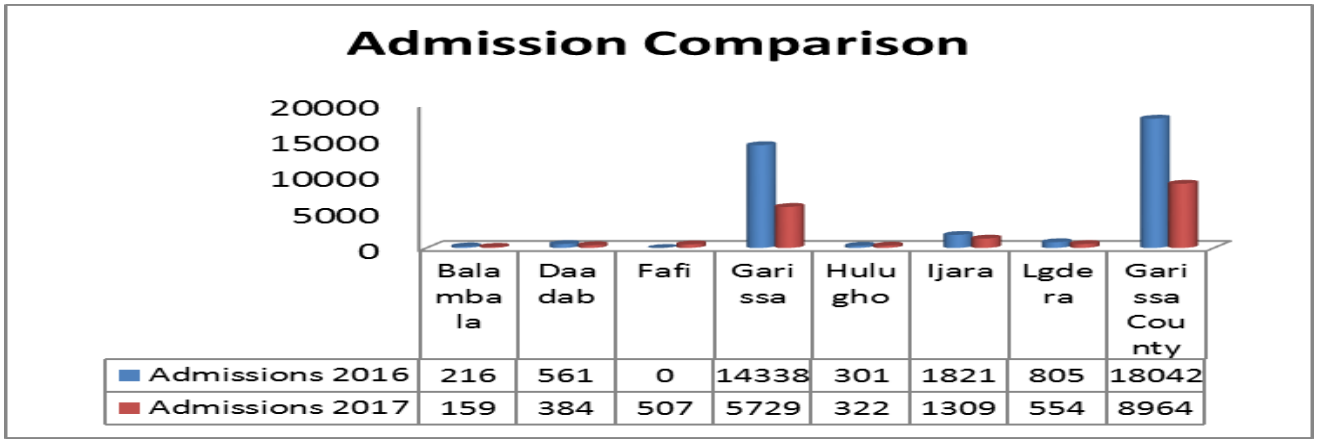


Figure 10 Admissions per Sub County

There was a general drop of admission cases in all Sub Counties in year 2017 this can be attributed to the prolonged industrial strike.

3.9 Top Ten Causes of Inpatient Morbidity

Table 14 Top Ten causes of inpatient morbidity 2017

S/No.	ICD 10 CODE	DIAGNOSIS	Totals Cases	% of Totals (10298)
1	J18.9	Pneumonia, unspecified	868	8.4%
2	A09	Diarrhea and gastroenteritis of presumed infectious origin	674	6.5%
3	P36.9	Bacterial sepsis of newborn, unspecified	219	2.1%
4	I10	Essential (primary) hypertension	166	1.6%
5	P21.9	Birth asphyxia, unspecified	136	1.3%
6	D64.9	Anemia, unspecified	132	1.3%
7	O06.4	Unspecified abortion, incomplete, without complication	110	1..1%
8	T63.0	Snake venom	99	1.0%
9	B53.8	Other parasitological confirmed malaria, NEC	93	0.9%
10	P24.0	Neonatal aspiration of meconium	89	0.86%

There were a total of 10,298 inpatient cases reported in DHIS event capture module.

Pneumonia unspecified (J18.9) was the leading cause of admission with 868 cases translating to 8.4% of total admissions.

Neonatal aspiration of meconium (P24.0) had the least number of cases among top 10 conditions with 89 cases translating to 0.86%.

3.10 Top Ten Causes of Inpatient Mortality

Table 15 Top Ten causes of inpatient mortality 2017

S/No.	ICD CODE	Diagnosis	Total Cases	% of the total
1	J18.9	Pneumonia, unspecified	17	6.3%
2	P21.9	Birth asphyxia, unspecified	10	3.7%
3	D64.9	Anemia, unspecified	10	3.7%
4	B23.8	HIV disease resulting in other specified conditions	8	3.0%
5	P36.9	Bacterial sepsis of newborn, unspecified	7	2.6%
6		I10 Essential (primary) hypertension	7	2.6%
7	A09	Diarrhea and gastroenteritis of presumed infectious origin	6	2.3%
8	A16.2	Tuberculosis of lung, without mention of bacteriological or histological confirmation	5	1.9%
9	E86	Volume depletion	5	1.9%
10	P07.3	Other preterm infants	4	1.5%

There were a total of 268 deaths in the year 2017, pneumonia unspecified recorded the highest number of mortalities in the County with 17 deaths translating to 6.3% of all mortalities while other preterm infants (P07.3) which contributed to 1.5%.

3.11 Quarterly Admission Trend 2017

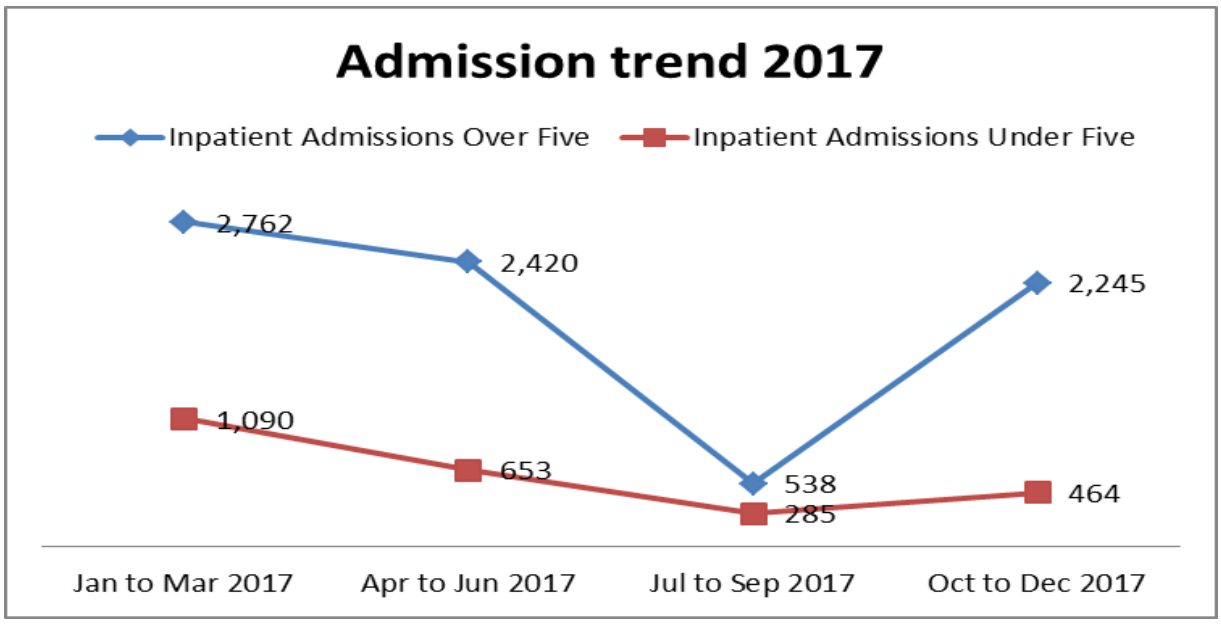


Figure 11 Admission Trend 2017

There was a general drop of admission cases in the third quarter of 2017 for both Under 5 and Over 5 years, the drop is explained by the fact that the inpatient departments in the hospitals partially closed during the industrial strike

3.12 Trend of hospital admission

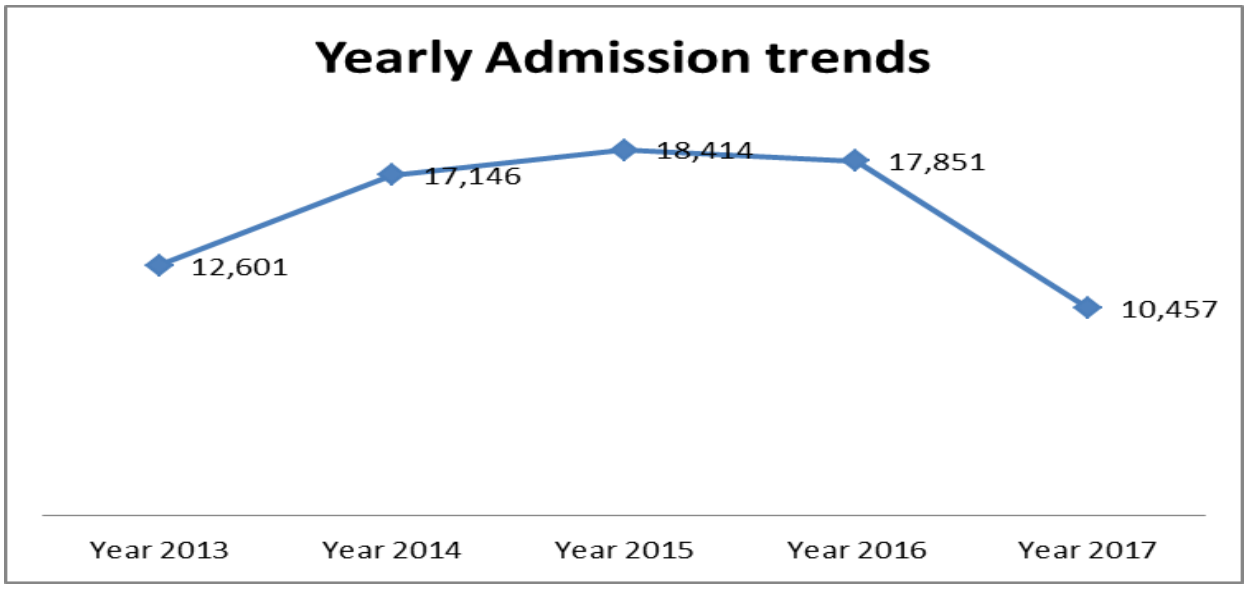


Figure 12 Trend of hospital admissions 2013-2017

There was a grandual increase in the number of hospital admissions from 2013 through to 2015, a slight decrease in 2016 then the trend plumped in 2017 due to the industrial strike that lasted for 5 months.

4.0 REPRODUCTIVE HEALTH

4.1 Reporting Rates for MOH 711

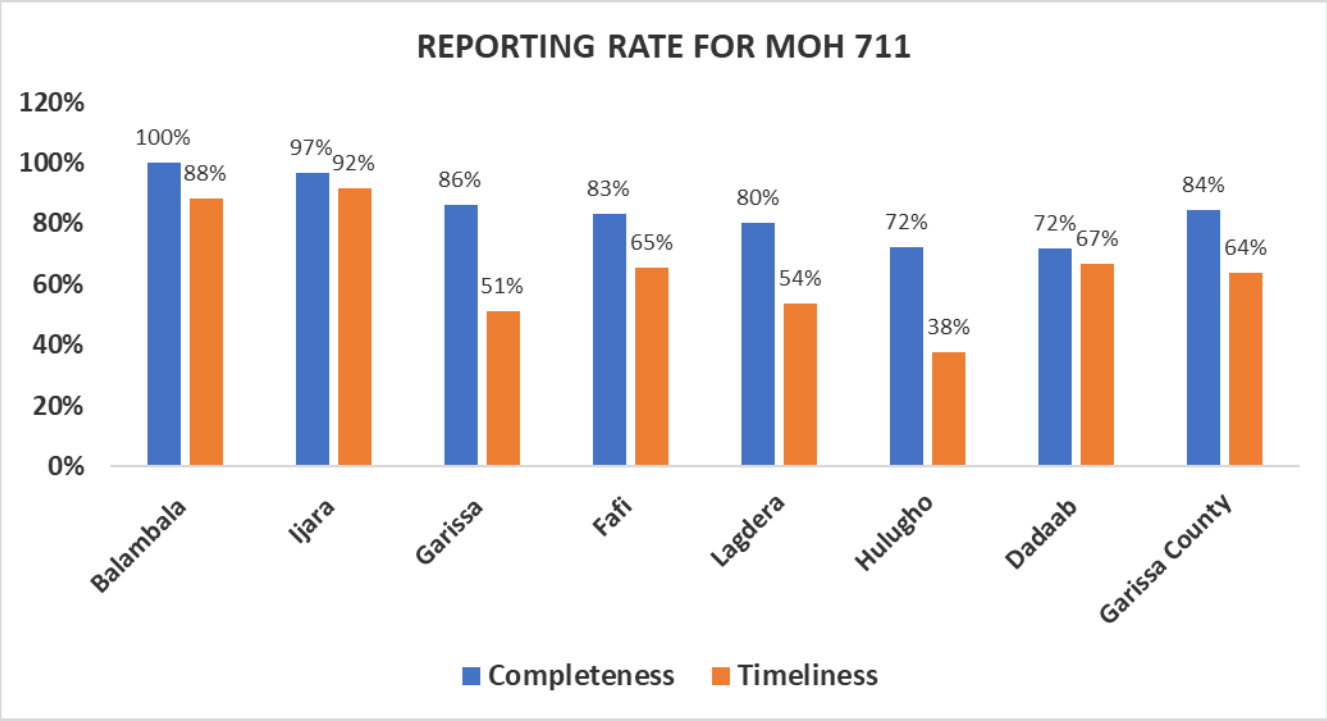


Figure 13 Reporting rates

The chart above shows the report completeness and timeliness for the period under review. Report Completeness and Timeliness reduced from 92% & 72 % in 2016 to 84% & 64% respectively in 2017. Balambala Sub County had the highest completeness rate at 100% while Ijara sub County had the highest timeliness rate at 92%. Hulugho Sub County had the lowest completeness and timeliness rate at 72% and 38% respectively.

4.2 Family Planning Services

In order to achieve Vision 2030, population growth rate need to be controlled. To attain a balance between resources and population, Kenya population policy promote family planning as an entitlement that is based on informed and voluntary choice. Couples are motivated to adopt a family planning method which when offered improved access to and quality of reproductive health services.

According to Kenya Demographic Health Survey (KDHS) 2008/2009, contraceptive use was at 4% of women of reproductive age and fertility rate of 5.9 children per woman. Compared to other counties, Garissa had the lowest contraceptive use at 3.4% and highest fertility rate at 6.4%. The eligible population for Women of Childbearing age was 161837.

4.2.1 Family Planning coverage per Sub-County.

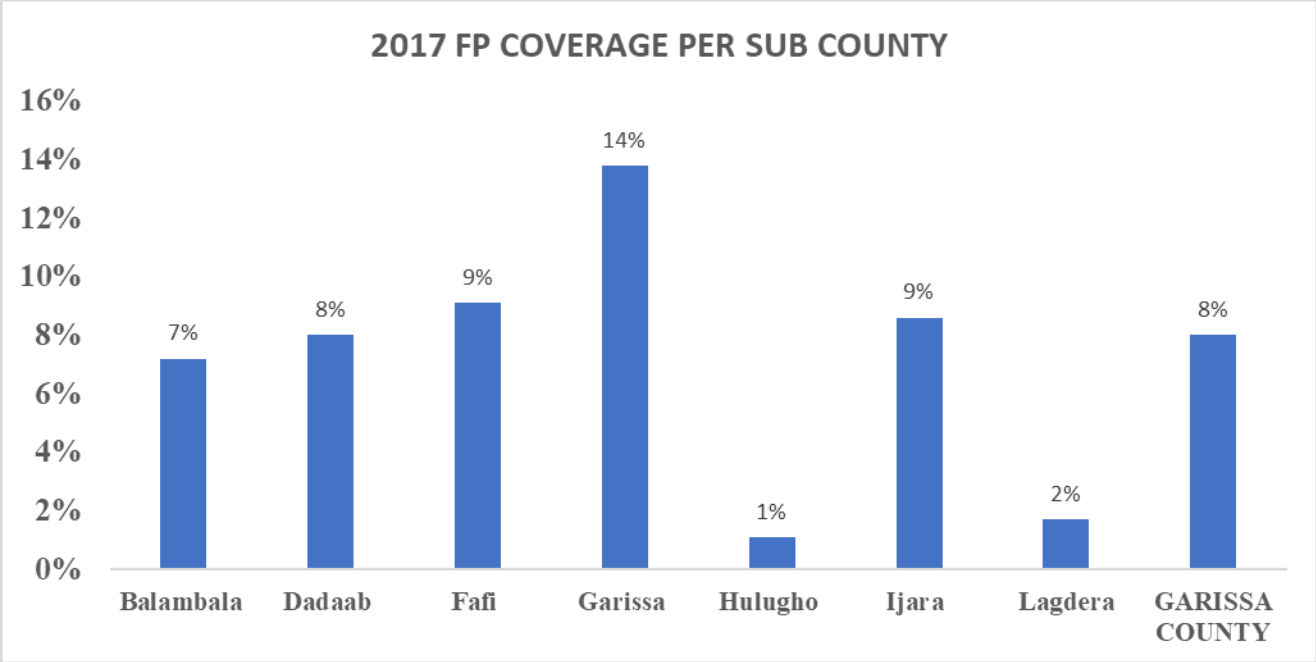


Figure 14 Family Planning coverage per Sub County 2017

FP coverage rate dropped marginally in 2017 to 8% down from 10% in 2016. Garissa Sub County had the highest FP coverage at 14% while Hulugho had the least at 1%. This is due to the fact that Garissa Sub County is a Cosmopolitan town and the population may be more knowledge on family planning coupled with good access to services.

4.2.2 FP coverage trend 2013-2017

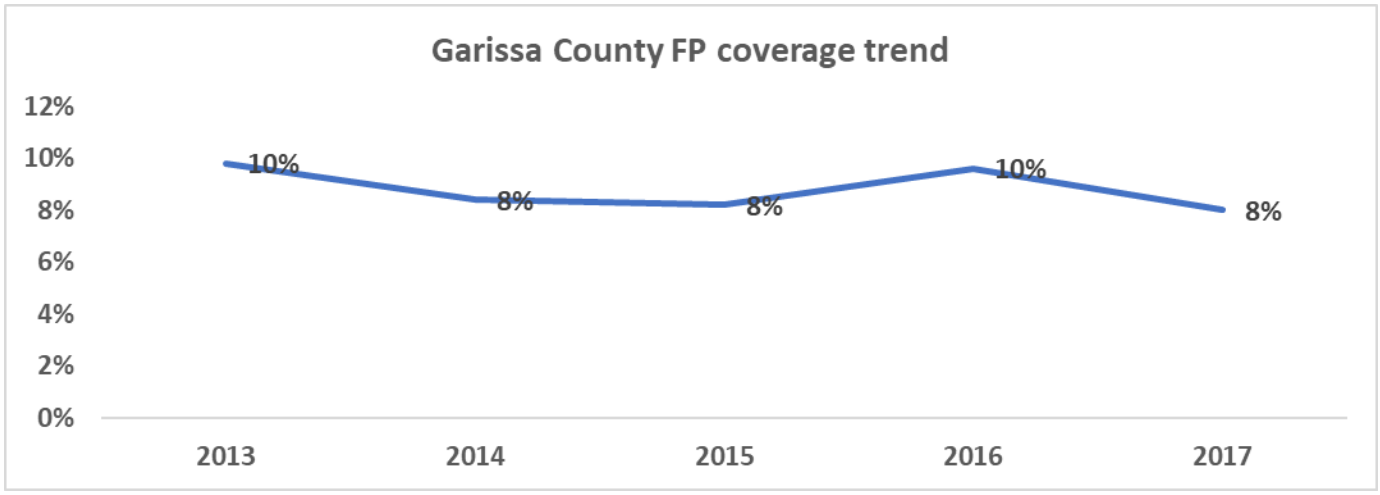


Figure 15 FP coverage trend 2013-2017

2013 and 2016 had the highest FP coverage.

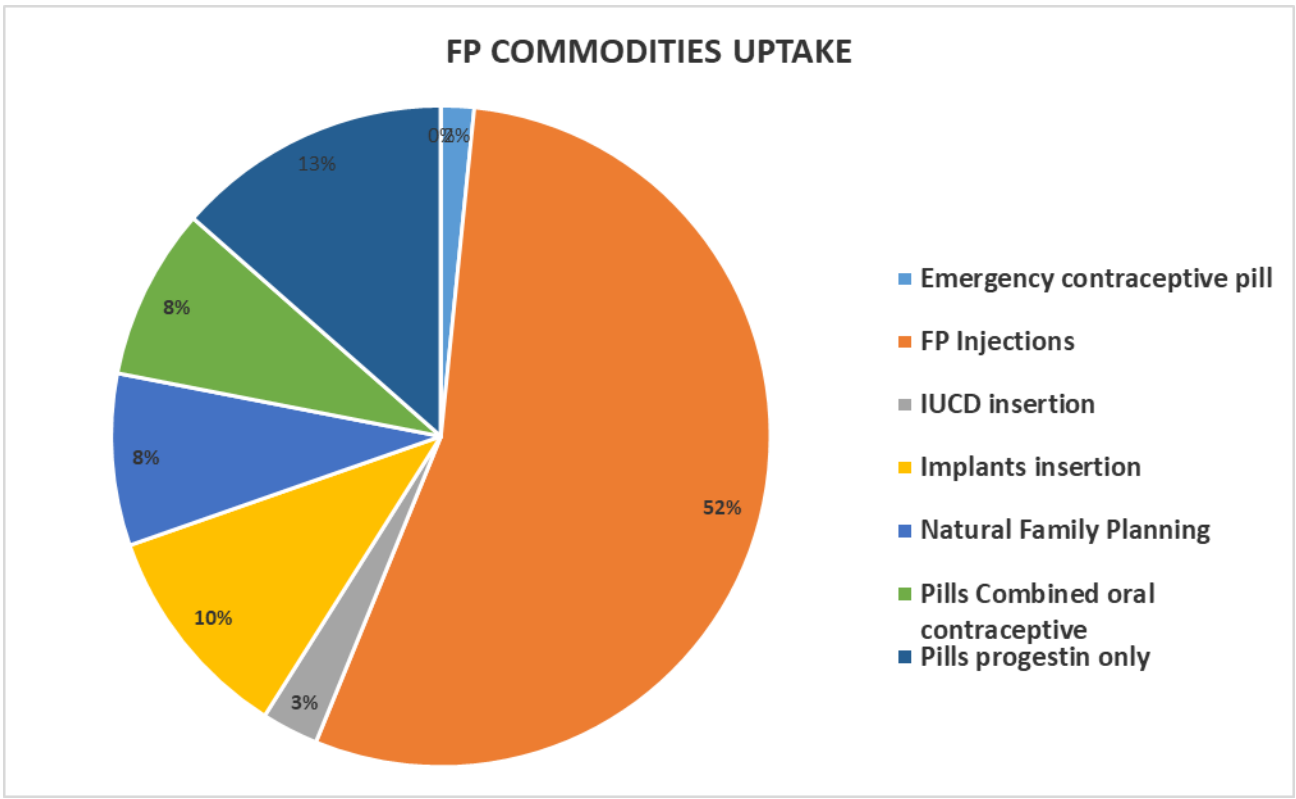


Figure 16 Figure 15 The chart below shows the preferred FP method at the County.

The most preferred FP method was Depo Provera (FP Injections) at 52%, followed by Pills (Progestin) at 13%. Implants Insertion increased to 10% . Vasectomy and Sterilization had no clients and thus were not factored in.

4.3 Ante-Natal Services

World Health Organization (WHO) recommends that every pregnant woman should receive a minimum of four ANC visits in low-risk pregnancies, also known as focused ANC, i.e. Care which is provided to pregnant women by skilled health personnel which emphasizes on the woman's overall health, her preparation of childbirth, readiness for complications that may occur in pregnancy, labour, delivery and postpartum.

The expected number of pregnant mothers in Garissa County was 25524.

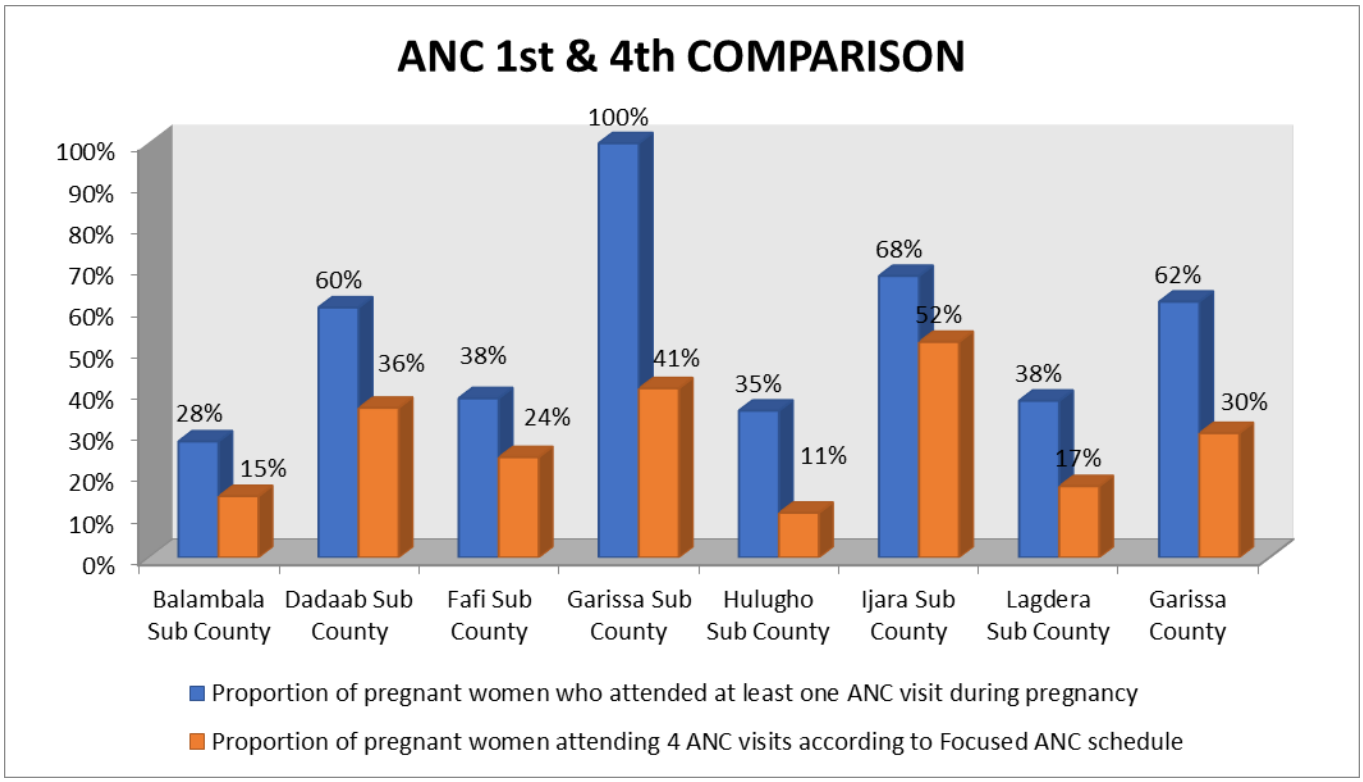


Figure 17 Comparison 1st and 4th ANC for Garissa County

Garissa County witnessed a reduction in coverage for both 1st and 4th ANC from 68% in 2016 to 62% in 2017 for 1st ANC and from 35% in 2016 to 30% in 2017. This can be attributed to the industrial strike which lasted for almost 5 months. This shows that more women are attending 1st ANC and do not visit for all the FANC recommended visits.

Garissa Sub County had the highest 1st ANC coverage at 100% while Balambala had the lowest at 28%. Ijara Sub County had the highest 4th ANC coverage at 52% while Hulugho had the lowest at 11%.

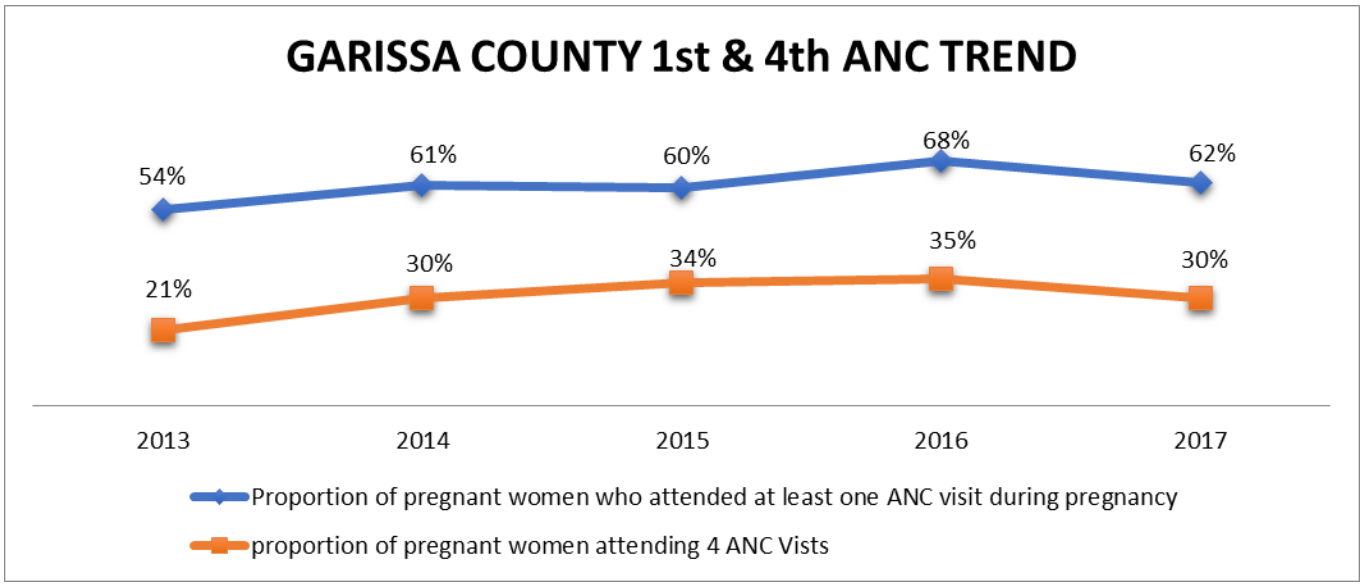


Figure 18 1st and 4th ANC coverage trend for the last 5 years

The year 2016 had the highest 1st ANC & 4th ANC coverage at 68% and 35% respectively compared to the other years under review.

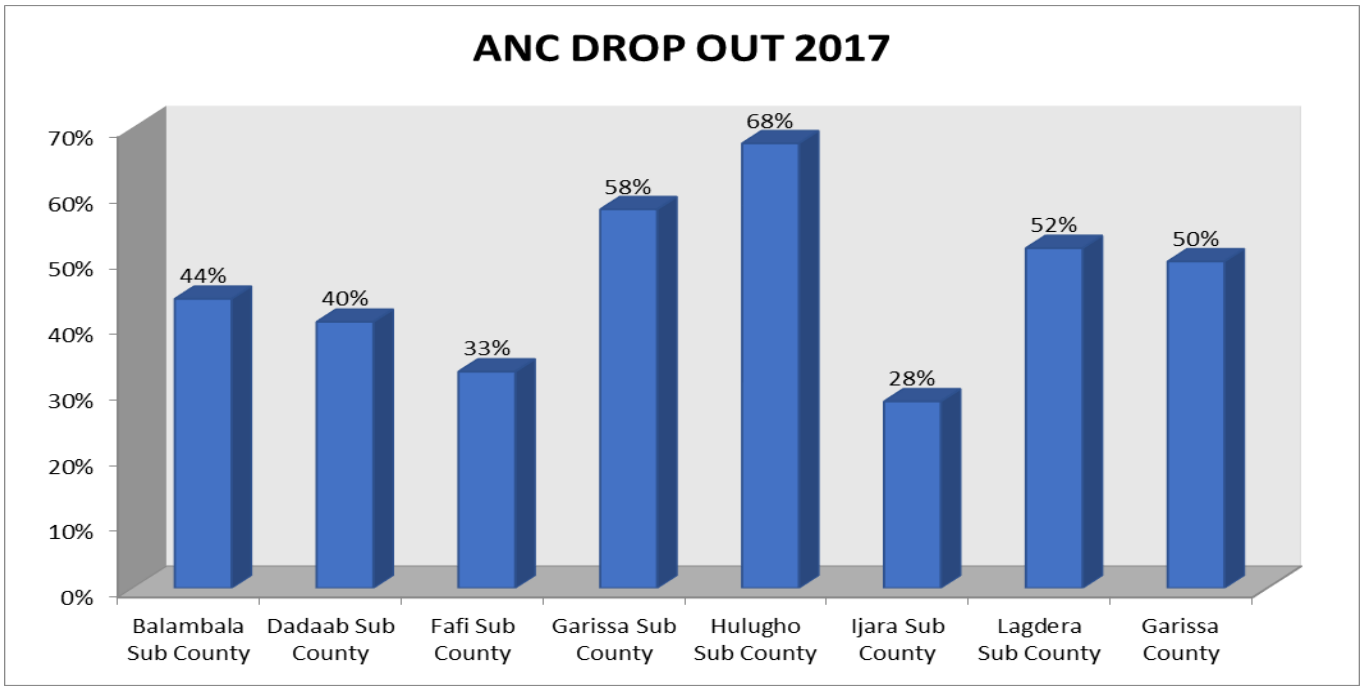


Figure 19 ANC Drop Out 2017

4.3.1 Iron and Folic Acid (IFA) supplementation

Iron and Folic Acid (IFA) supplementation for pregnant women is one of the interventions that has been recommended by WHO and implemented by the MOH to reduce anaemia levels. According to WHO, daily iron and folic acid supplementation is recommended as part of the ante natal care to reduce the risk of low birth weight, maternal anaemia and iron deficiency. WHO recommends a daily protocol of 60mg iron supplementation for treatment and prevention in pregnant women and 400µg of folic acid supplementation before conception and within 28 days after conception. Folic acid significantly reduces the incidence of neural tube defects when taken before conception and within 28 days after conception.

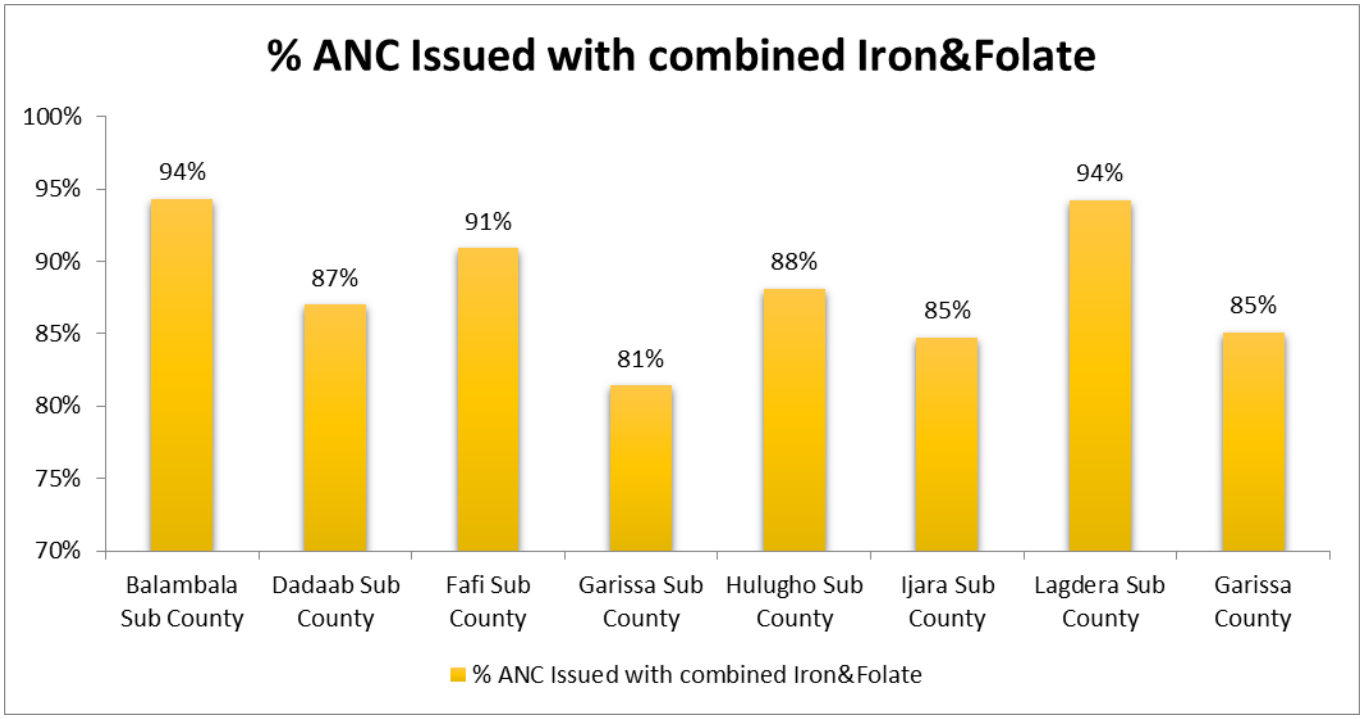


Figure 20 Proportion of women issued with Combined Iron and Foliate Supplementation per Sub County

85% of pregnant women who attended the ANC clinic received Iron Folate Supplementation.

4.4 Maternity Safe Deliveries

Skilled delivery is one of the proven strategies within the safe motherhood concept in reducing maternal death and therefore seeking client perspective is vital as their views will go a long way in providing appropriate maternal services.

Utilization of the skilled delivery services reduces significantly the effects related to complications that may arise during child birth. Many of these obstetric complications are preventable if diagnosed early and a proper management constituted promptly. In practical terms, this is only possible if the health provider has the proper skills backed by the right medical supplies and equipment's.

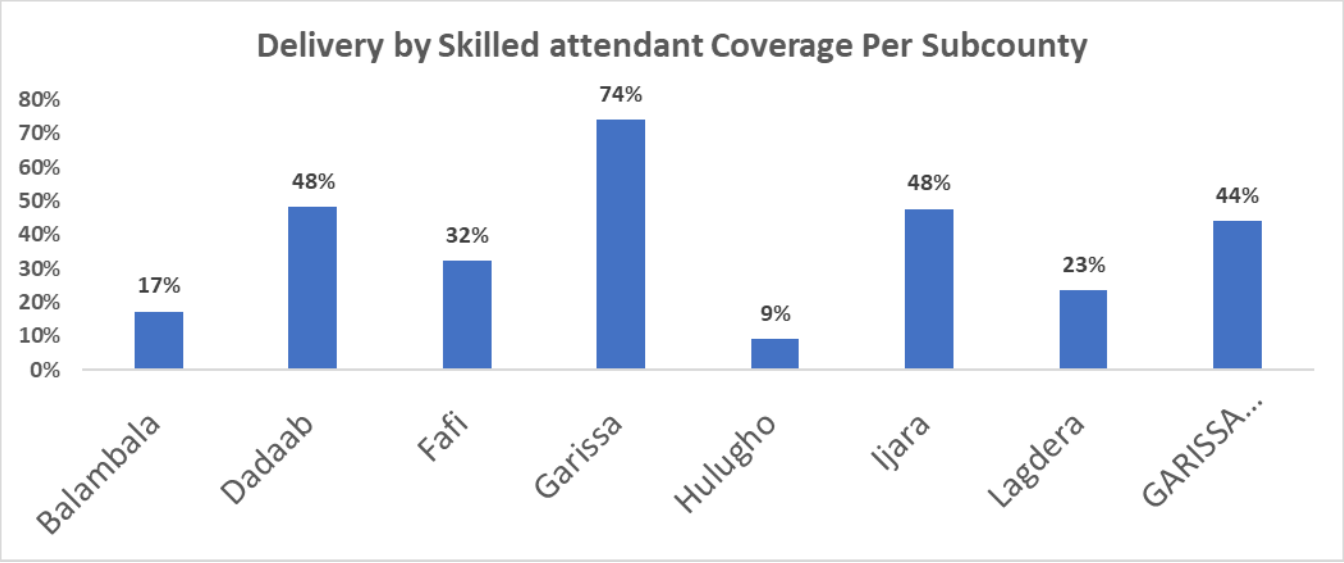


Figure 21 Deliveries per Sub County 2017

Despite Maternity services being free, the County had a reduction of Skilled Deliveries coverage from 46% in 2016 to 44% in 2017. Garissa Sub County had the highest coverage at 74% while Hulugho had the lowest coverage at 9%.

However, the low deliveries coverage in most of the Sub Counties can be attributed to:

1. Nurses Strike

2. Quality of services offered
3. Staff attitudes
4. Cultural beliefs and practices

4.4.1 Deliveries Trend

For the last 4 years, Department of Health in Garissa County in collaboration with other partners has put in place several mechanisms to improve maternal health. New maternity rooms have been constructed and existing ones renovated, the delivery kits and drug supply have been significantly streamlined. Though staff shortage is still an issue, many partners tried to employ staff, mostly nurses, specifically for the periphery health facilities in order to improve services.

Additionally, many trainings were conducted on areas related to maternal health notably; Emergency Obstetric Care (EmOC), Focused Antenatal Care (FANC), Malaria in Pregnancy (MIP), Prevention of Maternal to Child Transmission (PMTCT) among other trainings.

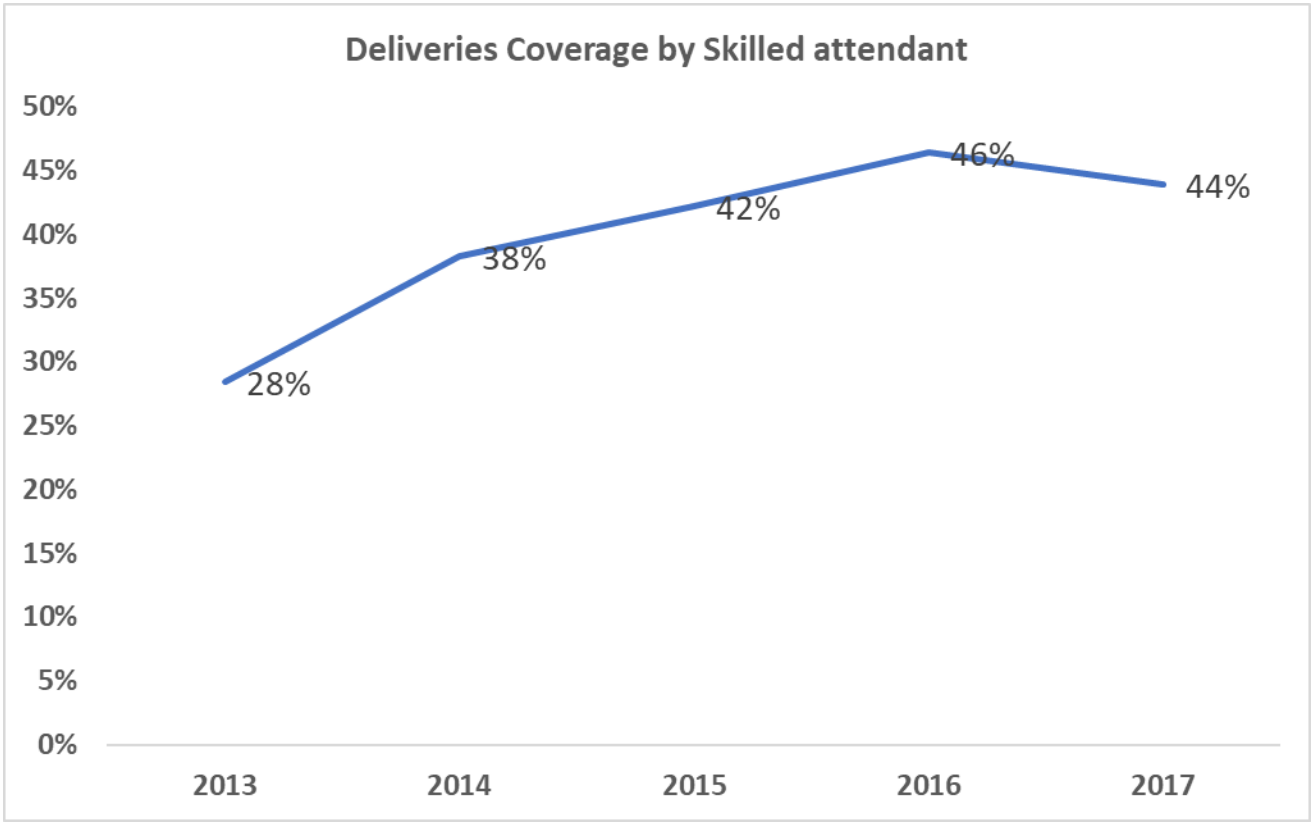


Figure 22 Deliveries trend from 2013 to 2017

There was an upward trend in deliveries from 28% 2013 to 46% in 2016. However, the year 2017 there was a slight decline 44%.

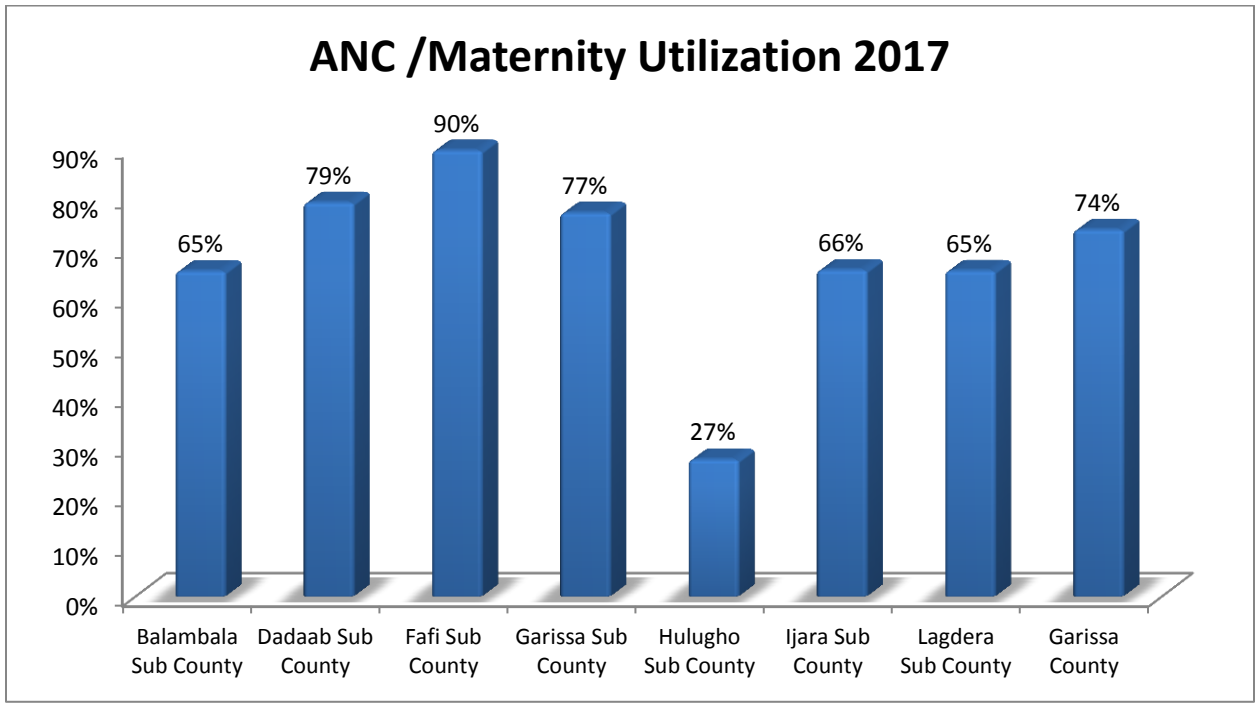


Figure 23 ANC/Maternity utilization 2017

Hypothetically, 74% of pregnant women who attended 1st ANC delivered at health facilities with Fafi Sub County leading at 90%, Hulugho Sub County had the least number of deliveries at 27%.

Table 16 Trend of CS rate 2013 - 2017

Organization unit	Y2013	Y2014	Y2015	Y2016	Y2017
Balambala Sub County	(0)0%	0%	0%	(1)0%	0%
Dadaab Sub County	(92)10%	(138)12%	(145)10%	(116)7%	(81)5%
Fafi Sub County	(0)0%	0%	0%	0%	0%
Garissa Sub County	(640)15%	(906)16%	(1003)17%	(1046)18%	(957)16%
Hulugho Sub County	0%	0%	0%	0%	0%
Ijara Sub County	(21)3%	(15)2%	(28)3%	(14)1%	(7)1%
Lagdera Sub County	0%	0%	0%	(1)0%	(2)0%
Garissa County	**(753)10%**	**(1059)11%**	**(1176)11%**	**(1178)10%**	**(1047)9%**

CS rate was at 9% in 2017 which is within the WHO recommended rate of less than 15%, however, Garissa Sub County had her rate at 16% which could be attributed to many referrals for sub counties and availability of specialized services.

Table 17 Trend of Still birth rate 2013 -2017

Still births rate/1,000 live births					
Organization unit	**Y2013**	**Y2014**	**Y2015**	**Y2016**	**Y2017**
Garissa County	**21**	**27**	**29**	**24**	**19**
Balambala Sub County	27	35	18	6	6
Dadaab Sub County	55	21	35	16	12
Fafi Sub County	0	7	2	12	4
Garissa Sub County	15	32	36	31	25
Hulugho Sub County	7	15	19	0	10
Ijara Sub County	46	24	32	33	24
Lagdera Sub County	7	18	6	23	26

This indicator measures the quality of care provided during pregnancy and intrapartum period. In comparison with the previous years, there was reduction of still birth rate from 21 per 1000 live births in year 2013 to 19 per 1000 live births in year 2017.

Table 18 Trend of Proportion of fresh still births vs total still births

Proportion of fresh still births vs total still births					
Organization unit	**Y2013**	**Y2014**	**Y2015**	**Y2016**	**Y2017**
Garissa County	**59%**	**57%**	**52%**	**51%**	**53%**
Balambala Sub County	100%	93%	70%	33%	100%
Dadaab Sub County	68%	74%	68%	64%	65%
Fafi Sub County	#DIV/0!	50%	100%	54%	33%
Garissa Sub County	47%	50%	52%	53%	50%
Hulugho Sub County	0%	80%	80%	#DIV/0!	100%
Ijara Sub County	68%	65%	17%	31%	55%
Lagdera Sub County	33%	50%	17%	54%	53%

In year 2017, 53% of total still births were fresh compared to 51% in year 2016; this correlates weak health system in term of access, early detection and management of labour.

Table 19 Trend of Facility based MMR/100,000 Live births

Facility based MMR/100,000 live births					
organization unit	Y2013	Y2014	Y2015	Y2016	Y2017
Garissa County	216	304	225	168	128
Balambala Sub County	1081	0	0	0	0
Dadaab Sub County	354	364	220	131	0
Fafi Sub County	225	493	0	0	0
Garissa Sub County	164	367	305	265	224
Hulugho Sub County	658	588	0	0	0
Ijara Sub County	0	0	111	0	110
Lagdera Sub County	249	0	195	174	0

Generally there was gradual decline of facility based MMR from 304 per 100,000 live births in year 2014 to 128 per 100,000 live births in 2017.

4.5 Post Natal Attendances

Postpartum period is important for women since during this period they may develop serious, life threatening complications. The first six weeks after birth is critical to the health and survival of a mother and her newborn. Lack of care in this time period may result in death or disability as well as missed opportunities to promote healthy behaviour, affecting women, newborns, and children.

Additionally, utilization of PNC within 48 hours of delivery is known to improve health outcomes for both the mother and the neonate by reducing morbidity and mortality.

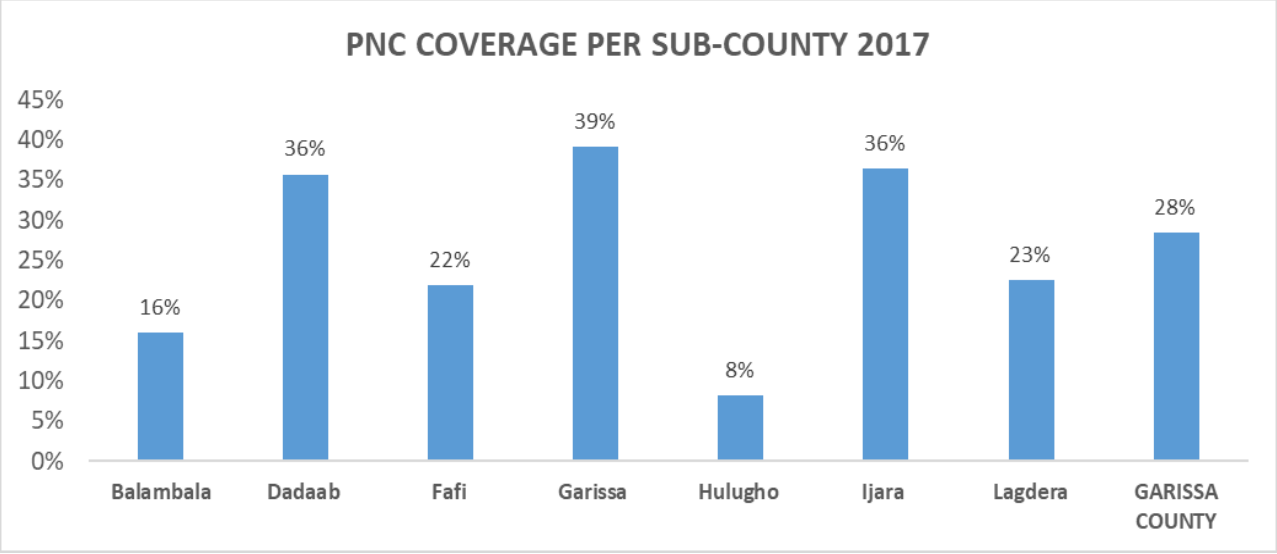


Figure 24 Post Natal coverage per Sub County

The postnatal coverage reduced significantly in 2017 to (28%) down from 37% in 2016. Garissa, Ijara and Dadaab Sub Counties managed to get over 30% PNC coverage, Hulugho had the lowest at 8%.

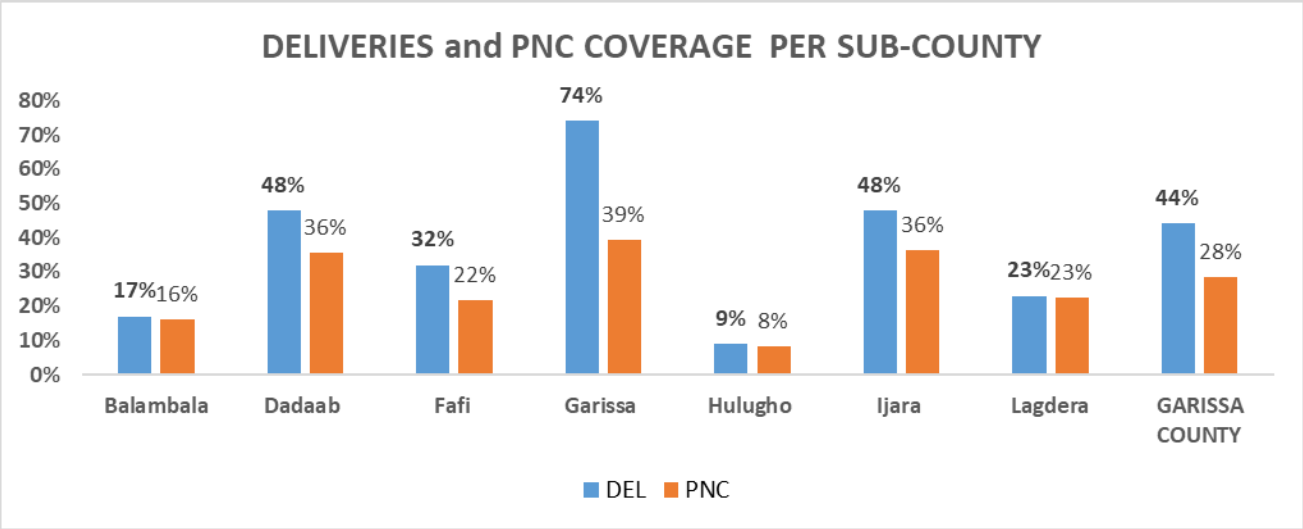


Figure 25 Deliveries and PNC coverage per Sub County

A comparison between the Skilled Deliveries and Post Natal attendances showed a significant decrease in the women attending Post-natal services.

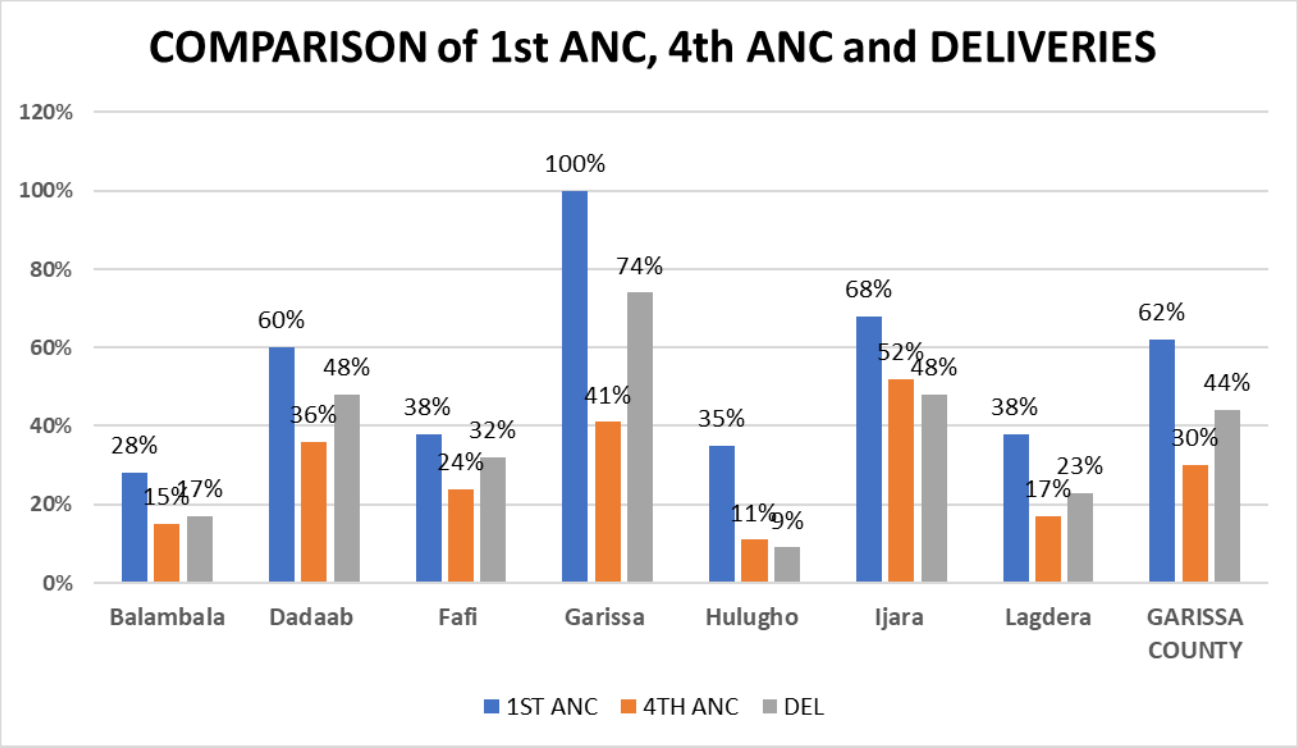


Figure 26 Comparison of 1st, 4th ANC and Deliveries 2017

Skilled Birth is important for the early identification of signs of complications in order to institute timely management, including referrals to higher levels of care where necessary. However, despite these essential services being available in health facilities and being offered free, utilization of ANC, SBA, and PNC remain limited. For instance, less than 30% of women are said to have access and use PNC services.

In 2017, only 30% of women attended the WHO-recommended focused ANC visits, 44% were assisted by a skilled birth attendant to give birth, and only 28% attended PNC visits.

4.6 Maternal Complications

Poor utilization of maternal health services is frequently associated with maternal deaths and morbidity and yet, most maternal deaths could be prevented if all women successfully utilized maternal health-care services.

Table 20 Maternal complications

CONDITION	OUTCOME	Balambala	Dadaab	Fafi	Garissa	Hulugho	Ijara	Lagdera	GARISSA COUNTY
Ante Partum Haemorrhage	ALIVE	0	8	7	52	1	10	2	80
	DEAD	0	0	0	1	0	0	0	1
Eclampsia	ALIVE	0	11	2	27	1	7	1	49
	DEAD	0	0	0	4	0	0	0	4
Obstructed Labour	ALIVE	2	24	3	60	0	13	3	105
	DEAD	0	0	0	0	0	0	0	0
Post-Partum Haemorrhage	ALIVE	1	22	17	155	0	58	6	259
	DEAD	0	0	0	3	0	0	0	3
Ruptured Uterus	ALIVE	0	0	1	6	0	1	0	8
	DEAD	0	0	0	0	0	0	0	0
Sepsis	ALIVE	3	9	5	2	2	6	0	27
	DEAD	0	0	0	0	0	0	0	0

Eclampsia and PPH were the leading causes of maternal mortality at 50% and 37% respectively, APH contributed 13%.

4.7 Maternal and Neonatal deaths

Literature shows that utilization of maternal and neonatal health (MNH) services can be successfully traced through key services such as attendance of antenatal care (ANC), birth by a skilled health worker, and postnatal care (PNC), all of which are evidently associated with reduction in mortality and morbidity for mothers and their neonates.

Table 21 Maternal and neonatal deaths for 2017

Sub County	Maternal Deaths	Maternal Deaths Audited	Neonatal deaths	Fresh Still Birth	Macerated still Birth
Balambala Sub County	0	0	0	3	0
Dadaab Sub County	0	0	1	11	6
Fafi Sub County	1	0	1	2	4
Garissa Sub County	17	4	75	72	72
Hulugho Sub County	0	0	0	2	0
Ijara Sub County	1	0	4	12	10
Lagdera Sub County	0	0	1	10	9
GARISSA SUB COUNTY	**19**	**4**	**82**	**112**	**101**

There was a reduction of maternal deaths from 28 in 2016 to 19 in 2017. However only 21% of the deaths were audited and uploaded into the DHIS compared to 54% in 2016. Neonatal deaths increased from 74 in 2016 to 82 in 2017. Similarly, FSB increased from 104 in 2017 to 112 in 2017.

5.0 CHILD HEALTH

5.1 IMMUNIZATION

Routine child immunization in Kenya is based on defined schedule from birth to one year.

The analysis is based on data received at sub County level through the immunization summary form-MOH 710. There are various diseases which are targeted by KEPI, namely tuberculosis, polio, measles, tetanus, diphtheria, whooping cough, hepatitis B and HIB meningitis and pneumonia. Also included in this form is Vitamin A supplementation to children between 6 and 59 months, and lactating mothers.

In Garissa County, 87 health facilities offer immunization services which account for 55% of all health facilities. It is however noteworthy, that 98% of government facilities offer immunization services. Immunization program targets children Under 1 year, however measles second dose was introduced in 2013 to include children up to two years. In year 2017, the county targeted 24,065 children Under one year.

5.1.1 Immunization Reporting Rates per Sub County - 2017

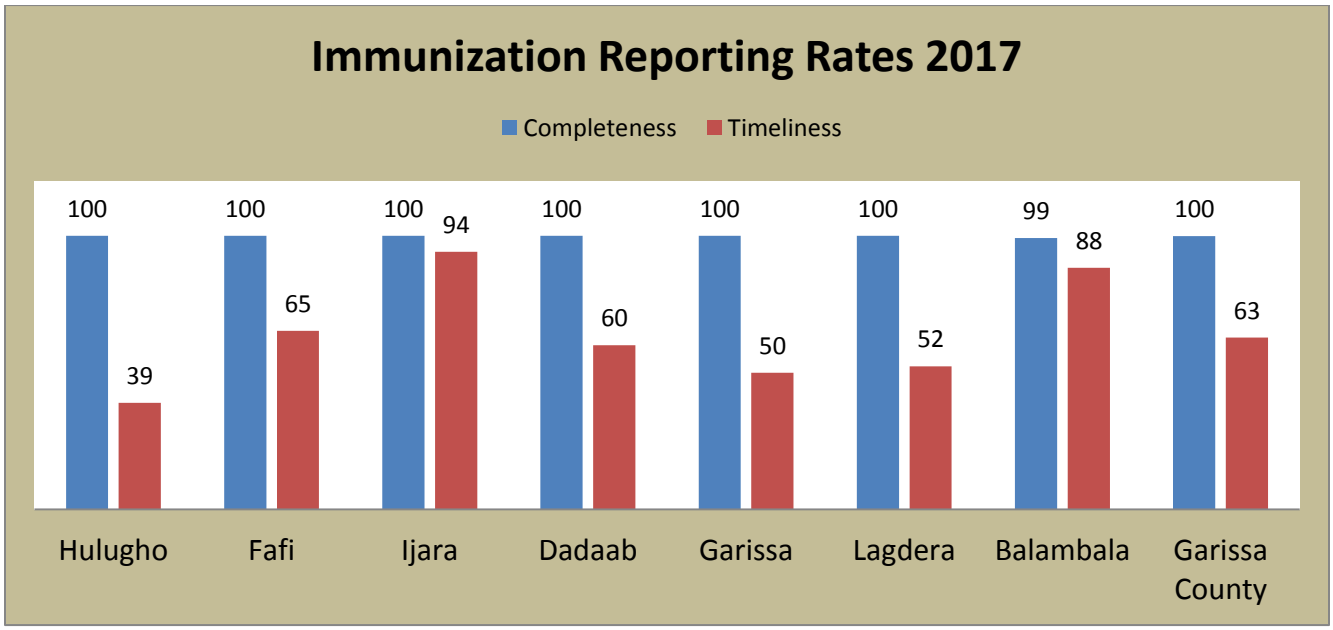


Figure 27 Immunization Reporting Rates 2017

The County reporting rate was 100% completeness and with 63% timeliness, the late reporting can be attributed to staff turnover and industrial strike.

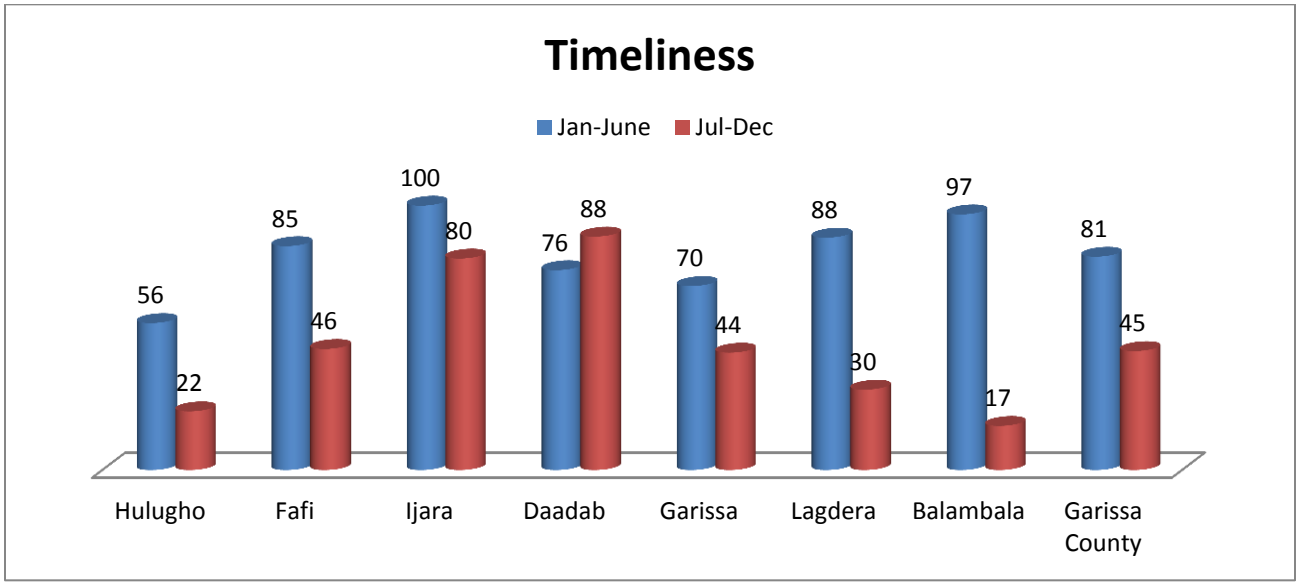


Figure 28 Bi annual timeliness 2017

The bi annual reporting rates (Timeliness) for 2017 showed a decline from 81% in January to June 2017 to 45% from July-Dec 2017. All sub counties reduced in the period under review except Daadab Sub County which increased from 76% to 88%

5.1.2 EPI Percentage Coverage

Table 22 EPI Coverage 2017

EPI COVERAGE PER ANTGEN 2017					
Antigen	Targets	Achievement (Absolute Number)	coverage	Unvaccinated (Absolute number)	% Unvaccinated
BCG	24,668	16,410	67%	8,258	33%
OPV Birth	24,668	11,696	47%	12,972	53%
OPV1	24,065	17,459	73%	6,606	27%
OPV2	24,065	15,118	63%	8,947	37%
OPV3	24,065	14,328	60%	9,737	40%
Pneumococcal 1	24,065	17,515	73%	6,550	27%
Pneumococal 3	24,065	14,332	60%	9,733	40%
Pneumococal 2	24,065	15,066	63%	8,999	37%
Penta 1	24,065	17,566	73%	6,499	27%
Penta 2	24,065	15,007	62%	9,058	38%
Penta 3	24,065	14,297	59%	9,768	41%
Rotavirus 1	24,065	16,816	70%	7,249	30%
Rotavirus 2	24,065	14,328	60%	9,737	40%
IPV	24,065	13,347	55%	10,718	45%
Measles-Rubella 1	24,065	15,055	63%	9,010	37%
Measles-Rubella 2	23,347	4,745	20%	18,602	80%
Fully Immunized Children(FIC) < 1 year	24,065	13,338	55%	10,727	45%

Out of 24,065 under 1 year children eligible for immunization in 2017, only 13,338 (55%) children were fully immunized while 10,727 (45%) were not reached with both routine and outreach strategies

5.1.3 Percentage Trend of EPI antigens from 2013-2017

Table 23 Trend of EPI antigens from 2013 - 2017

% EPI TREND PER ANTIGEN					
Data / Period	2013	2014	2015	2016	2017
BCG Coverage	63%	68%	60%	69%	65%
OPV birth dose coverage	45%	51%	50%	55%	49%
OPV 1 Coverage	72%	81%	73%	80%	72%
OPV 2 Coverage	59%	69%	65%	71%	62%
OPV 3 Coverage	59%	70%	66%	71%	59%
Pneumococal1 coverage	72%	81%	74%	80%	72%
Pneumococal2 coverage	59%	69%	66%	71%	62%
Pneumococal3 coverage	59%	71%	67%	71%	59%
DPT/Hep+HiB1 Coverage	72%	81%	74%	81%	72%
DPT/Hep+HiB2 Coverage	59%	69%	65%	72%	62%
DPT/Hep+HiB3 Coverage	60%	71%	67%	71%	59%
IPV	0%	0%	0%	55%	54%
Measles and Rubella	58%	72%	68%	70%	60%
Fully immunized Children	52%	63%	65%	68%	55%

There was a gradual increase in FIC from 2013 – 2016 but the trend declined in 2017 due to explainable circumstances.

5.1.4 Trend of FIC 2013-2017

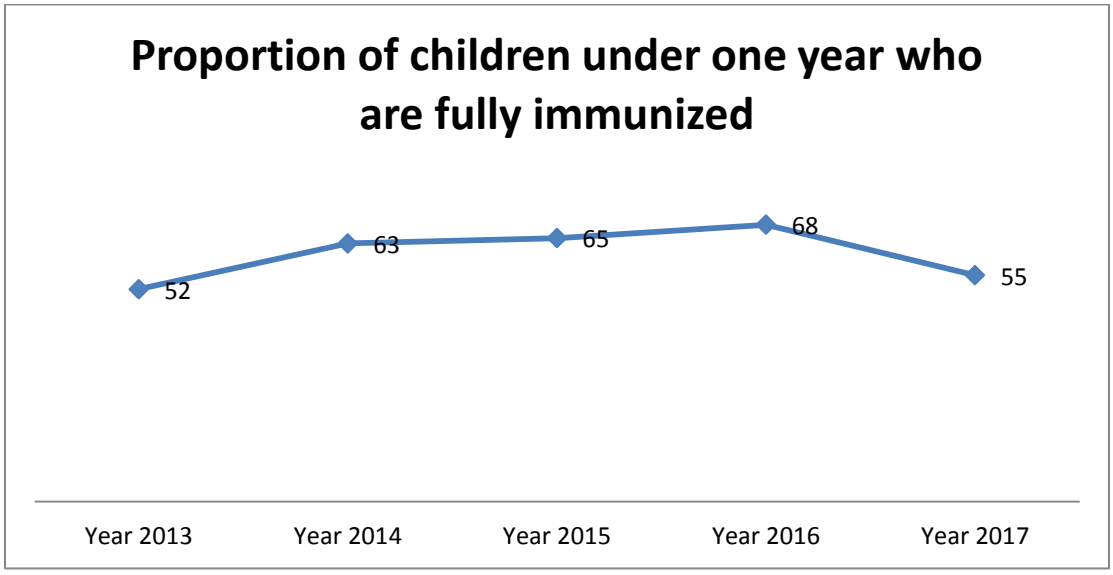


Figure 29 Trend of FIC 2013-2017

The proportion of children under 1 year who are fully immunized drastically dropped 13% in 2017 from 68% in 2016 to 55%.

5.1.5 FIC comparison 2016/2017

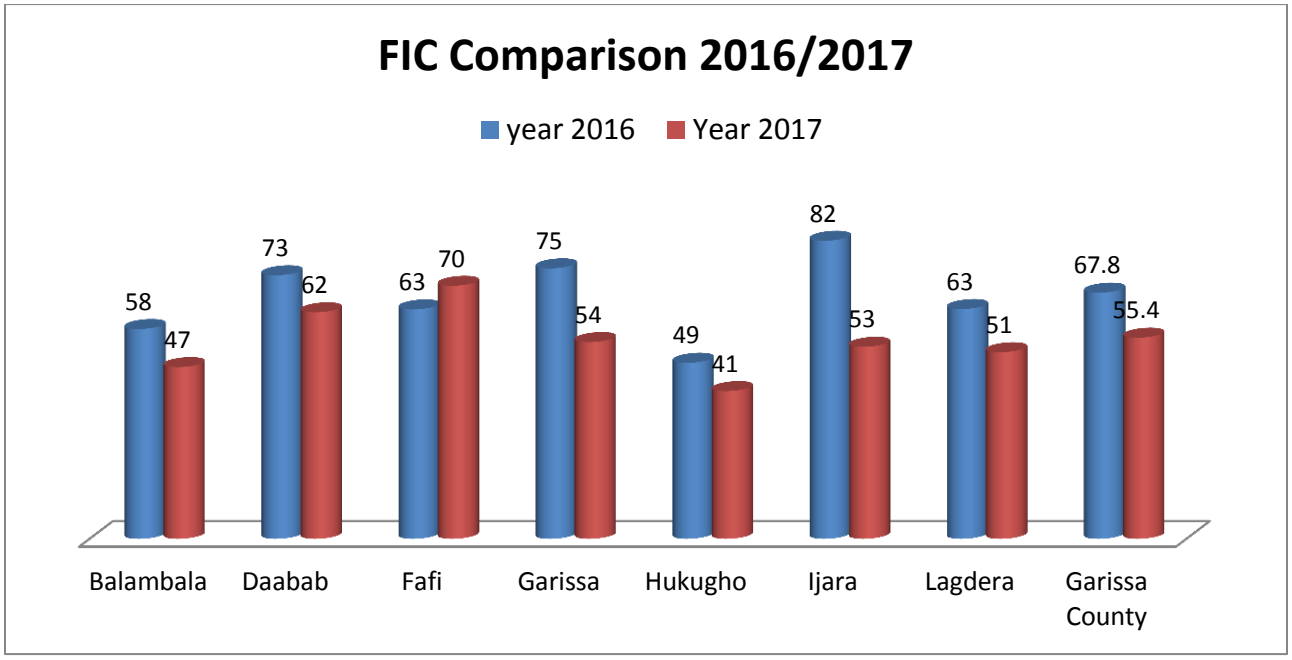


Figure 30 FIC comparison 2016/2017

There was a general drop of children Under 1 fully immunized in all Sub Counties from the year 2016 to 2017 except Fafi Sub County which have increased from 63% to 70%. The County FIC dropped from 67.8% in the year 2016 to 55.4% in the year 2017.

5.1.6 EPI Coverage for selected antigens 2015-2017

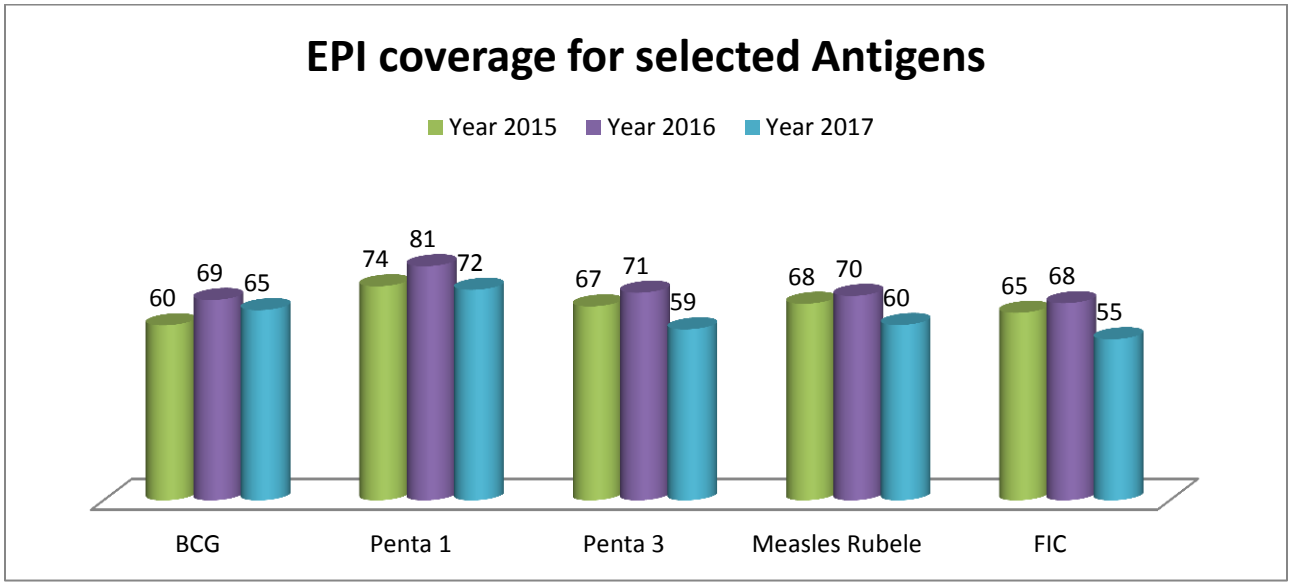


Figure 31 EPI coverage for selected antigens 2015- 2017

Among the 5 selected indicators, there was a significant decrease in coverage in all the antigen for the year 2017. The year 2016 recorded the highest coverage among the three years of comparison.

5.1.7 Immunization access and utilization categorization

Sub County	Penta 1	Penta 3	Measles Rubella	Penta 3 dropout rate	Measles-dropout rate	Access	Utilization	Category
Balambala Sub County	67%	51%	50%	24.2%	-3.2%	poor	Good	3
Dadaab Sub County	83%	61%	65%	26.3%	-12.4%	Good	poor	4
Fafi Sub County	73%	69%	70%	4.9%	-4%	poor	Good	3
Garissa Sub County	83%	66%	65%	20.4%	-0.84%	Good	Good	1
Hulugho Sub County	55%	42%	43%	22.9%	-3.8%	poor	Good	3
Ijara Sub County	60%	55%	54%	9.1%	1.4%	poor	Good	3
Lagdera Sub County	60%	46%	55%	22.9%	-24.6%	poor	poor	4
Garissa County	72%	59%	60%	19%	-5%	poor	Good	3

PLEASE NOTE:

ACCESSIBILITY = % COVERAGE OF PENTA 1

UTILISATION=% DROP OUT RATE OF PENTA 1-MEASLES

Category 1 (no problem) = drop rates for penta 1 to measles are low = good utilization (<10%)

=penta 1 coverage is high = good access (>80%)

Category 2 =drop out for penta 1 to measles are high = poor utilization (>10%)

= penta 1coverage is high = good access (>80%)

Category 3 = dropout rates for penta 1 to measles are low = good utilization (<10%)

= penta 1coverage is low = poor access (<80%)

Category 4 = dropout rates for penta 1 to measles are high = poor utilization (>10%)

= penta 1 coverage is low = poor access (<80%)

Good Accessibility=Penta 1 coverage should be more than 80%

Good Utilization== dropout rate should be less than +10% and -10%.

- The County drop out for Penta 1 to Penta 3 was 19%, with Daadab Sub County recording the highest while Fafi Sub County had the least.
- The County drop out rate for Penta 1 to Measles was 5%, Lagdera Sub County recorded the highest drop out and Garissa Sub County had the least. **This means the County had good utilization**
- Good access to immunization services was observed in Daadab and Garissa Sub Counties who had their Penta 1 coverage more than 80% with both having 83%, however the County average was 72%
- Utilization was good in all Sub Counties with Penta 1 – Measles dropout of less than 10% except Daadab and Lagdera who had a dropout of more than +-10%
- Garissa Sub County was the only Sub County in Category 1 with both Good access and Utilization while Lagdera Sub County was in category 4 with Poor access and Poor utilization. The rest of the Sub Counties were in category 3 with no sub county in category 2

5.2 Tetanus Toxoid

Tetanus, also known as lockjaw, is caused by a bacillus Clostridium tetani that is present in the soil, in animal and human feces. After entering the body through a wound, the bacterium produces a neuro-toxin that causes spasms of all skeletal muscles making breathing and feeding difficult or impossible. Tetanus disease results in death if specialized care is not available. Neonatal tetanus affects newborn babies and results from contamination with tetanus spores that occurs when babies are delivered in unclean conditions. The incubation period is 3-28 days. Tetanus is the only vaccine-preventable disease that is not spread from person to person

Global situation: Tetanus contributes to neonatal and maternal mortality globally wherever maternal protection with tetanus toxoid is low and clean deliveries and clean umbilical cord care practices are not followed.

5.2.1 Number of pregnant women given tetanus toxoid

Table 24 Number of pregnant women given tetanus toxoid

Organiation unit / Data	Number of Pregnant women given Tetanus Toxoid (1st dose)	Percentage (%) 1st Tetanus Toxoid	Number of Pregnant women given Tetanus Toxoid (2+)	Tetanus Toxoid 2+ Pregnant Women Coverage
Balambala	478	18%	1018	36%
Dadaab	1041	33%	1806	58%
Fafi	799	20%	1378	33%
Garissa	1676	22%	3031	37%
Hulugho	306	15%	548	25%
Ijara	251	12%	525	27%
Lagdera	356	12%	723	23%
Garissa County	**4907**	**20%**	**9029**	**35%**

A total of 4907 mothers were given TT 1 dose which translates to 20% while the mothers given TT2+ were 9029 (35%).

5.3 Nutrition

The nutrition status among children under 5 years in Garissa County is key indicator of socio – economic and health status of a community. Currently the nutrition indicators of children that are routinely monitored through the health facilities are under weight (Weight for age), Vitamin A supplementation, stunting and breast feeding. Revised Child Health and Nutrition Information System (MOH 713) that caters for almost all nutrition indicators. Some indicators are reported in MOH 711 growth monitoring section. Malnourished children are supplemented with food at outpatient level (SFP and OTP) and inpatient level (therapeutic commodity).

5.3.1 Nutrition Reporting Rates

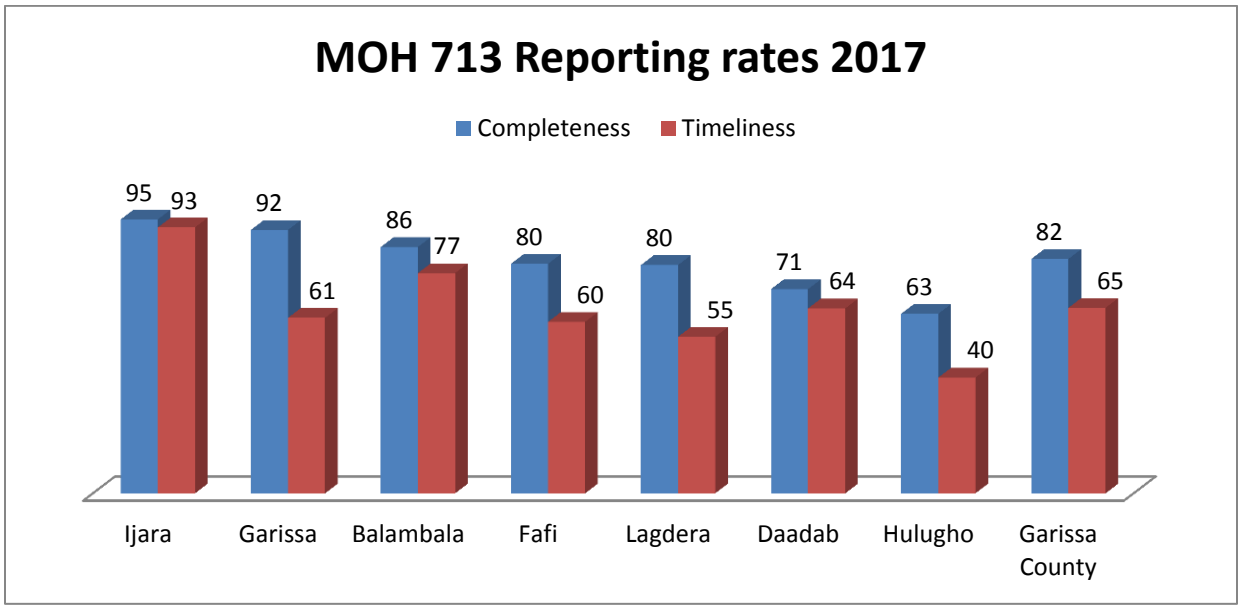


Figure 32 MOH 713 reporting rates 2017

The County Reporting Rates was 82% completeness and 65% timeliness for Nutrition indicators MOH 713 in the year 2017.

5.3.2 Child Health and Nutrition Information System

Table 25 Child health and nutrition information system

Data	Balambala	Daadab	Fafi	Garissa	Hulugho	Ijara	Lagdera	Garissa County
Normal Weight for Age 0-<6 months	2230	3402	3106	11814	233	2760	1563	**25108**
Normal Weight for Age 24-59 Months	3240	8425	7196	13126	599	3935	4781	**41302**
Normal Weight for Age 6-23 months	3103	5943	6273	12242	495	4458	3072	**35586**
Underweight 0-<6 months	56	78	89	154	12	65	51	**505**
Underweight 24-59 Months	502	247	771	626	346	448	725	**3665**
Underweight 6-23 months	375	207	722	654	250	541	388	**3137**
Severely underweight 0-<6 months	0	8	18	16	2	11	13	**68**
Severely underweight 24-59 months	176	22	112	175	35	30	174	**724**
Severely underweight 6-23 months	83	35	185	202	42	61	95	**703**
Stunting 0-<6 months	20	30	51	41	0	93	2	**237**
Stunting 24-59 Months	138	55	95	140	3	167	31	**629**
Stunting 6-23 months	65	88	78	159	2	242	28	**662**
Severely stunted for 0-<6 months	1	4	0	24	0	8	0	**37**
Severely stunted for 24-59 months	119	5	4	918	0	11	0	**1057**
Severely stunted for 6-23 months	11	1	19	48	0	98	0	**177**
Normal Height for Age 0-<6 months	2120	3373	2860	10578	146	2735	900	**22712**
Normal Height for Age 24-59 Months	4514	7632	7469	12864	874	3680	5495	**42528**
Normal Height for Age 6-23 months	3071	5568	6261	12242	605	4514	3363	**35624**

5.3.3 Growth monitoring coverage

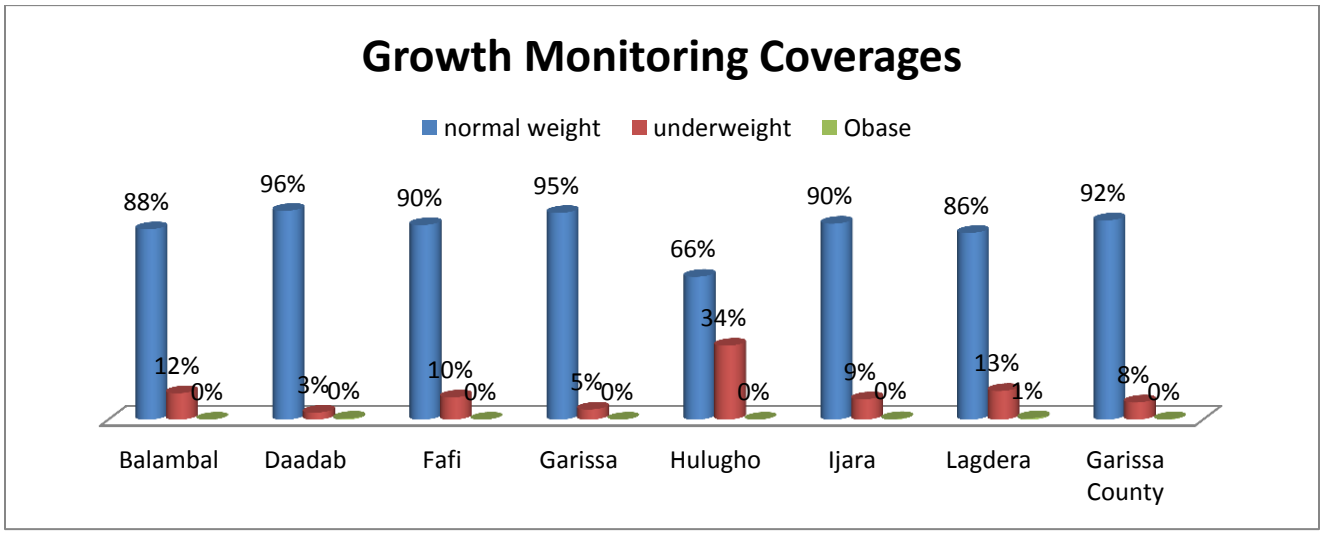
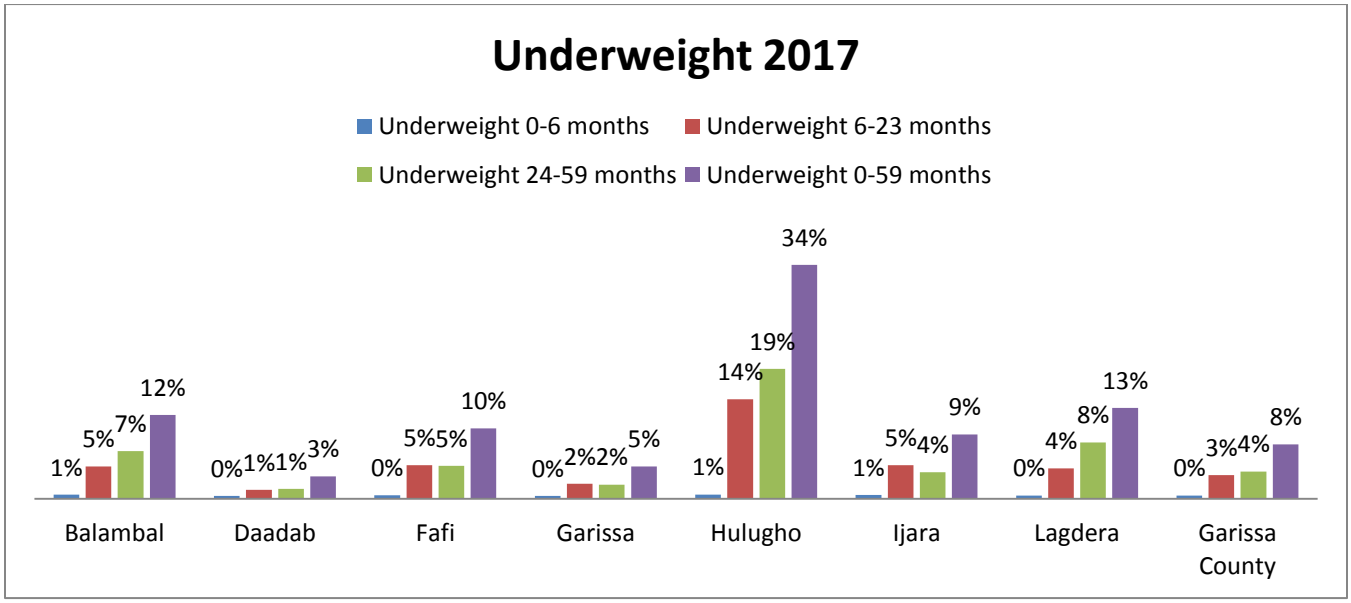


Figure 33 Growth monitoring coverage 2017

Of all the children weighed in CWC, 92% of them were normal weight while 8 % were underweight.

5.3.4 Underweight by age cohorts



The overall County underweight is 8% for 0-59 months with Hulugho Sub County recording highest underweight in all age categories.

5.3.5 Stunting

Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and in adequate psychosocial stimulation. Children are defined as stunted if their height for age is more than two standard deviations below the WHO child Growth standards median.

Stunting in early life particularly in the first 1000 days from conception until the age of two impaired growth has adverse functional consequences on the child. Some of those consequences include poor cognition and educational performance, low adult wages, lost productivity and , when accompanied by excessive weight gain later in childhood, an increased risk of nutrition-related chronic diseases in adult life.

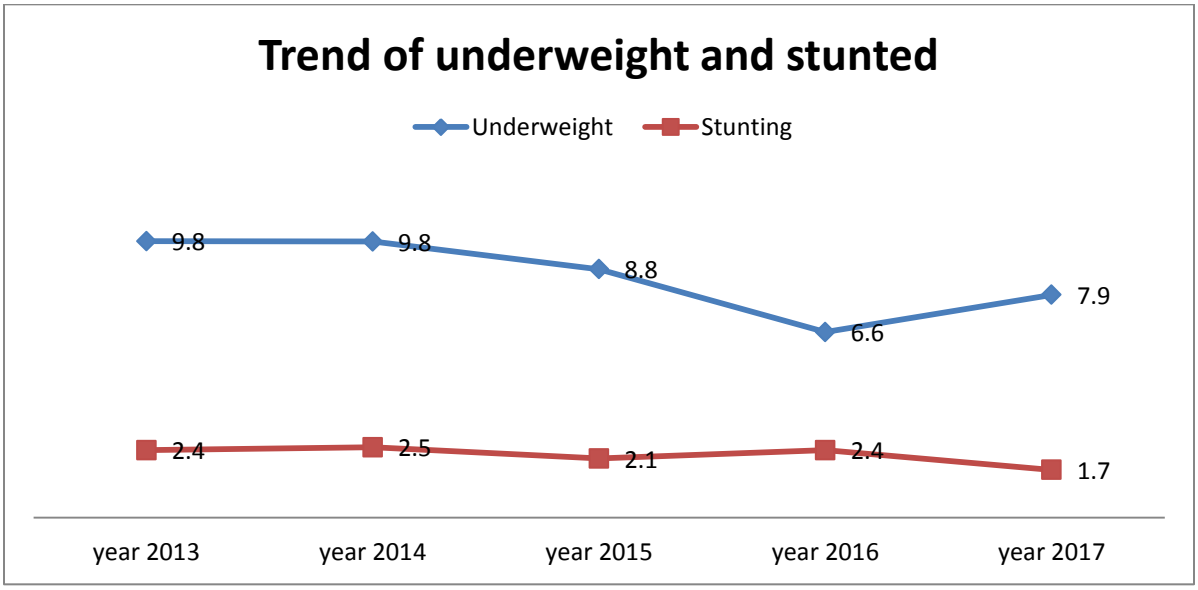


Figure 34 Trend of underweight and stunted 2013-2017

The County recorded the lowest stunting rate of 1.7% in 2017 as compared to the previous 2013 -2016 with 2014 having the highest at 2.5%.

Underweight prevalence increased from 6.6% in 2016 to 7.9% in 2017

From the year 2014 underweight children had been reducing constantly i.e. from 9.8% to 6.6% in 2016. This may be attributed to the effectiveness of nutrition program; food supplementation.

5.3.4 Integrated Management of Acute Malnutrition

Table 26integrated management of acute malnutrition

Data / Organization unit	Balambala	Dadaab	Fafi	Garissa	Hulugho	Ijara	Lagdera	Garissa County
OP: New admission cases	241	222	388	616	181	150	435	2,233
OP: Old Admission relapses	3	8	35	25	0	2	8	81
OP: Old Admission transfer from other OTP/SC	7	7	60	5	0	10	1	90
OP: Old admission return defaulters	0	6	32	7	0	1	7	53
Admissions	251	243	515	653	181	163	451	2457
Supplementary New admission cases	1,344	1,070	1,916	1,378	1,292	1,344	1,985	10,329
Supplementary: Old Admission transfer from other OTP/SC	0	6	205	17	2	16	41	287
Supplementary: Old Admission relapses	0	53	45	42	0	57	29	226
Supplementary Old admission return defaulters	0	36	75	26	1	20	35	193
Admissions	1,344	1,165	2,241	1,463	1,295	1,437	2,090	11,035
IP: New admission cases	1	24	36	196	6	48	16	327
IP: Old Admission relapses	0	1	0	7	0	0	0	8
IP: Old Admission return defaulters	0	0	1	1	0	0	0	2
IP: Old Admission transfer from other OTP/SC	0	0	7	0	0	0	0	7
Admissions	1	25	44	204	6	48	16	344

NOTE

Management of acute malnutrition; program coverage Standards

1. Death rate—less than 3%.
2. Defaulter rate—less than 15%.
3. Recovery/cure rate—above 75%.

5.3.5 Outpatient Therapeutic Program

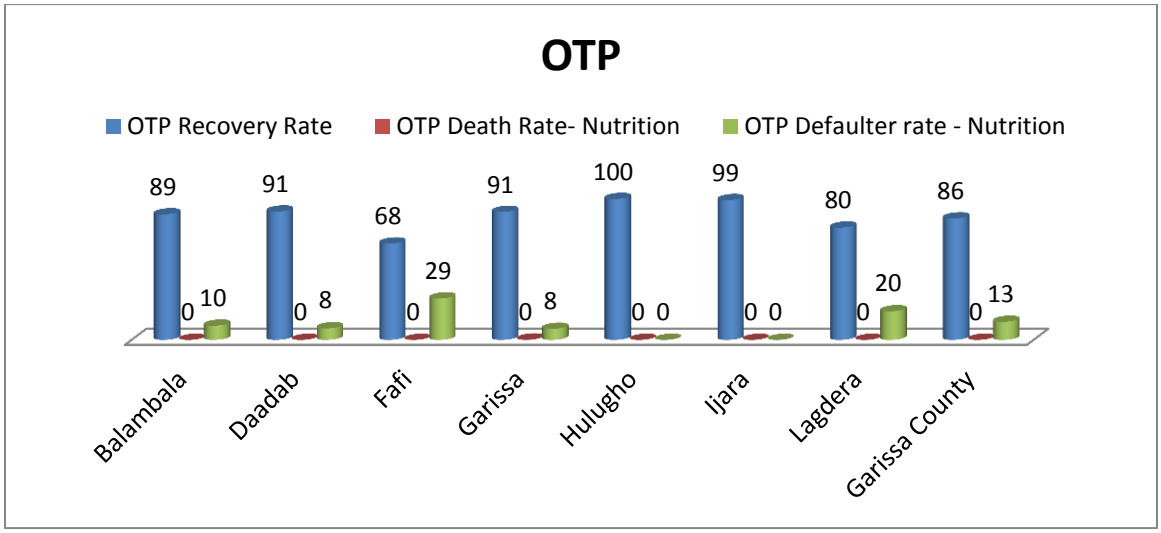


Figure 35 Outpatient therapeutic program

The Recovery rate Outpatient Therapeutic Program (OTP) for the county was 86% with Fafi having the least with 68% while Hulugho recorded 100%

There were no OTP related deaths (0%)

The defaulter rates for OTP was 13% for the County with Fafi recording highest at 29% and the least being Hulugho and Ijara Sub Counties with 0%.

5.3.6 Inpatient therapeutic program

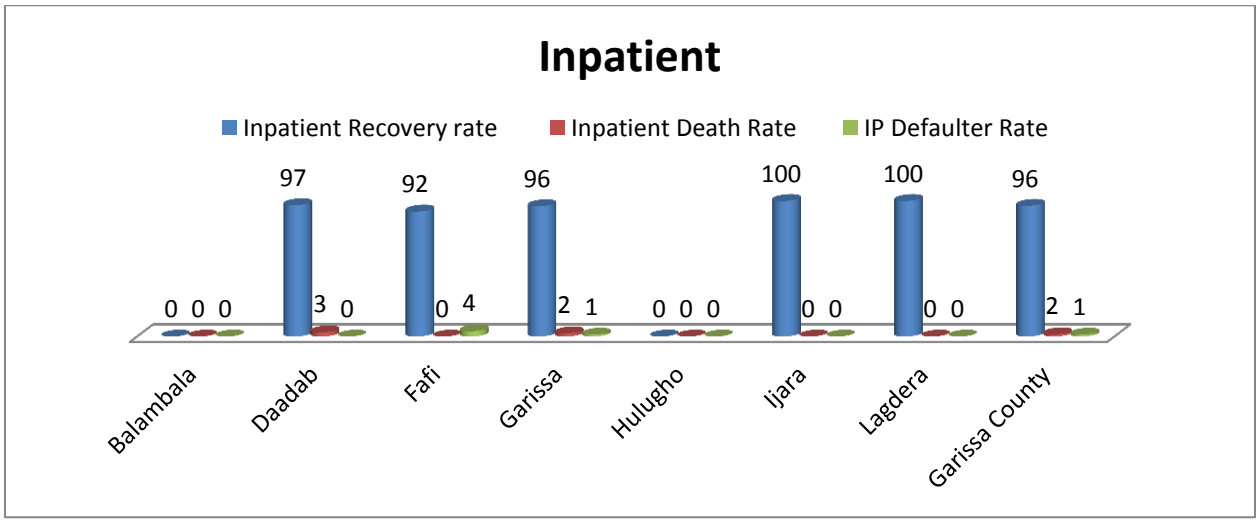


Figure 36 Inpatient therapeutic program

Ijara and Lagdera Sub Counties recorded 100% recovery rate while Balambala and Hulugho Sub Counties recorded 0% recovery. Inpatient Death rate was low in the all the Sub Counties except Garissa and Dadaab Sub Counties which a death rate of 2 and 3% respectively.

5.3.7 Supplementary Feeding Program

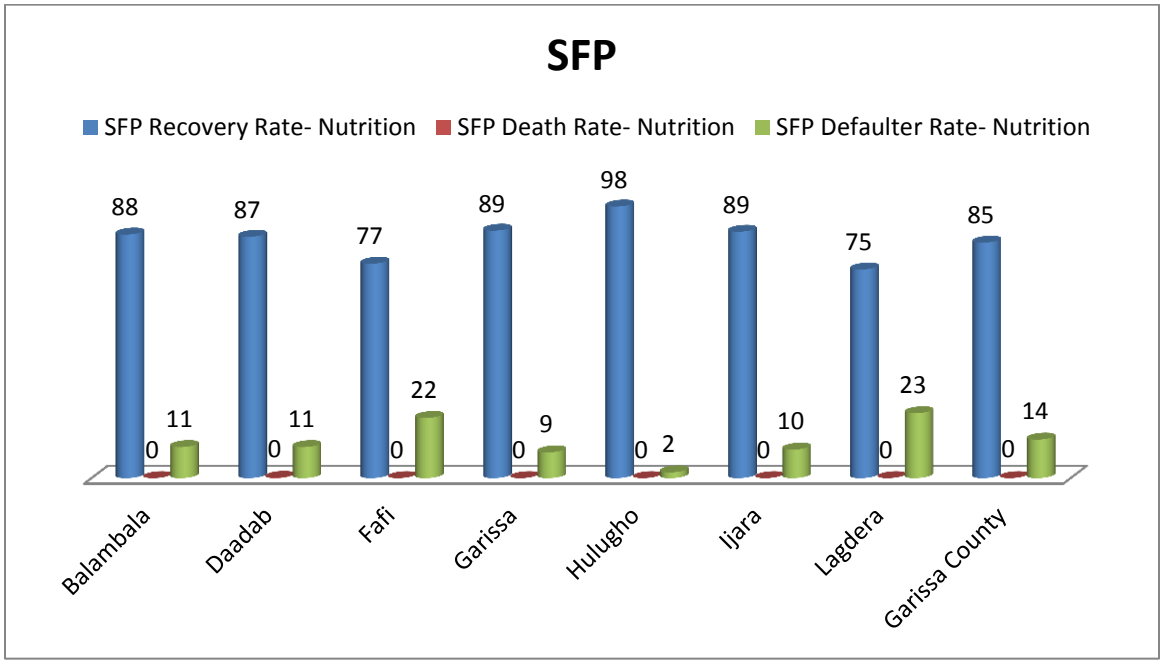


Figure 37 Supplementary feeding program

The County SFP Recovery rate was 85% with Hulugho recording the highest at 98% and Lagdera the least at 75%. County Defaulter rates was 14% (Lagdera leads with 75%) with no SFP death rates reported

5.3.8 Therapeutic Admission Trends 2017

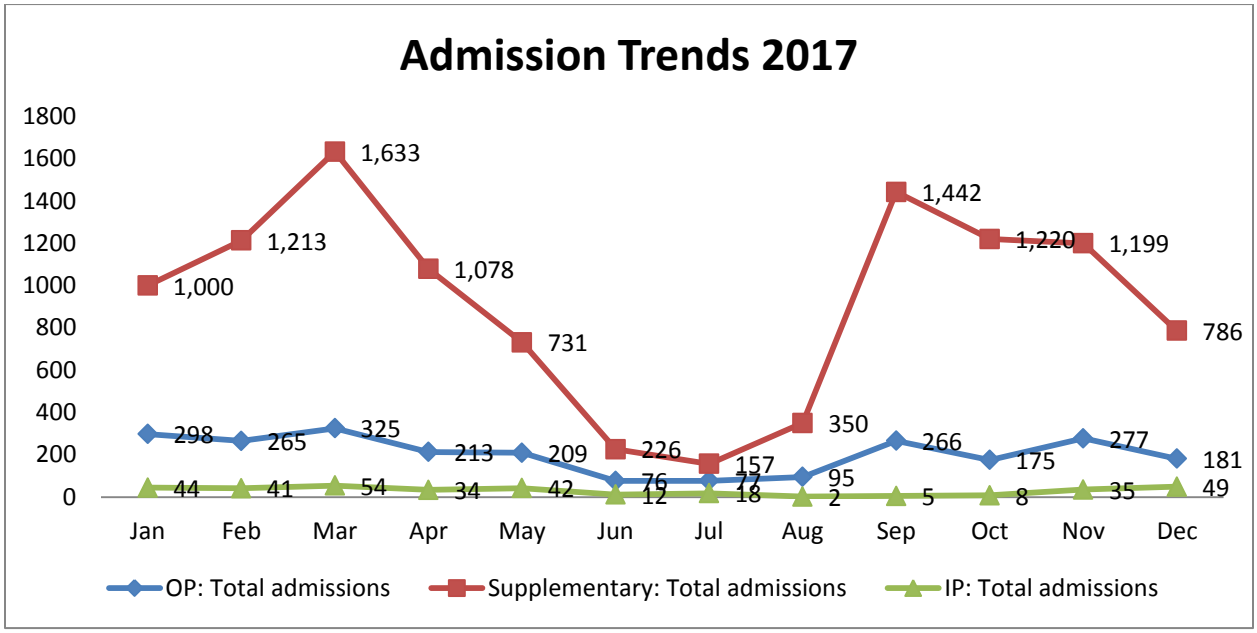


Figure 38 Therapeutic admission trends 2017

Generally there was a drop on admissions in all programs from March to July 2017.

5.4 Vitamin A Supplementation

Vitamin A may be the single most effective child survival intervention, since deficiencies in this micronutrient can cause blindness and can increase the severity of infections such as measles and diarrhea.

Vitamin A supplementation is given to specific age cohorts within the health care system. The specific cohorts are children 6 to 11 months (once a year) and 12 to 59 months who are supposed to be supplemented twice yearly and then aggregated to 6-59months. While lactating mothers are supplemented once within four weeks after delivery.

There are various strategies that the Division has used in order to reach the age cohort of 12-59 months which does not come to health facilities unless they are sick; likely childhood development centers, (ECDs), integrating supplementation with measles, polio and Malezi Bora which resulted to over 100% coverage in some sub counties.

5.4.1 Vitamin A Supplementation for 6-11 months

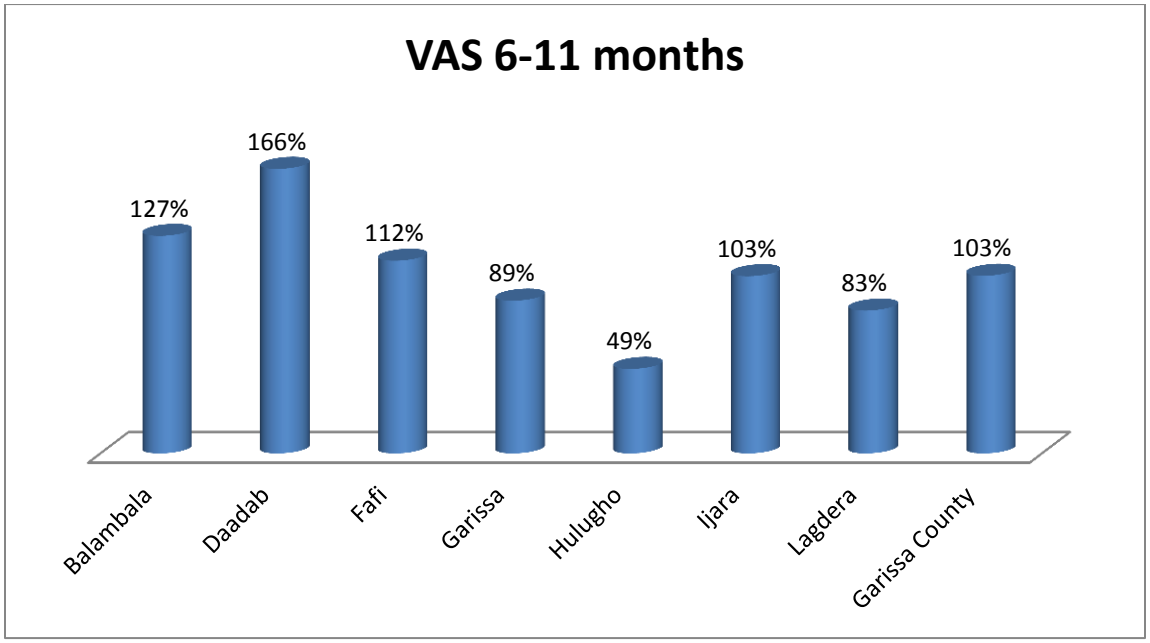


Figure 39 Vitamin A Supplementation for 6-11 months

The County VAS coverage was 103%. Daadab recorded the highest at 166% and Hulugho having the least at 49%.

5.4.2 Vitamin A 12-59 months for the year 2017

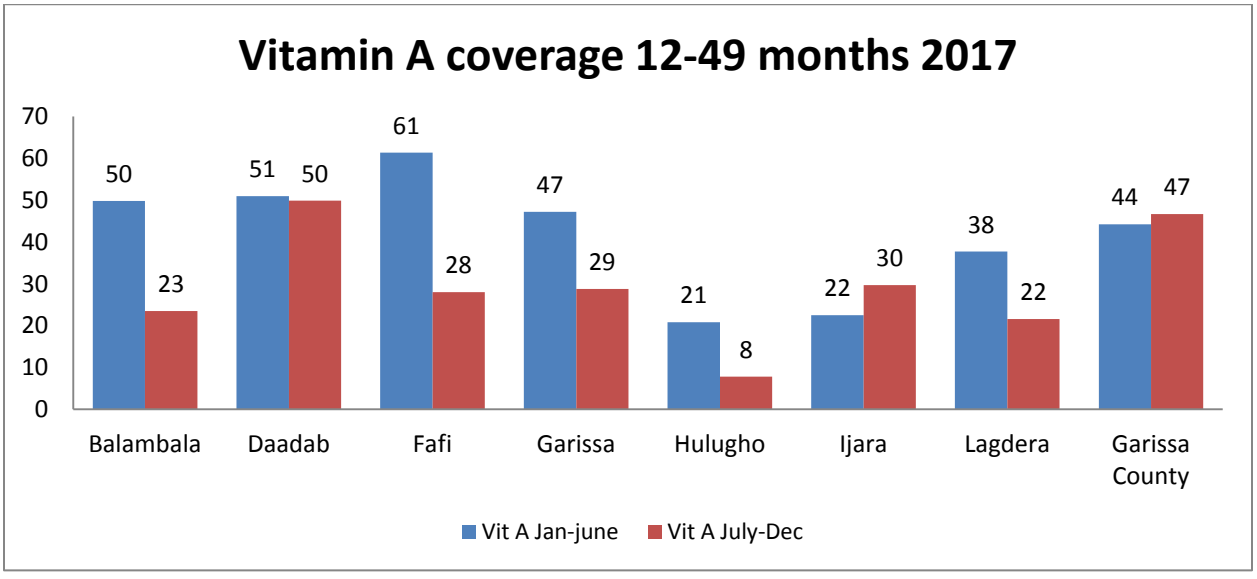


Figure 40 Figure 39 Vitamin A coverage 12-59 months 2017

The VAS 12-59 Months coverage for children given 2 doses of vitamin A in year 2017 was at 44% the highest being Daadab at 50% and the lowest being Hulugho with 8%.

5.4.3 Deworming 12-59 months for the year 2017

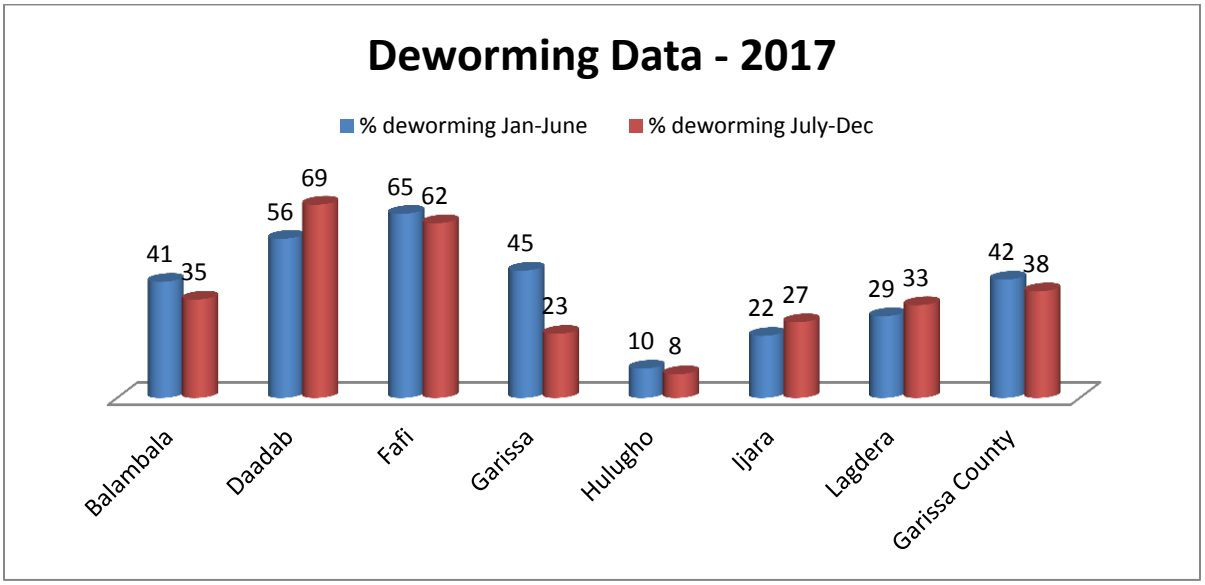


Figure 41 Deworming 12-59 months for the year 2017

Fafi Sub County had 62% coverage of children given 2 doses of dewormers while Hulugho had 8%. The overall County coverage of children 12-59months eligible for two doses of dewormers stands at 38%.

5.5 Polio Campaign

5.5.1 Introduction

The County have did not witness outbreak of polio virus in the year under review. 14 WPV cases had been confirmed in 2013consisting of both children <5 years and adults. This meant that everyone was vulnerable -Adult cases confirmed with WPV. In response to the End Game strategy the County initiated two (2) rounds of Polio campaign in the Months of January and April targeting all children less than 5 years of age.

The broad objective of the campaign was to increase population immunity in children <5yrs and population at large that at risk. The Strategy used were house to house vaccination campaign

The County continuously faces the risk of disease importation from infected countries due to;

- Low immunity of children – routine immunization
- Significant surveillance gaps
- Very hard to reach communities especially with routine immunization services
- Regular movement of refugees
- Risk of importation of diseases outbreaks
- Very porous border
- High population movements (e.g. pastoralists, traders)
- Mobile and migrant populations apparently extremely important in moving disease Neighboring countries with similar challenges

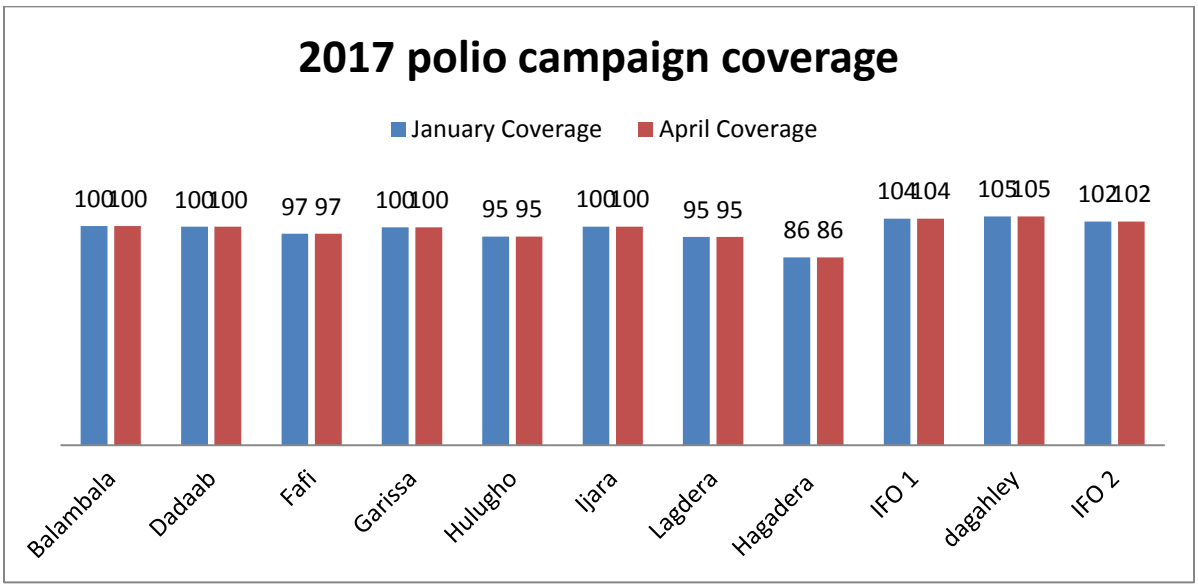


Figure 42 2017 polio campaign coverage

Conclusion

The County must strive to attain high population immunity especially in the border hard to reach areas through routine immunization and any other opportunity

Each Sub County has a responsibility to use every opportunity to immunize children and raise immunity

Surveillance system must be very sensitive to pick any importations

All populations, especially mobile, migrant, underserved people, should be targeted for surveillance, routine immunization and supplemental Immunization Activities (SIA).

6.0 HIV

6.1 Introduction

HIV testing and counseling is essential for successful HIV prevention and treatment programs. The National target for HTS is 90% of the adult population in Kenya. Population based data to measure progress towards this HTS target are needed to assess the country's changing needs for HIV prevention and treatment.

HIV testing and counseling services are a gateway to HIV prevention, care and treatment. The benefits of a person knowing his/her HIV status can be seen at the individual, community and population levels. Knowledge of HIV status among HIV infected persons remains low, thus there is need to expand HTS needs to reach more population and strategies are needed to increase repeat testing for persons at risk for HIV infection.

According to NASCOP Garissa county prevalence rate is estimated to be 0.9%, however, the prevalence might be higher within Garissa township which is more cosmopolitan.

To optimize access to testing services, HIV testing can be conducted in 3 different settings; Facility based, Community based and self testing.

6.2 HIV Testing Services (HTS)

These services are offered at all service points excluding PMTCT.

Table 27 HIV testing Services

	Balambala	Dadaab	Fafi	Garissa	Hulugho	Ijara	Lagdera	County
Total population	84730	91307	127074	173388	66293	59550	95754	698097
Total Tested HTS	2844	2846	3773	8945	2118	3519	1178	25223
Total PMTCT	1253	2847	2814	7788	699	2232	1829	19462
Grand Total Tested	4097	5693	6587	16733	2817	5751	3007	44685
First Testing	2543	2403	3055	3550	2199	1880	1033	16663
Repeat Testing	396	610	852	5464	215	1684	145	9366
Couples Tested	15	47	122	532	5	104	1	826
Concordant couple	0	0	28	95	0	51	0	174
Discordant couple	0	0	0	12	0	1	0	11
HTS Positive	0	3	8	246	0	11	6	274
PMTCT Positive	1	0	9	54	0	3	0	67
Positive <15 years	0	0	1	12	0	1	1	15
Positive >15 years	0	3	7	234	0	10	5	259
Prevalence Rate	**0.02%**	**0.05%**	**0.26%**	**1.79%**	**0.00%**	**0.24%**	**0.20%**	**0.76%**
Population tested for HIV	**4.8%**	**6.2%**	**5.2%**	**9.7%**	**4.2%**	**9.7%**	**3.1%**	**6.4%**
PMTCT Positivity	**0.08%**	**0.00%**	**0.32%**	**0.69%**	**0.00%**	**0.13%**	**0.00%**	**0.34%**
Proportion of couple tested	**0.37%**	**0.83%**	**1.85%**	**3.18%**	**0.18%**	**1.81%**	**0.03%**	**1.85%**
Proportion of concordant couple	**0.0%**	**0.0%**	**23.0%**	**17.9%**	**0.0%**	**49.0%**	**0.0%**	**21.1%**
Proportion of discordant couple	**0.0%**	**0.0%**	**0.0%**	**2.3%**	**0.0%**	**1.0%**	**0.0%**	**1.3%**
Proportion of PMTCT testing	**31%**	**50%**	**43%**	**47%**	**25%**	**39%**	**61%**	**44%**

A total of 44,685 clients were tested for HIV thus 6.4% of county population knew their HIV status in year 2017.Garissa Sub County had the highest number of people who knew their HIV status (9.7%) while Lagdera had the lowest 3.2%; **the national target is 90%.**

21% of the couples who were tested were concordant compared to 1.3% discordant couples. Garissa Sub County had the highest proportion of discordant couples i.e. 2.3% of those tested.

Only 1.85% of the couples knew their HIV status in year 2017.

Of the clients tested, PMTCT accounted for 44%

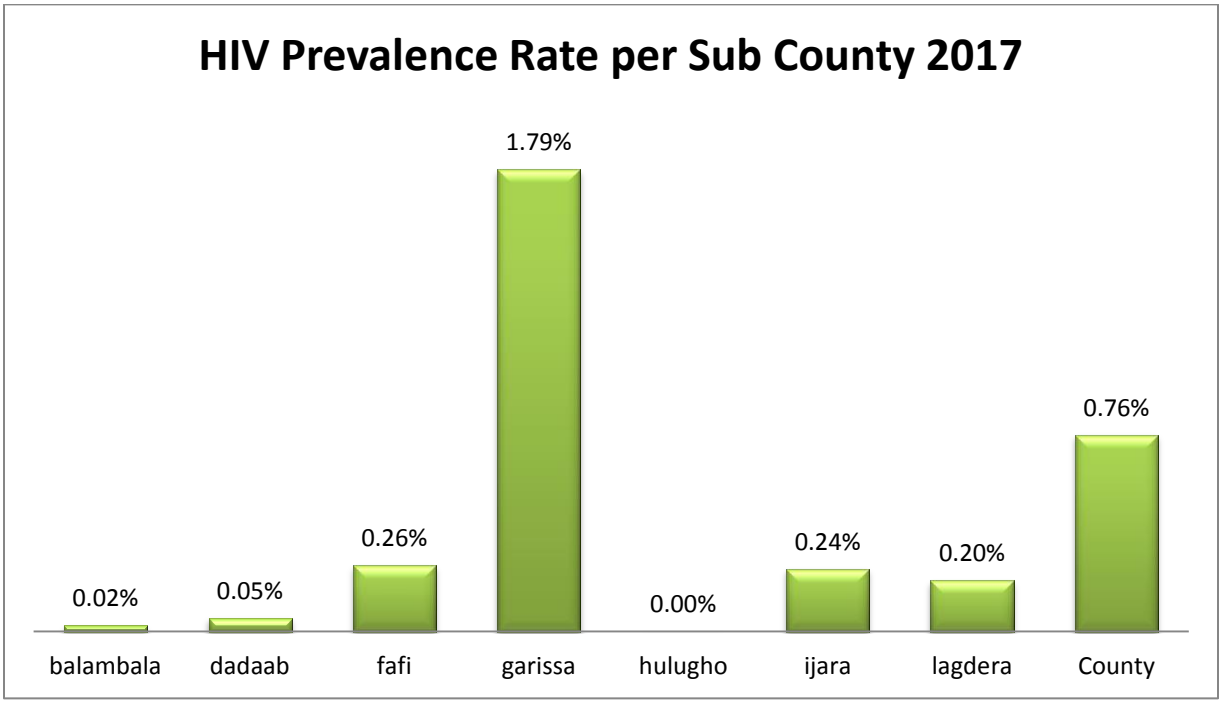


Figure 43 HIV Prevalence Rate per Sub County 2017

Based on the available data, 0.76% of the county population is infected with HIV. Garissa Sub County has the highest prevalence rate of 1.79% while Hulugho Sub County had the least.

6.3 Anti Retroviral Therapy

Government policy dictates that all people living with HIV (PLHIV) qualify, ART should be initiated as soon as the patient is ready to start preferably within 2 weeks from the time of HIV diagnosis. Also, WHO standards states that 90% of PLHIV should be on ART.

ART program aims at providing anti retroviral therapy to the people affected and exposed, and also to provide prophylaxis treatment to prevent opportunistic infection. This ensures life prolongation.

According to NASCOP, Garissa county HIV prevalence rate is at 0.9% thus 6,283 people are living with HIV/AIDS, ideally, 5,655 (90%) should be on ART.

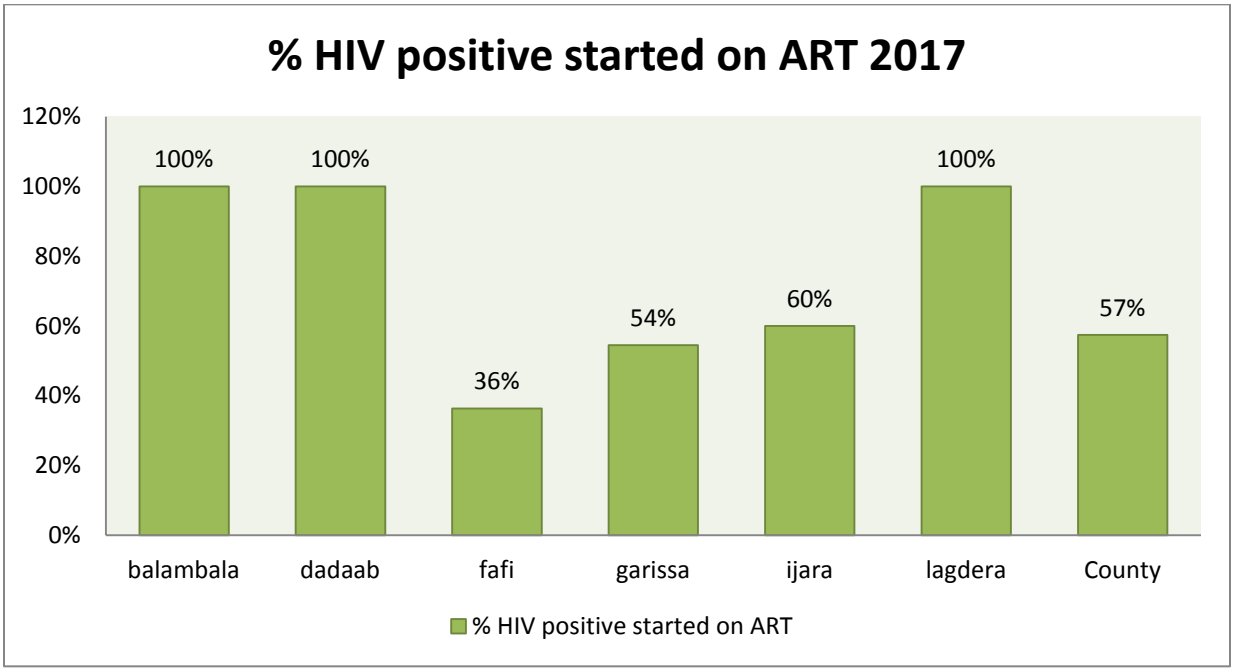


Figure 44 % HIV positive started on ART 2017

In the year under review, 57% of clients who tested HIV positive were started on ART with Fafi and Garissa Sub Counties initiating the least (36% and 54%) respectively.

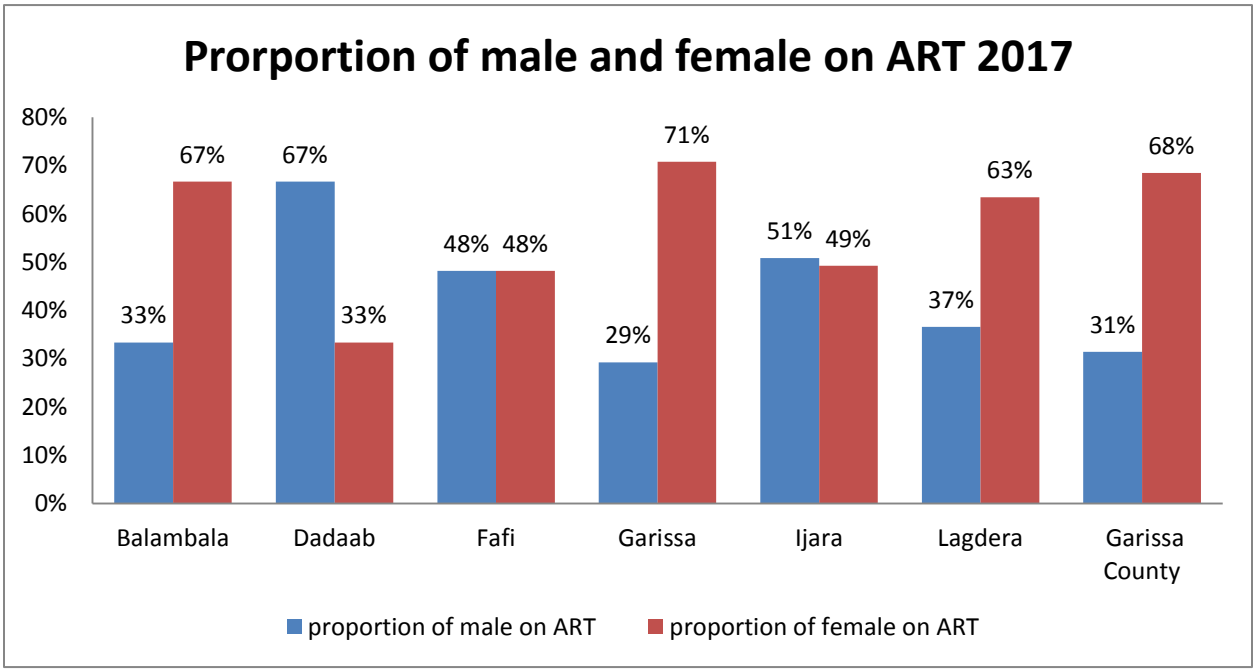


Figure 45 Proportion of male and female on ART 2017

In all the sub counties, there were more female on ART than male except Dadaab and Fafi Sub Counties. Hulugho Sub County did not have any positive clients in the year under review.

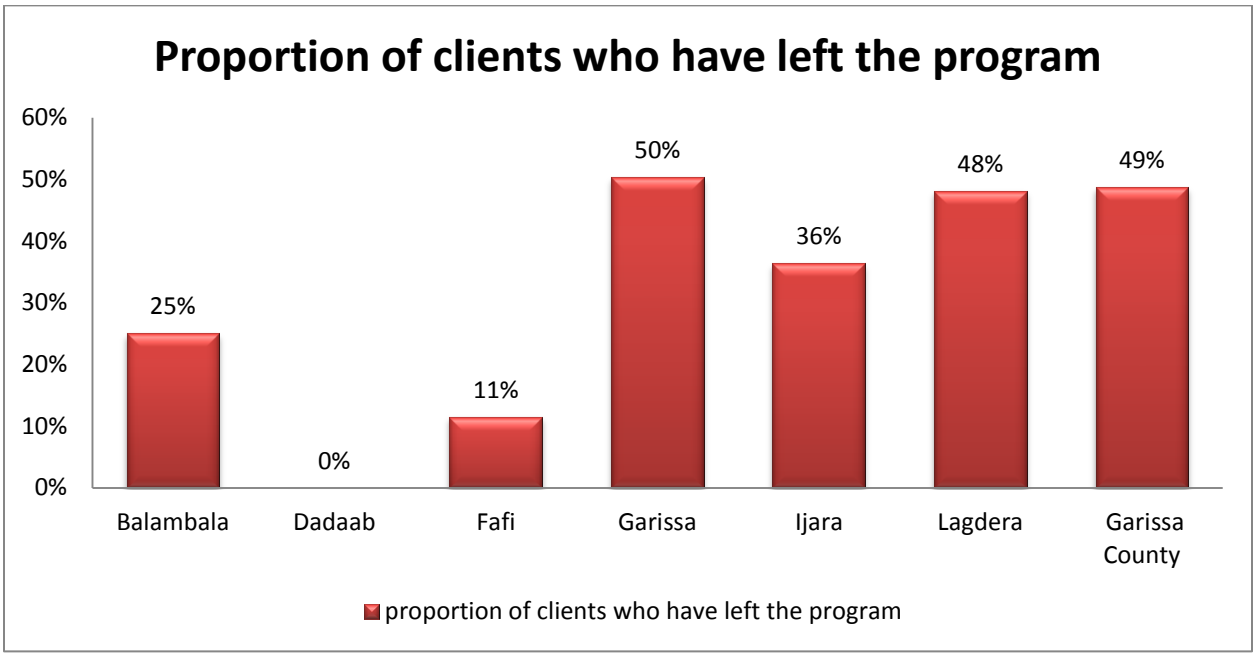


Figure 46 Proportion of clients who have left the program

Of all the clients who were enrolled, 49% have left the program with Dadaab Sub County retaining all her clients.

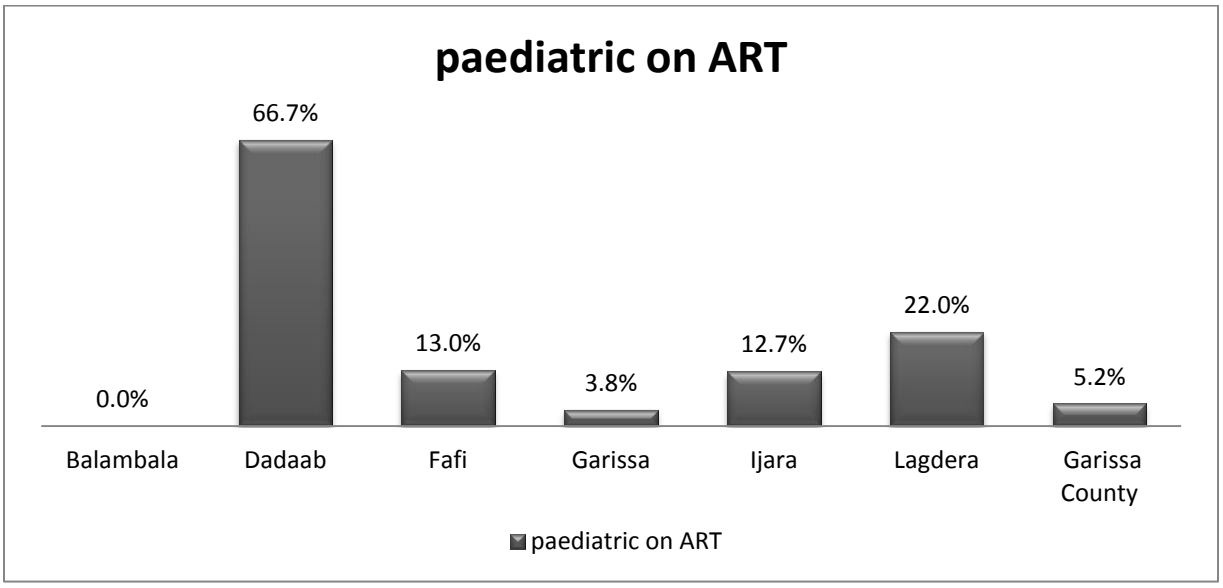


Figure 47 Paediatric on ART

5.2% of the total clients on ART are paediatric (<15 years) with Dadaab Sub County having the highest number at (66.7%) while Balambala did not have any.

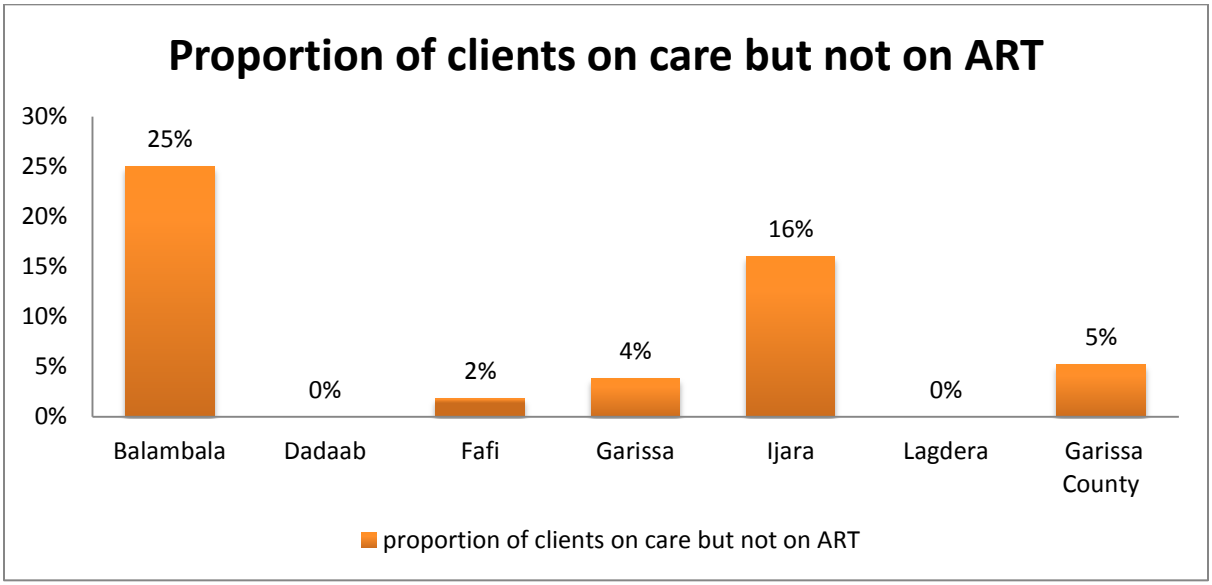


Figure 48 Proportion of clients on care but not on ART

Of the total number of clients enrolled on care, 5% were not initiated on ART with Dadaab and Lagdera sub counties initiating all their clients on ART.

25% of clients on care in Balambala Sub County are not on ART.

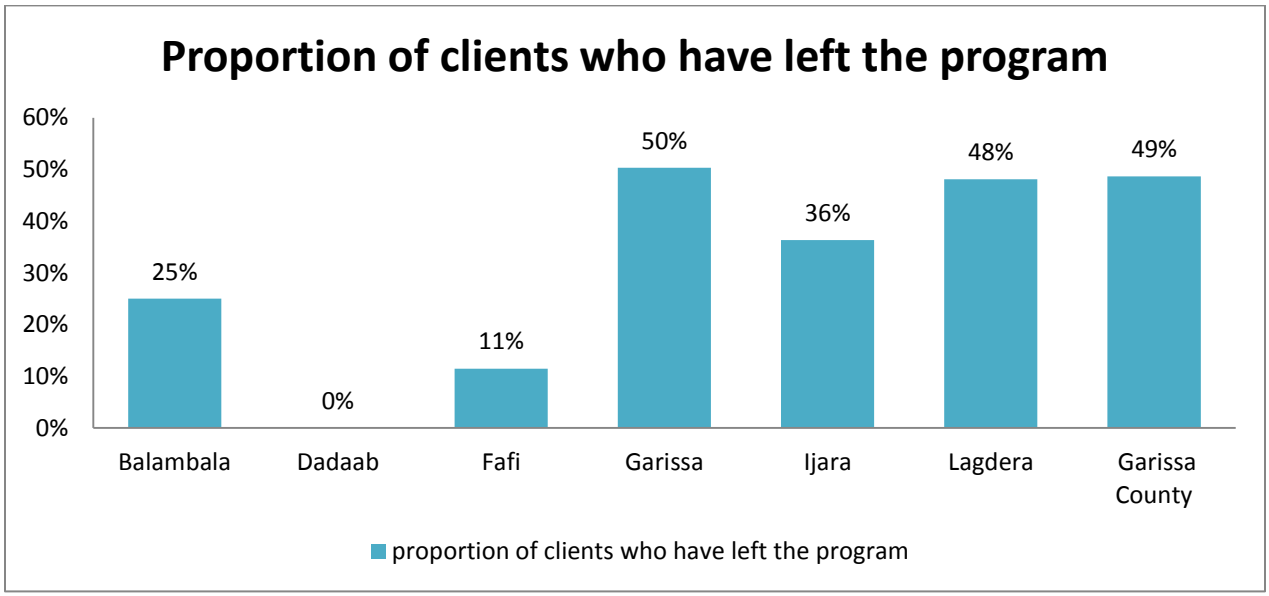


Figure 49 Proportion of clients who have left the program

Of all the clients ever initiated on ART, 49% have left the program by either lost to follow up, death, or transfer out.

Dadaab Sub County managed to retain all her clients in the year under review.

6.4 ANC PMTCT

Prevention of mother-to-child transmission (**PMTCT**, also known as prevention of vertical transmission), refers to interventions to prevent transmission of HIV from an HIV-positive mother to her infant during pregnancy, labor, delivery, or breastfeeding.

NASCOP goal is to reduce rate of MTCT of HIV to less than 5% (Virtual elimination of HIV)

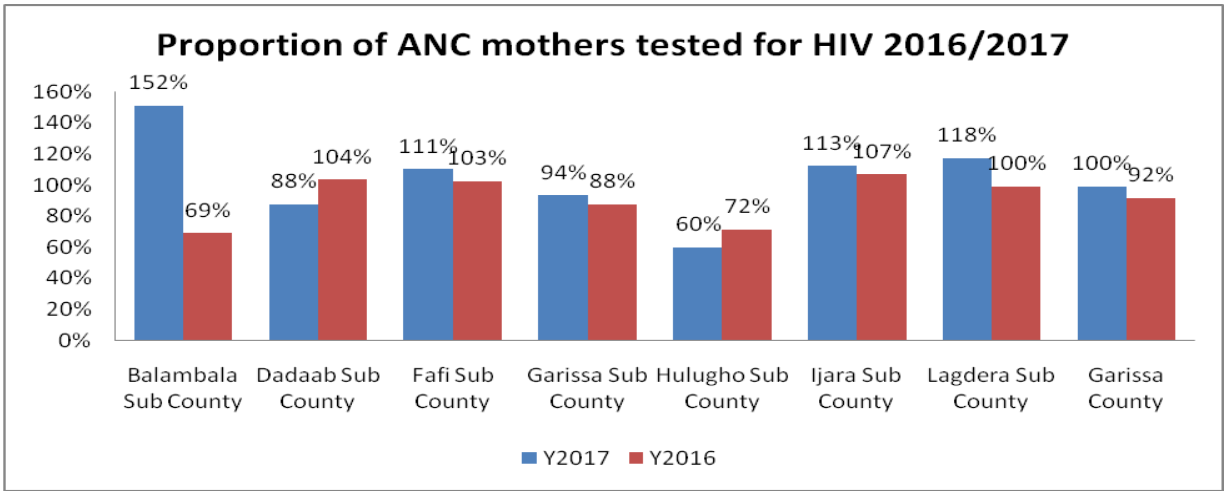


Figure 50 Proportion of ANC mothers tested for HIV 2016/2017

In year 2017, 100% of ANC mothers were tested for HIV compared to 92% in year 2016.

Balambala,Fafi, Ijara and Lagdera had over achieved; this may be due to double counting of ANC mothers i.e retested mothers.

Only 60% of ANC mothers in Hulugho were tested for HIV compared to 72% in year 2016 thus 12% decrease.

Generally there was an increase of mother tested for HIV in all the counties except Dadaab and Hulugho as compared to year 2016.

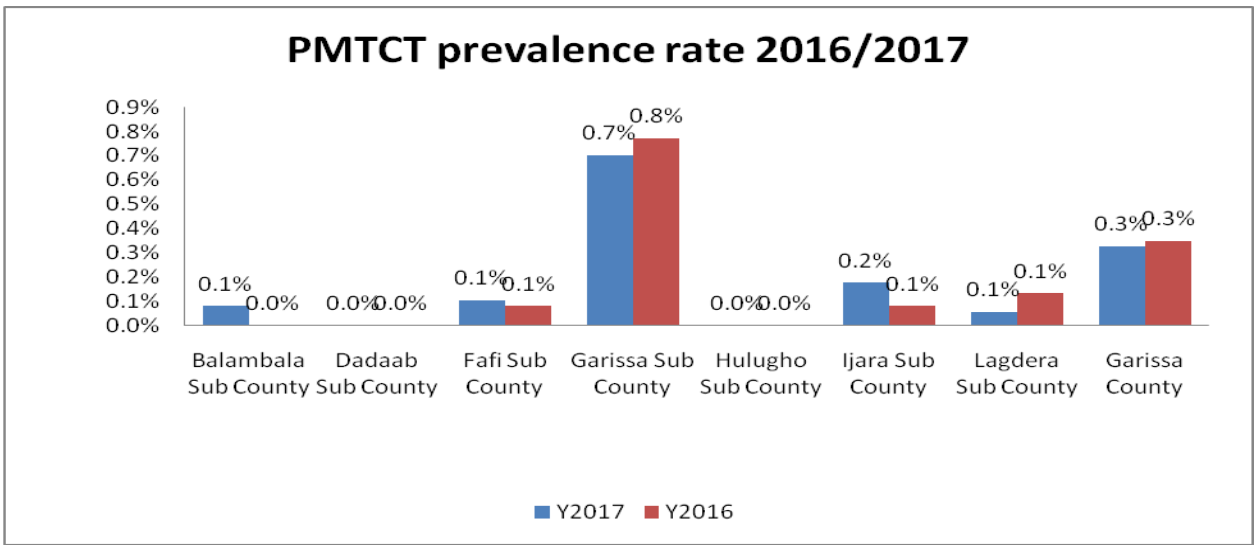


Figure 51 PMTCT Prevalence rate 2016/2017

PMTCT prevalence rate remain constant at 0.3% in both years. Garissa Sub county had the highest prevalence rate in both years, this may be due to the fact that it is a commmercial hub where there is a lot of transit .

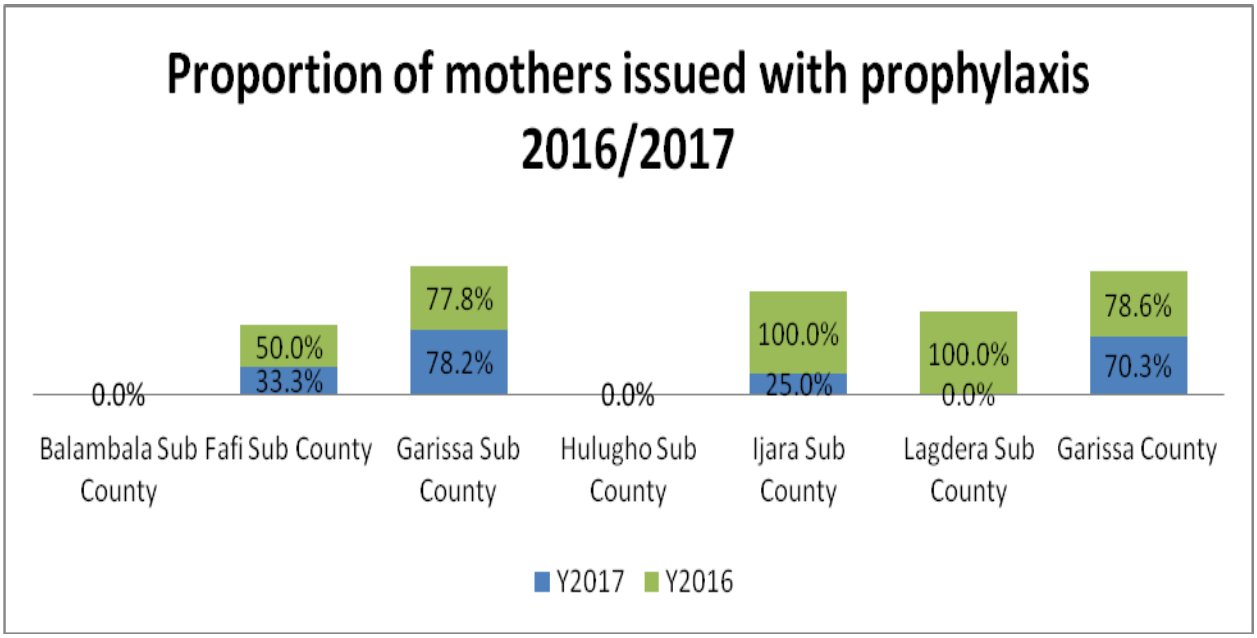


Figure 52 Proportion of mothers issued with prophylaxis

NASCOP guideline state that, all HIV positive mothers should be put on ART prophylaxis, however only 70.3% of HIV positive mothers were issued with prophylaxis in year 2017,this was a drop by 8.3% as compared to year 2016.

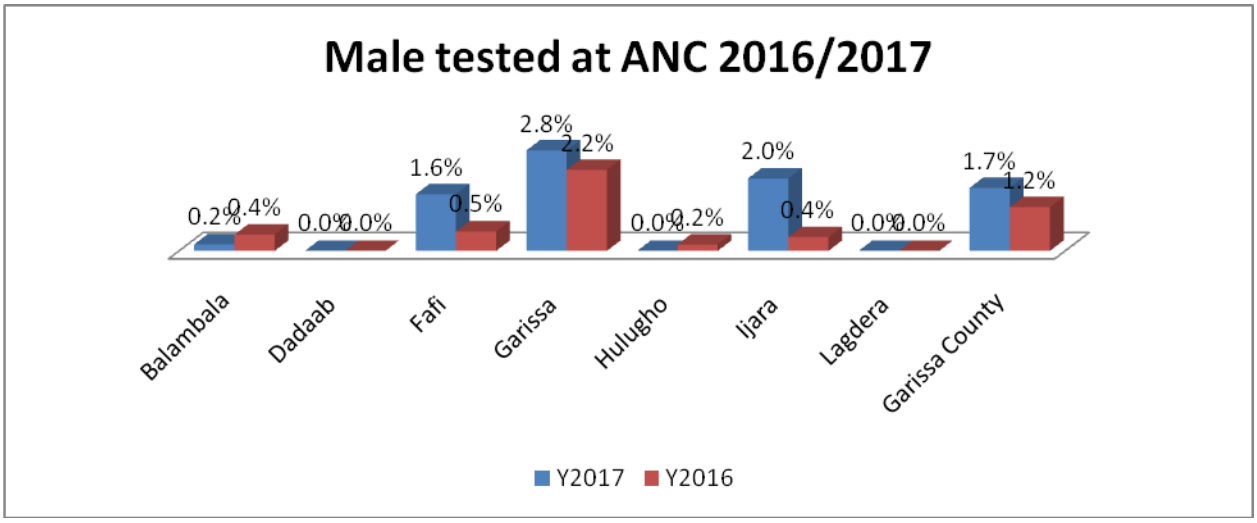


Figure 53 Proportion of male tested at ANC 2016/2017

In year under review only 1.7% of the male partners were tested for HIV as compared to 1.2% in year 2016 thus an increase of 0.5%; this calls for more male involvement in ANC.

In Dadaab and, Hulugho and Lagdera no partner was tested at ANC.

6.4.1 HIV Exposed Infant

HIV exposure of an infant or child can occur in utero, at labour and delivery and through breast milk. The HIV exposed infant is followed up until the age of 24 months.

Table 28 PMTCT ARV Prophylaxis Rate (Infant)

Organization unit	Y2017	Y2016	Y2015	Y2014
Balambala Sub County				
Dadaab Sub County			0.0%	
Fafi Sub County		0.0%	0.0%	
Garissa Sub County	60.0%	32.3%	17.9%	25.0%
Hulugho Sub County				
Ijara Sub County	0.0%		0.0%	
Lagdera Sub County		0.0%		0.0%
Garissa County	57.1%	30.3%	15.6%	23.8%

In year 2017, 57.1% of expected infant were put on prophylaxis; this is an improvement compared to other years. Ideally all (100%) HEI are supposed to be put on ARV prophylaxis hence need for improvement in this intervention.

Table 29 PMTCT Positivity Infants

Organization unit	Y2017	Y2016	Y2015	Y2014
Balambala Sub County				
Dadaab Sub County				
Fafi Sub County	0.0%		0.0%	0.0%
Garissa Sub County	4.3%	2.6%	8.6%	14.8%
Hulugho Sub County				
Ijara Sub County			0.0%	0.0%
Lagdera Sub County				
Garissa County	4.3%	2.6%	7.5%	11.8%

In year 2017, 4.3% of infant in HEI program turn to be HIV positive via PCR

6.5 90-90-90 Strategy

This is a concept which was introduced by the United Nation's program on HIV/AIDS in 2013. The idea is that by 2020, 90% of people who are HIV infected will be diagnosed, 90% of people who are diagnosed will be on antiretroviral treatment and 90% of those who receive antiretroviral will be virally suppressed. Viral suppression is when a person's viral load – or the amount of virus in an HIV-positive person's blood – is reduced to an undetectable level.

The strategy is an attempt to get the HIV epidemic under control and is based on the principal of universal testing and treating. What is central to "test and treat" approaches is that if one can identify people early on in their infection, and start treatment so they become virally suppressed, the onward transmission of HIV will be prevented and this will impact on HIV incidence at a population level.

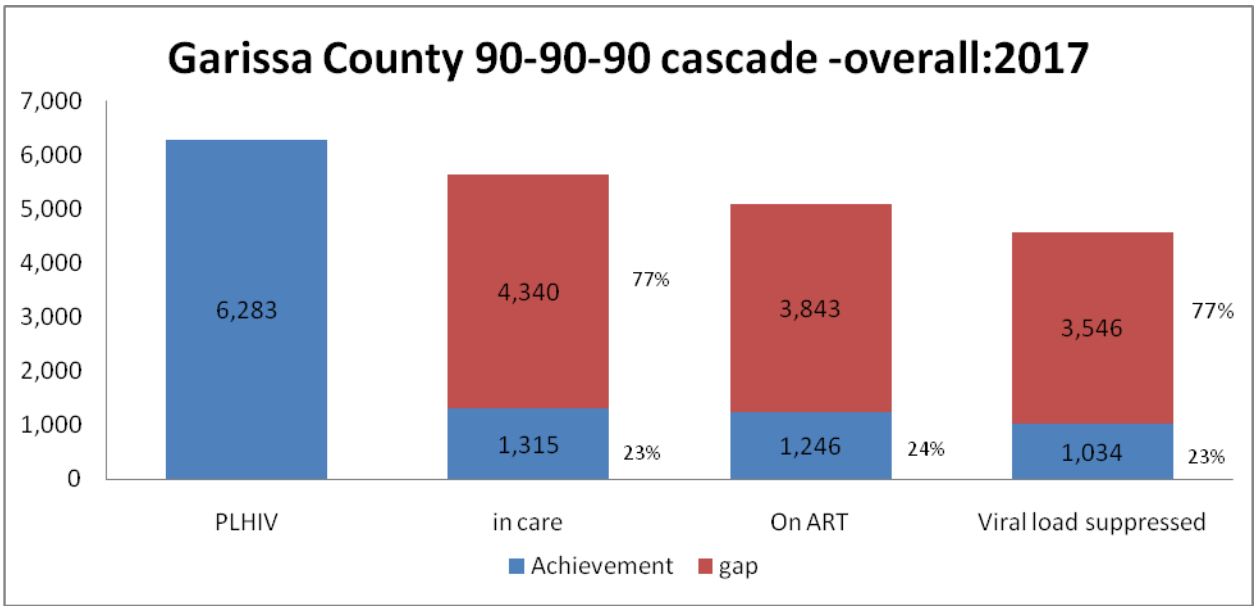


Figure 54 90-90-90 Cascade 2017

Based on the prevalence rate, the County is expected to identify 6,283 people living with HIV of which 5,655 are supposed to be on care,5,089 on ART and 4,580 viral suppressed however, only 23 % (1,315) of expected clients were on care, 24% (1,246) on ART while 23% (1,034) virally suppressed.

7.0 TUBERCULOSIS PROGRAMME

7.1 BACKROUND

The TB/Leprosy program was formed in 1980 when the Kenya TB and Leprosy programs were joined together by the Ministry of Health to become National Leprosy and Tuberculosis Program (NLTP).

In year 2008 Division of Leprosy, TB and Lung Diseases (DLTLD) was created with more functions for NLTP by giving responsibilities for handling other chronic lung disease like asthma and chronic obstructive pulmonary disease (COPD).

7.1.1: Vision, Mission and Goal TB Program

Vision

To render Kenya and its communities free of Leprosy, TB and Lung Disease.

Mission

To sustain and improve Tuberculosis, Leprosy and Lung Disease control gains in order to accelerate the reduction of Tuberculosis incidence, intensify post- elimination leprosy activities and control Lung disease.

Goal

A generation free of Tb, Leprosy and Lung Disease.

Table 30 TB facilities in Garissa County

NAME OF CONTROL ZONE	DISTRICT IN THE ZONE	DIAGNOSTIC FACILITIES	TREATMENT FACILITIES	TOTAL
Garissa	Garissa and Balambala	12	0	**12**
Lagdera	Lagdera and Dadaab	9	3	**12**
Ijara	Ijara and Hulugho	5	3	**8**
Fafi	Fafi	3	2	**5**
Total		**29**	**8**	**37**

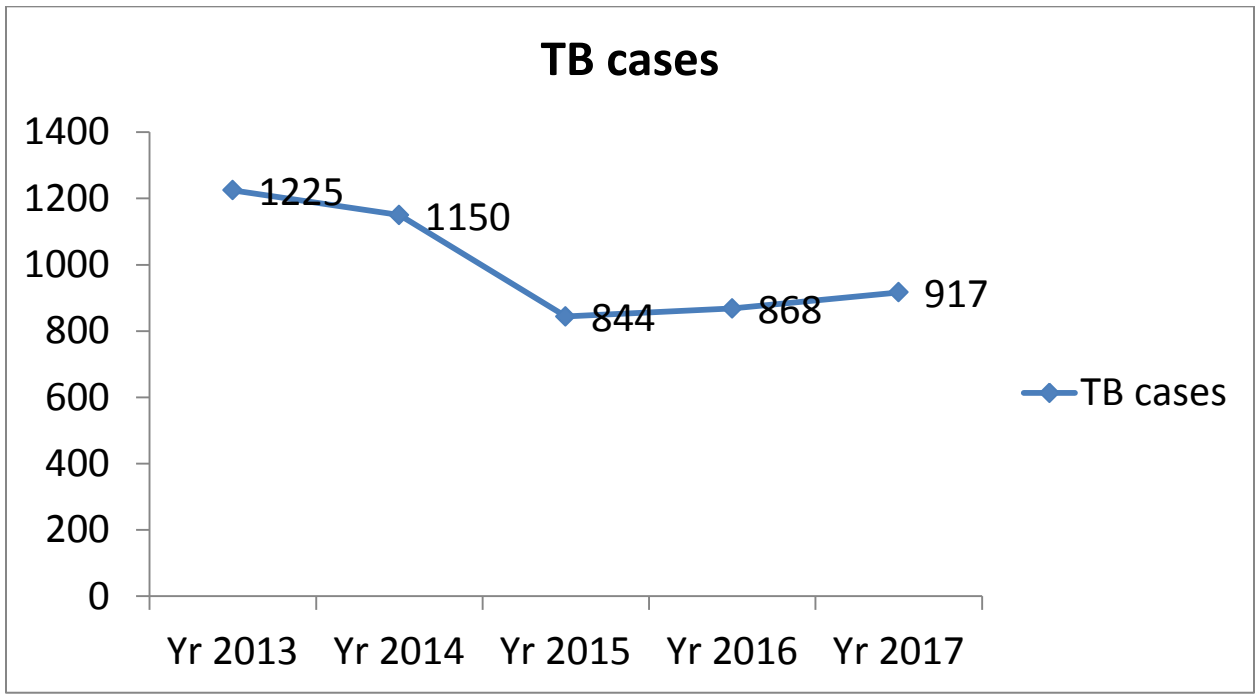


Figure 55 Trend of TB cases 2013 - 2017

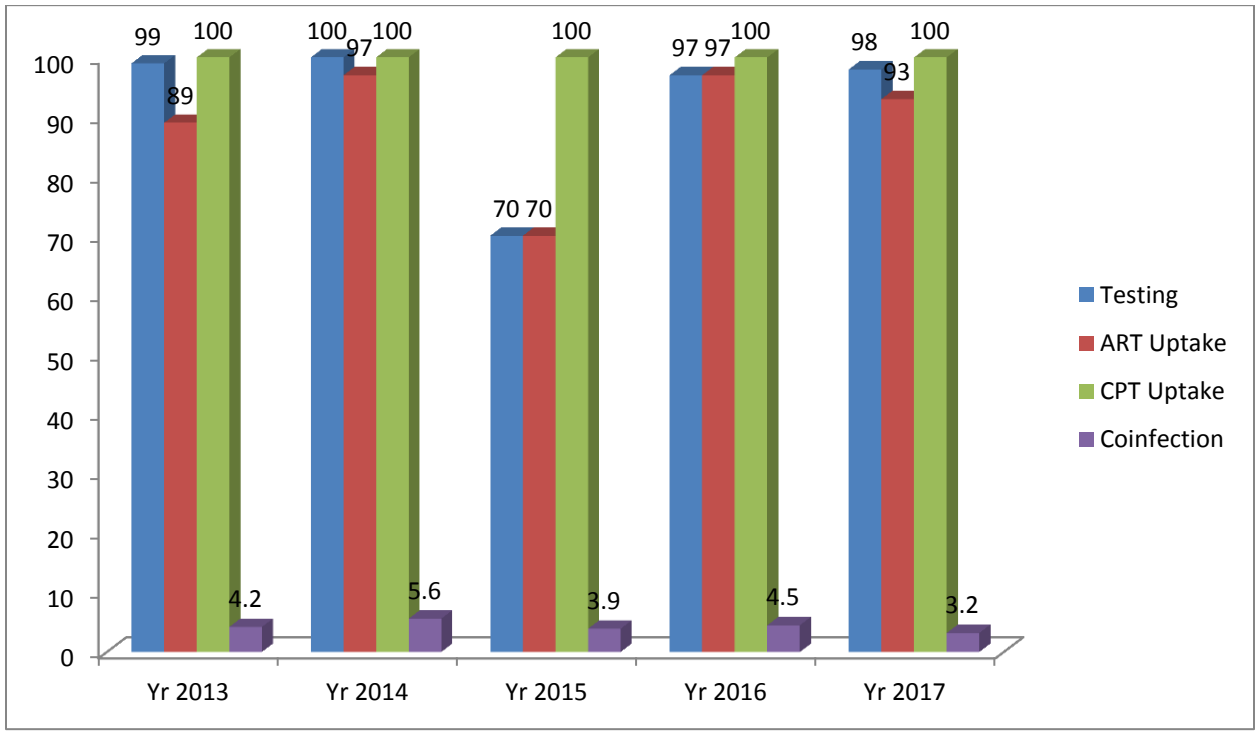


Figure 56 TB/HIV Co-infection Report 2013 To 2017

8.0 COMMUNITY HEALTH SERVICES

8.1 Introduction

The community-based approach, as set out in the Community Strategy, is the mechanism through which households and communities strengthen their role in health and health related development by increasing their knowledge, skills and participation. The intention is to strengthen the capacity of communities to access, analyze, plan, implement and manage health and health-related development initiatives so that they can contribute effectively to the country's socio-economic development.

By the end of year 2017, Garissa County had 87 established community units of which 82 are functional. However the targeted community units were 200 thus 43.5% achievement.

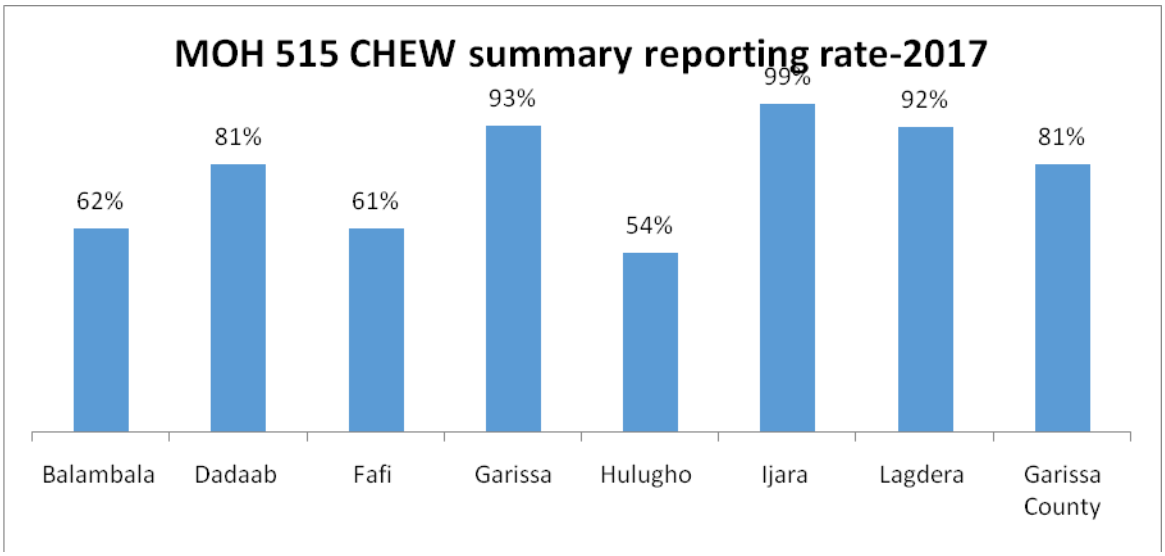


Figure 57 MOH 515 CHEW summary reporting rate

81% of the community units reported, with Hulugho, Fafi and Balambala Sub County having the list reporting rate of 54%, 61% and 62% respectively.

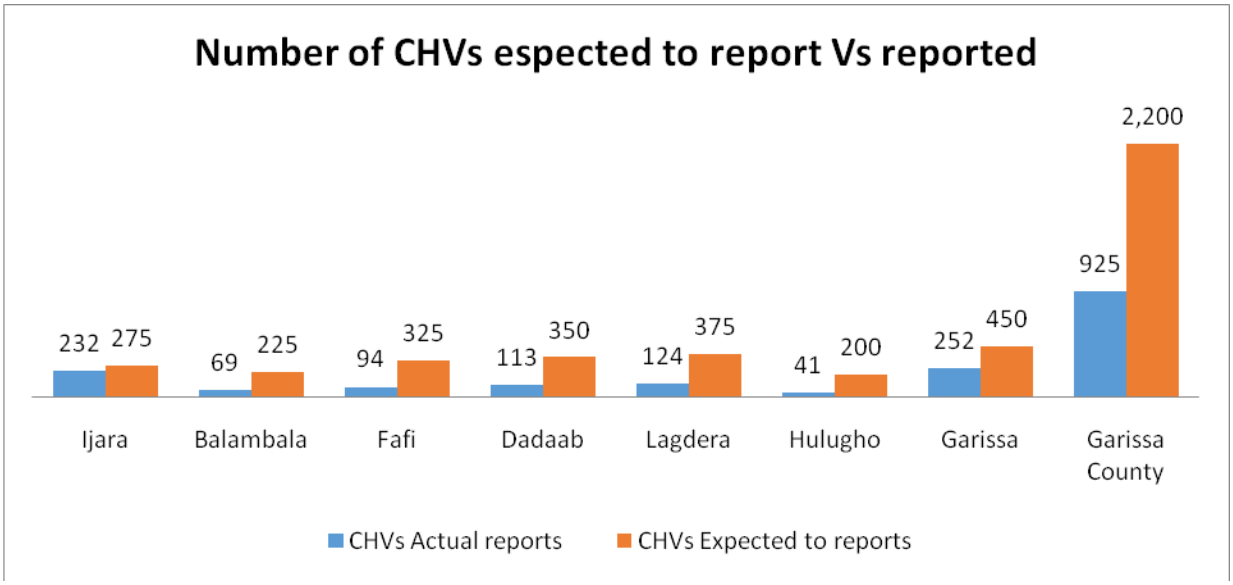


Figure 58 expected CHV reports vs reported

Significant number of CHVs didn't not report in all the Sub Counties.

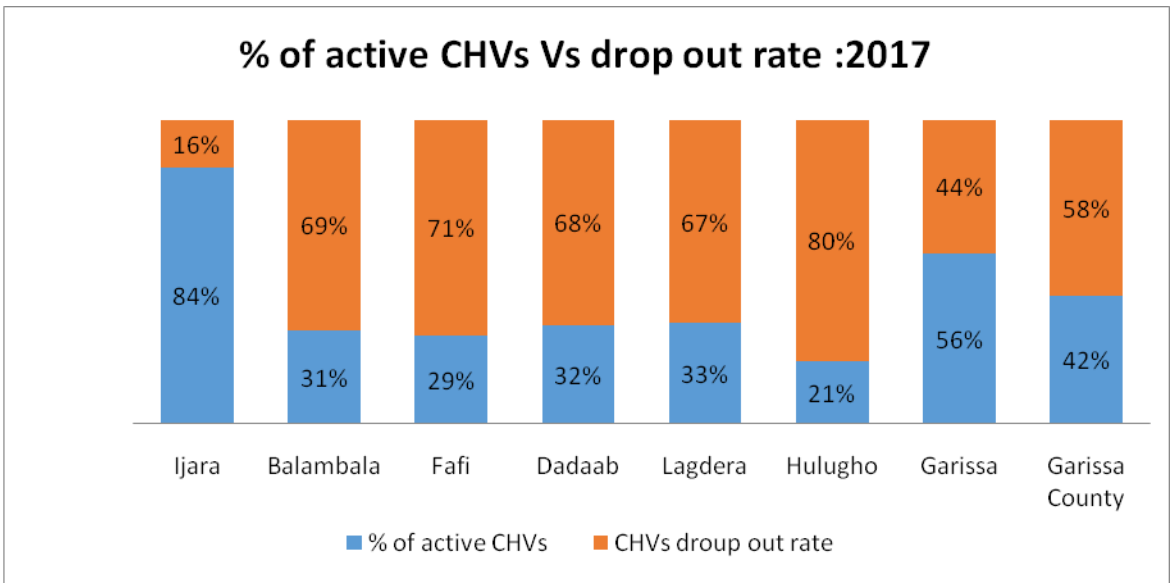


Figure 59 Percentage of active CHVs vs drop out rate 2017

In Garissa County, 58% of CHVs were no longer active with Hulugho Sub County having the highest dropout rate of 80% while Ijara Sub County had the lowest dropout rate (16%).

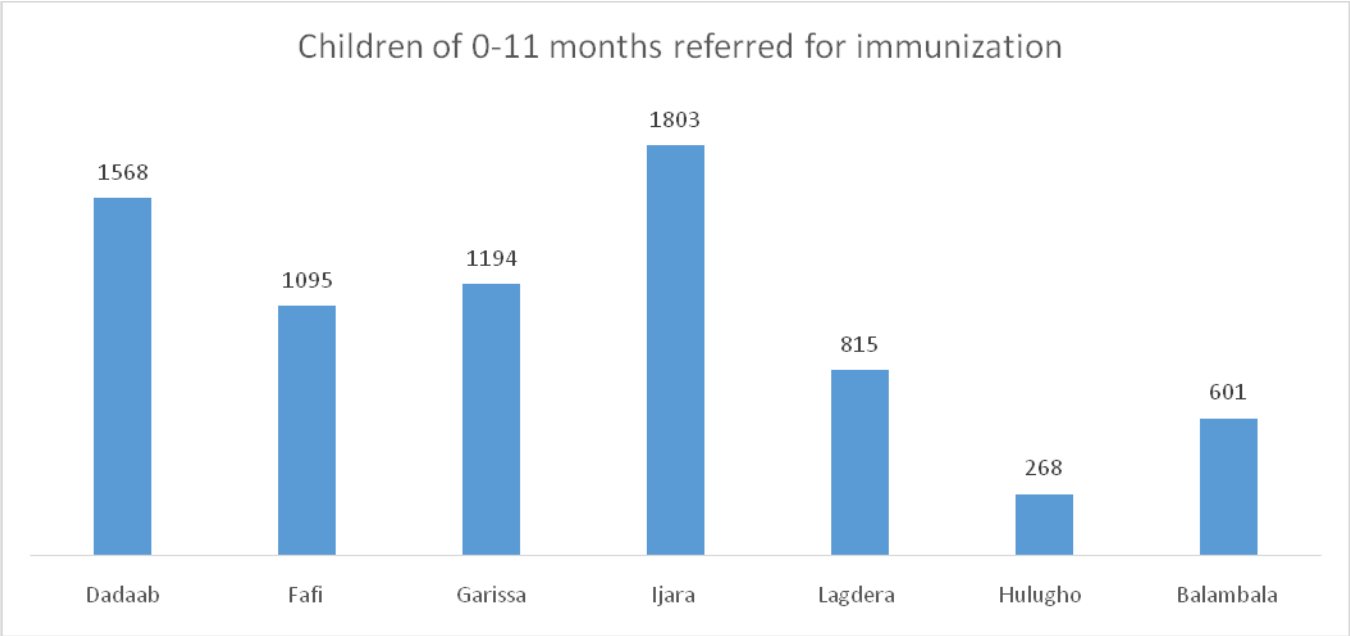


Figure 60 0-11 Months children referred for immunization

Ijara Sub County had the highest number of children referred for immunization while Hulugho had the lowest; this is a replica of CHVs dropout rate as indicated in the above graph.

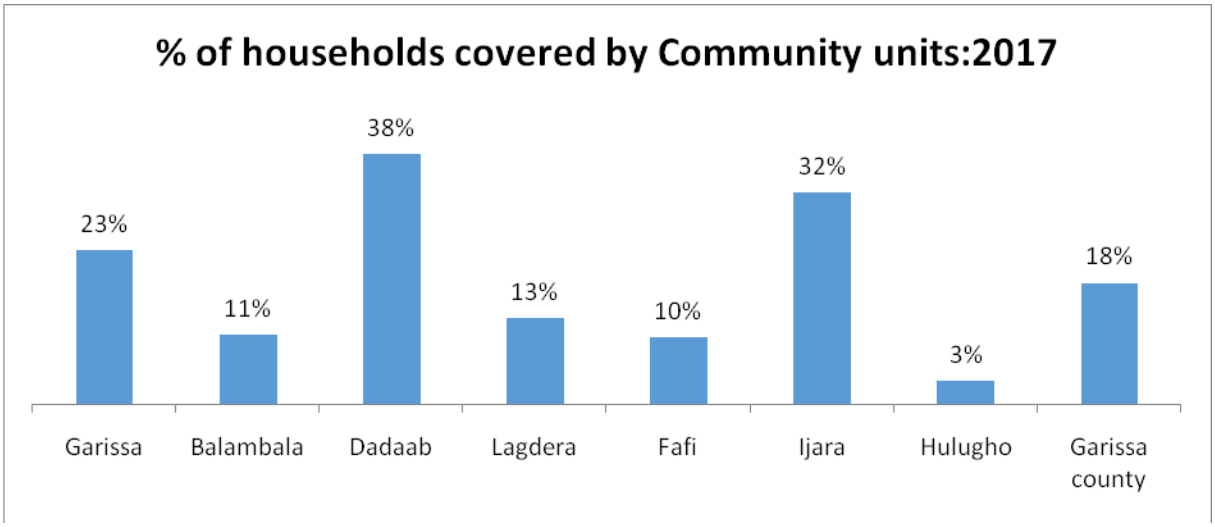


Figure 61 Percentage of households covered by community units

Only 18% of households within Garissa County are covered by community units with Hulugho Sub County been the poorest covered (3%) and Dadaab Sub County been the highest covered (38%).

9.0 LABORATORY SERVICES

9.1 Reporting Rates

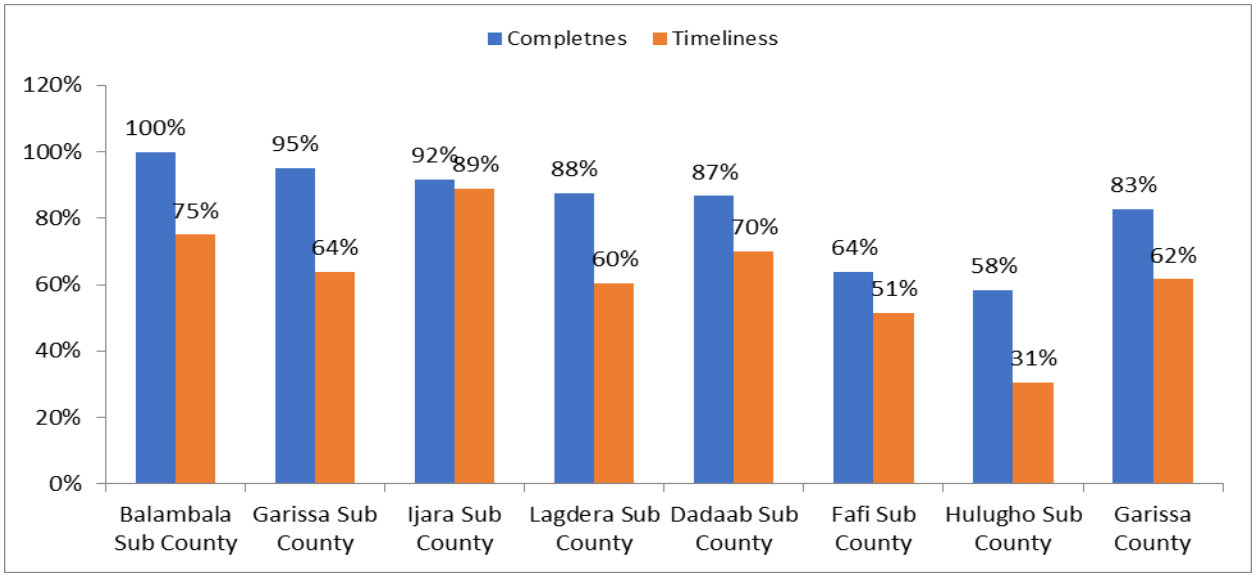


Figure 62 MOH 706 Lab Summary reporting rates

83% of the expected laboratory reports were submitted in 2017, 62% of them on time.

9.2 Serology

Table 31 Serology reports

Test	Total Exam	Number Positive	Positivity Rate
VDRL	12075	26	0.21%
TPHA	2239	256	11.4%
ASOT	439	106	24.1%
HIV	19219	76	0.39%
Brucella	9353	1498	16.0%
Rheumatoid factor	2355	168	
Helicobacter pylori	10094	2253	22.3%
Hepatitis A test	617	28	
Hepatitis B test	2501	136	
Hepatitis C test	1527	62	
HCG	10616	3205	
CRAG Test	176	44	

Of the 439 ASOT tests done 106 (24%) turned out to be positive, 22% of Helicobacter pylori were positive.

1.1 9.3 TB Sputum

Table 32 TB Sputum tests

	Total exam	Number positive	Positivity Rate
Total TB smears	4458	289	6.4%
TB new suspects	2104	144	6.8%
TB Follow up	497	19	3.8%
TB Gene-Xpert	421	60	14.2%
MDR TB	411	2	0.4%

421 TB Gene-Xpert tests were done in 2017 60 (14.2%) turning positive.

SPECIMEN REFERRAL TO HIGHER LEVELS

Specimen referral	No. of specimens	No. of results received
CD4	40	11
Viral load	142	80
EID	10	7
HIV Discodant/discripant	1	1
TB Culture	9	5
Virological	3	1
Clinical Chemistry	1	1
Histology/cytology	0	0
Haematological	1	1
Parasitological	0	0
Blood samples for transfusion screening	115	69

PARASITOLOGY

	Total Exam	Number Positive	Positivity Rate
Malaria BS (Under five years)	16762	788	4.7%
Malaria BS (5 years and above)	42910	2070	4.8%
Malaria Rapid Diagnostic Tests	25119	759	3.0%
Stool Examination Total	6277		
Taenia spp.		92	
Hymenolepis nana		83	
Hookworm		188	
Roundworm		195	
S. mansoni		77	
Trichuris trichura		89	
Amoeba		1448	

4.7% of malaria BS tests done turned out positive for under 5 year and almost a similar number 4.8% of over 5 years malaria BS test turning positive.

URINE CHEMISTRY

	TOTAL EXAM	POSITIVE
URINE CHEMISTRY	49463	
Glucose		
Ketones		
Proteins		
URINE MICROSCOPY	45885	
Pus cells (>5/hpf)		15718
S. haematobium		1401
T. vaginalis		596
Yeast cells		2479
Bacteria		2021

BLOOD CHEMISTRY

BLOOD SUGAR TEST			
	Total Exam	Low	High
Blood sugar	13634	366	1961
OGTT	96	1	27
RENAL FUNCTION TEST			
Renal Function Test			1126
	Total Exam	Low	High
Creatinine	1616	97	96
Urea	969	73	73
Sodium	1004	60	19
Potassium	998	33	23
Chlorides	994	13	12
LIVER FUNCTION TEST			
Liver Function Test Total			484
	Total Exam	Low	High
Direct bilirubin	256	0	76
Total bilirubin	248	0	103
ASAT (SGOT)	240	2	64
ALAT (SGPT)	270	2	58
Serum Protein	246	23	3
Albumin	261	50	6
Alkaline Phosphatase	230	11	58
LIPID PROFILE			
	Total Exam	Low	High
Total cholesterol	55	5	6
Triglycerides	55	4	4
LDL	52	3	4
HORMONAL TEST			
	Total Exam	Low	High
T3	12	2	1
T4	11	1	1

TSH	11	1	
PSA	5		1
TUMOR MARKERS			
Tumor Markers	Total Exam	Number Positive	
CEA	2	0	
C15-3	1	0	
CSF CHEMISTRY			
	Total Exam	Low	High
Proteins	1		
Glucose	1		

HAEMATOLOGY

Hematology tests	**Total Exam**	**HB < 5 g/dl**	**HB between 5 and 10 g/dl**
Full blood count	16152	463	4429
HB estimation tests (other techniques)	17517	483	8000
	Total Exam	**Number < 500**	
CD4	36	0	
	Total Exam	**Number Positive**	
Sickling test total	0	0	
	Total Exam		
Peripheral blood films	1798		
BMA	9		
Coagulation profile	0		
Reticulocyte Count	1		
	Total Exam	**High**	
Erythrocyte Sedimentation rate	1106	321	

Of the 16152 Full Blood Count tests done, 4429 (27%) had HB of between 5 and 10 g/dl

Blood Grouping	**Number**
Total blood group tests	11674
Blood units grouped	1043
BLOOD SAFETY	
Blood units received from blood transfusion centers	985
Blood units collected at facility	496
Blood units transfused	869
Transfusion reactions reported and investigated	5
Blood grouping and cross matched	1164
Blood units discarded	57
Blood Screening at facility	**Number Positive**
HIV	162
Hepatitis B	76
Hepatitis C	26
Syphilis	479

985 blood units were received from blood transfusion centres, 496 collected at the facility. 5 transfusion reactions were reported and investigated in the year under review.

BACTERIOLOGY

Bacteriological Sample	Total Exam	Total Cultures	Number Culture Positive
Urine	1545	67	17
Pus swabs	51	19	13
High Vaginal Swabs	113	12	2
Throat swab	1	1	1
Rectal swab			
Blood	2	6	1
Water			
Food			
Urethral swabs			

Bacterial enteric pathogens	
Stool Cultures Total	52
	Number positive
Stool Cultures	54
Stool Isolates	
Salmonella typhi	33
Shigella - dysenteriae type1	1
E. coli O 157:H7	3
V. cholerae O1	1
V. cholerae O139	0

Bacterial Meningitis	
	Number
CSF total	5
CSF Positive	
CSF Contaminated	
Bacterial meningitis Serotypes	**Number Positive**
Neisseria meningitidis A	
Neisseria meningitidis B	
Neisseria meningitidis C	
Neisseria meningitidis W135	
Neisseria meningitidis X	
Neisseria meningitidis Y	
Neisseria meningitidis(indeterminate)	
Streptococcus pneumoniae	
Haemophilus influenzae (type b)	
Cryptococcal Meningitis	
Bacterial Pathogens from other types of specimen	Number Positive
B. anthracis	
Y. pestis	

KEY AREAS FOR SUPPORT

1. Support for automation of 8 Hospital patient management through Electronic Health Records
2. Support in procurement of ICT equipment (Laptops, Desktop computers, Hard drives)
3. Developing Health Information physical infrastructure especially for the 8 Hospitals
4. Capacity building in data analytics
5. Support in performance reviews
6. Support in development of annual work plan, Annual performance report, Health summit and bulletin


HARAMBEE


THE COUNTY GOVERNMENT OF GARISSA
KENYA