Republic of Rwanda

Ministry of Health

ANNUAL HEALTH SECTOR PERFORMANCE REPORT

FISCAL YEAR 2021-2022

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ACRONYMS AND ABBREVIATIONS

AU:	African Union
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	Ante Natal Care
ART	Anti-Retroviral Treatment
BCC	Behavioural Communication and Change
CBHI	Community Based Health Insurance schemes
CHUB	Butare University Teaching Hospital (Teaching Hospital)
CHUK	Kigali University Teaching Hospital (Teaching Hospital)
CHW	Community Health Worker
FSW	Female Sex Worker
CVD	Cardio Vascular Disease
DHS	Demographic and Health Survey EAC: East African Community
EMR	Electronic Medical Records
EMTCT	Elimination of Mother to Child Transmission EU: European Union
FP	Family Planning
GBV	Gender Based Violence
GFATM	Global Fund for AIDS, TB and Malaria (GF)
GoR	Government of Rwanda
HC	Health Centre
HF	Health Facilities
HIV	Human Immuno-Deficiency Virus
HMIS	Health Management Information System
HP	Health Post
IRS	Indoor Residual Spraying
JANS	Joint Assessment of National Strategies
KFH	King Faisal Hospital
LLIN	Long Lasting Impregnated (Bed) Nets
MC	Male Circumcision
MDA	Mass Drug Administration
MH	Mental Health
MIGEPROF	Ministry of Gender and Family Promotion
MINECOFIN	Ministry of Finance and Economic Planning

MoH	Ministry of Health
NCD	Non-Communicable Diseases
NRL	National Reference Laboratory
NTD	Neglected Tropical Diseases
NISR	National Institute of Statistics of Rwanda
NST	National Strategy for Transformation
PBF	Performance Based Financing
PLWHA	People Living with HIV and AIDS (see PVVIH)
PMI	Presidential Malaria Initiative
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
QA	Quality Assurance
QC	Quality Control
RBC	Rwanda Biomedical Centre
RCHC	Rwanda Centre for Health Communication
RDT	Rapid Diagnostic Tests (for Malaria)
RH	Reproductive Health
RMNCAH	Reproductive Maternal, Neonatal, Child and Adolescent Health
SMM	Senior Management Meeting
STH	Soil Transmitted Helminths
STI	Sexually Transmission Infections
TB	Tuberculosis
TWG	Technical Working Group
UN	United Nations
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USD	US Dollars
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

FOREWORD

The Ministry of Health reviews the annual performance of the health sector every year in order to assess progress on agreed outputs and come up with strategies and recommendations on how to improve health care service delivery. The Annual Health Sector Performance Report highlights the key achievements that have been registered by the Health Sector for the period of July 2021-June 2022 against the annual work plans as well as the overall health sector performance and the annual targets of the HSSP IV key performance indicators. It focuses on the key areas of interventions of the HSSP IV namely the Essential Services, coverage of essential health interventions, health security, health systems, and monitoring and evaluation.

Our health services have been designed with our patients at the centre, with the publication of each Annual Health Sector Performance Report, we are on the look-out for solid evidence about how those services have become more efficient, effective, accountable and responsive on how the health of our people has improved. During the Fiscal Year 2021-2022 the performance has significantly increased, in many aspects, including strategic planning, health systems strengthening, diseases prevention and control, health financing and health services delivery. The Ministry of Health recognizes the contributions of all stakeholders including Health Development Partners, academia, the Civil Society Organizations, the Private Sector and the Community in the achievement. Improvements in performance were made possible by the commitment of all health workers in the public and private sector, working under sometimes difficult conditions.

I would also like to commend the strong partnership and collaboration with all stakeholders across the year when the whole world had to respond to the COVID-19 pandemic. For the next Financial Year of 2022-2023, we will strive to continue implementing the unfinished HSSP IV agenda. We shall continue to focus on the challenges that we are still facing as a nation and roll them back putting more efforts on programs and high impact interventions that consider evidence based and data driven delivery approach as meant for the improvement of quality health services provided to the Rwanda population.

We are in this together and the best of ourselves is yet to come.

30/05/2023

MINISTRY OF HEALTH

Dr. Sabin NSANZIMANA
Minister of Health

EXECUTIVE SUMMARY

The Annual Health Sector Performance Report (AHSPR) for fiscal year (FY) 2021-22 is the 5th annual report series of Health Sector Strategic Plan -HSSP-IV. It documents the progress made on the implementation of commitments of the Ministry of Health, its agencies and development partners. The report quantifies the health services delivered at all levels of the system and compares the actual sector achievements against the targets of the HSSP IV and annual plan. The AHSPR highlights the major achievements and challenges of the health sector in the FY organized under the six HSSP-IV Strategic Themes: (i) Essential services across the life course, (ii) Coverage of essential health interventions, (iii) Assuring health security, (iv) Health systems inputs and actions, (v) Health stems outputs, and (vi) Monitoring and evaluation. Several initiatives were applied during the FY focusing on increasing service utilization for Maternal, Neonatal and Child Health (MNCH) services, prevention of communicable and non-communicable diseases, and assuring health security.

The MNCH indicators achieved in FY 2021-22 included an increase in coverage of pregnant women attending ANC within the first trimester, deliveries attended by skilled health personnel, and postnatal care coverage. However, there was a high drop-out rate in PNC services for mothers and new-borns. The majority of women utilizing ANC services were screened for malnutrition and HIV and provided with iron and folic acid and LLINs.

47% to 45%
ANC 4th Visit

ANC coverage (4th visit) dropped and 51% HSSP4 target not achieved.

85% to 89%
Deliveries at HFs

70% to 93%
PNC 4th Visit

PNC 'dropped-out' from the 93% first check-up to 62% fourth check-up.

Rwanda has a comprehensive vaccine schedule for children under five years, with a decline in immunization coverage observed for several vaccines in the 2021-2022 fiscal year.

This includes pentavalent 3 vaccine and other vaccines at the same age, first measles and rubella vaccine at 9 months of age, as well as for the percentage of fully immunized children at 15 months of age. The report also notes a drop-out between the first and subsequent doses of certain vaccines, such as Pentavalent doses 1 and 3, and between the two doses of Measles/Rubella.

97% to 95%
Pent 3 Vaccine

99% to 92%
1st Dose MR Vaccines

98% to 86%
MR full Vaccines
Vaccination coverage general dropped

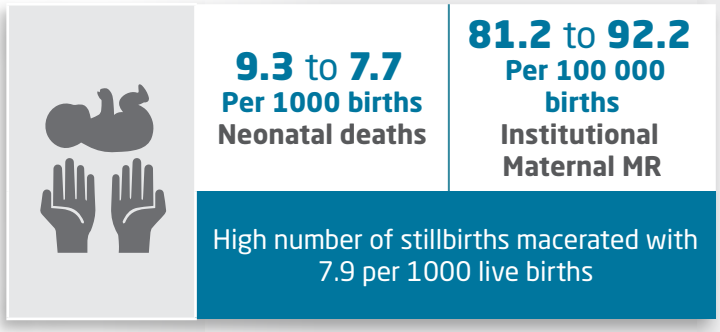
In the fiscal year 2021-22, the national screening for nutritional status coverage increased from 72% to 89% among children aged 6-59 months. The Mother and Child Health week, held in November 2021 and May 2022, had a high coverage rate of 93% for provision of Vitamin A and 97% for deworming among children.

93%
Vitamin A

97%
Deworming

72% to 89%
Nutrition Screening for children aged 6-59 months increased

Despite the achievements in MNCH services, the impact indicators still require more efforts to achieve the SDG targets. There was a decrease in neonatal deaths within seven days, but perinatal mortalities were still high with a high number of stillbirths. The maternal mortality rate was also higher than previous years, with a high number of maternal deaths occurring. Additionally, the quality of care during labor and delivery, particularly during and after C-section, remains a challenge.



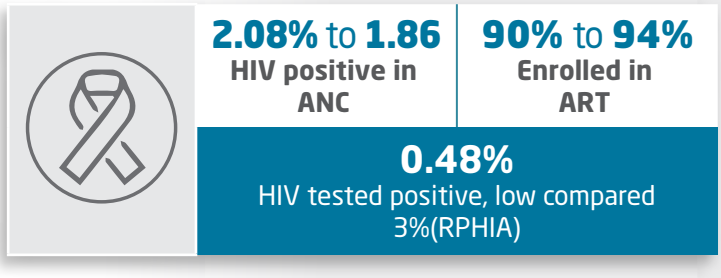
The Modern Contraceptive Prevalence Rate (mCPR) increased from 56% in FY 2020-21 to 59% in FY 2021-22, with the introduction of the new injectable method Sayana well received by users. Implanon and Jadelle remained the most preferred contraceptive methods.

The performance on essential health services coverage, which includes the prevention and control of infectious diseases, the strategies to make Neglected Tropical Diseases (NTD) not a public health issue in Rwanda by 2024, the reduction of the incidence of NCDs and injuries, and the early identification and treatment of causes of preventable disabilities are also major parts of this report.

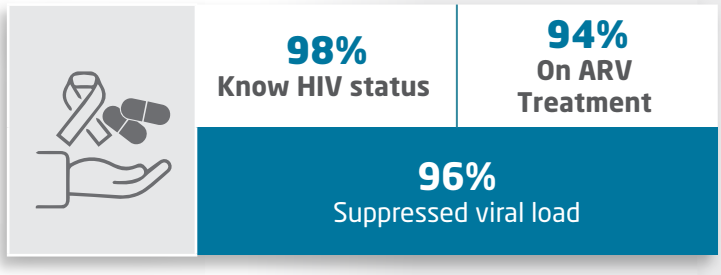
There is a continued effort to fight against Sexual and Gender Based Violence (SGBV) in Rwanda. As a result, a total of 38,066 GBV victims reported to the health facilities. Of these 51% were victims of sexual violence, 40% were victims of physical violence and of all victims 44% were under 18 years of age.

According to the "Rwanda Population-based HIV Impact Assessment (RPHIA 2019)", the adult HIV prevalence is estimated at 3.0% (2.0% in males and 3.7% in females) and the HIV incidence is at 2.6% among adults aged 15-49years.

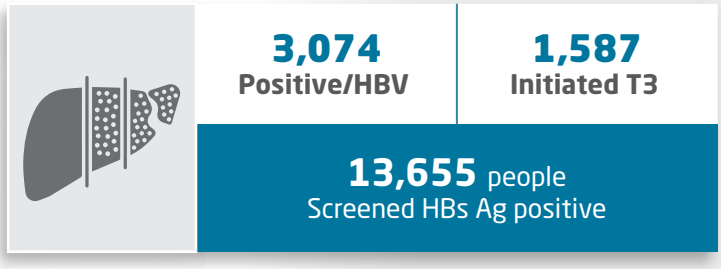
The report states that in FY 2021-22, there were a total of 2,286,931 HIV tests recorded through HCT services, with an overall positive yield of 0.48%. The HIV prevalence among pregnant women attending antenatal care decreased from 2.08% in FY2020-21 to 1.86% in FY2021-22. The number of People Living with HIV (PLHIV) ever enrolled showed a linear increase, and current ART coverage increased from 90% to 94.6% in the same period.



Furthermore, Rwanda is on track to achieve the 95-95-95 goals by 2030, according to the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates of 2022, 98% of the 227,134, and of those who knew they were living with HIV, 94% were on treatment, with 96% having a suppressed viral load (<1000 copies/ml).

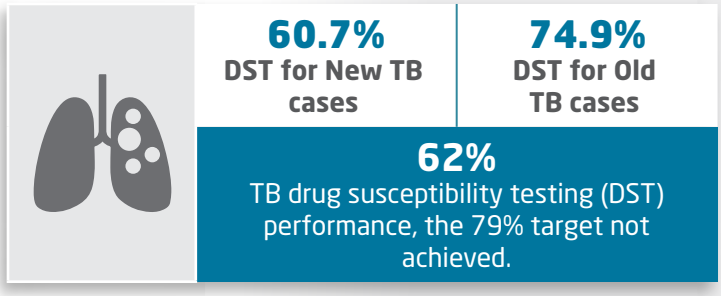


In the prevention and control of Viral Hepatitis, 882,243 people screened for HBV during this reporting period in all Districts. Of those 13,655 people who were screened HBs Ag positive, 3,074 were confirmed positive after HBV viral load testing and 1,587 were eligible and initiated the treatment.

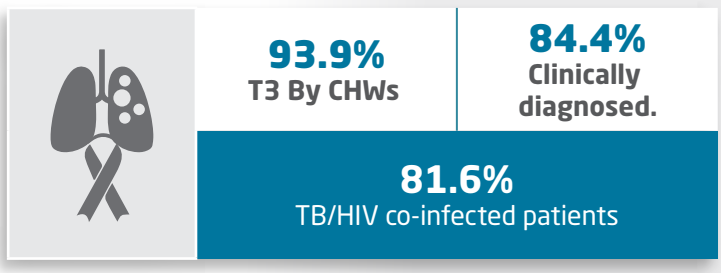


Rwanda has made significant progress in detecting and diagnosing tuberculosis (TB) in line with the World Health Organization's goal of ending TB by 2035. Over the reporting period, more than 126,000 TB presumptive cases were identified, with over half referred by community health workers. Among these, over 5,500 all TB cases were diagnosed, including 39 cases of RR/MDR-TB. Of these, 5% were children under 15 years old, and most cases were male with a male-to-female ratio of 2.6. Rwanda also conducted TB screening in high-risk groups, identifying over 3,600 positive cases from more than 22,000 people screened.

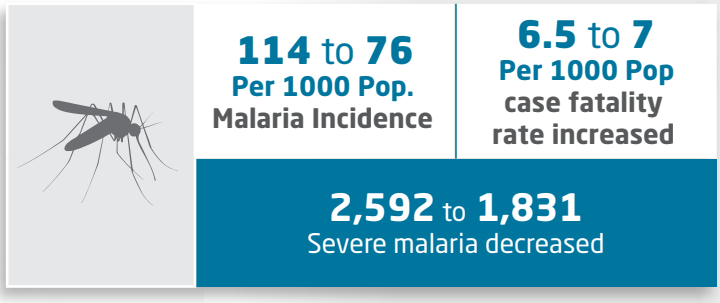
Regarding TB drug susceptibility testing (DST), the coverage was 60.7% and 74.9% respectively for new and previously treated TB cases. Considering bacteriologically confirmed TB cases, 75.8% performed DST and overall performance was 62%. The target of 79.0% was not achieved due to lack of maintenance of GeneXpert machines. A total of 3,431 out 5,538 TB cases notified during July 2021-June 2022 fiscal year, have benefited from drug susceptibility testing and 38 cases were rifampicin resistant



The TB treatment outcome showed 88.8% (4,838/5,455) success rate for susceptible TB. Furthermore, the treatment success rate for patients followed by CHW was 93.9% (2,174/2,314), for clinically diagnosed (CD) 84.4% (1,132/1,341) and for TB/HIV co-infected patients 81,6% (804/985).



Malaria remains a major public health burden even though there is a decrease of incidence from 114 cases per 1,000 populations in FY 2020-21 to 76 cases per 1,000 populations in FY 2021-22. In this FY, 1,831 cases of severe malaria were reported at the facility level compared to 2,592 reported in the previous FY, 71 malaria deaths were recorded following hospitalization with severe malaria, and the case fatality rate increased to 7 per 100,000 Malaria cases from 6.5 of the previous FY.



The performance is attributed to strong high impact intervention for Malaria prevention measure, surveillance and epidemiology as well as malaria control and management, including the 3,809,348 LLINs delivered to beneficiaries out of the total 7,377,378 LLINs procured via both the routine and mass distribution to ensure Universal Coverage

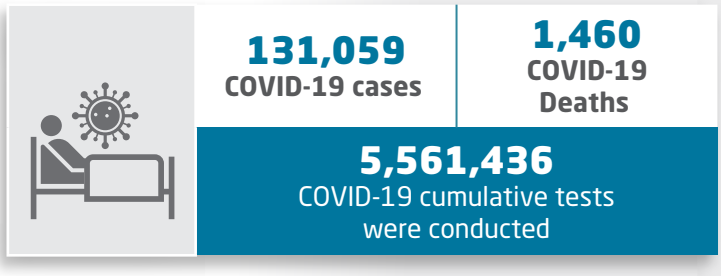
In Neglected Tropical Diseases (NTDs) control, Rwanda became the first country to eliminate r-HAT – a zoonotic sleeping sickness and was validated by the WHO. In the same response to NTDs, Rwanda became the first country to launch the Community Mass Drug Administration (MDA) including all adults at risks, and this shift resulted a high coverage in adults (>85%). Access to care for those people affected by Podoconiosis (Imidido) enabled to enroll about 250 people into care for appropriate care and treatment.

Reducing premature mortality from NCDs by 25% by 2025 by strengthening the prevention and control including early detection, care, and treatment at all levels have been one of the major focus areas of the FY. During the reporting period, a total of 2,452,805 (men aged 40 years and above and women aged 35 yrs and above) have undergone NCD community medical check-ups, which is 84% of the total eligible people (2,922,663). Among those screened 5% (115,259) of them were suspected positive and were further tested for diabetes and blood pressure to identify those with abnormal values and enroll them in NCDs care and treatment services. As part of the effort to fight cancer, a total of 142,432 women aged 30-49 undergone cervical cancer screening; and 169,302 were examined the breast cancer.

The number of patients with mental health has increased significantly from 110,498 patients in 2017-2018 to 343,086 patients in 2021-22. About 30,000 to 40,000 new cases consult for mental health care for the first time every year, out of which 74% received care at health centers, 19% received care at district hospitals and 1% patients with mental disorders received care and treatment in private health facilities during the FY.

The public health surveillance and emergency preparedness and response registered different key performances, including the surveillance of diseases that increased the total number of priority diseases under surveillance from 25 to 46 diseases through the adaptation of IDSR TG 3rd edition. Through the outbreak preparedness and response, different activities were implemented to respond to outbreaks of Avian Influenza and other highly pathogenic diseases. The unit also conducts trainings for sentinel site surveillance officers and focal points. Its key achievements include training on ILI/SARI and COVID-19 on surveillance in sentinel sites, routine surveillance of ILI/SARI/ARI and COVID-19 in Influenza sentinel sites, development of the national Ebola Virus contingency and 72-hours response plan and VHF technical documents.

Rwanda enhanced its preparedness and response by initiating a multi-sectoral coordination team. As of 30th June 2022, a total of 5,561,436 cumulative tests were conducted countrywide since March 2020, and total of 131,059 cases were identified. A total of 1,460 people died since 2020 and the overall incidence rate was low (below 5 cases per 100,000 population).



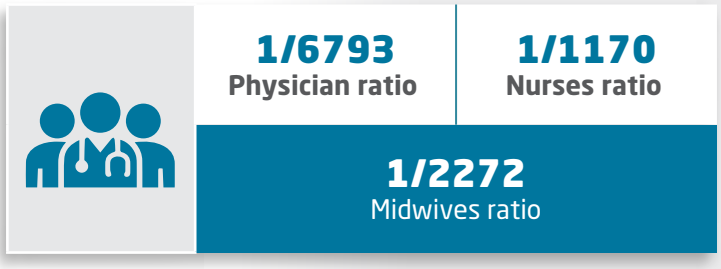
Currently the country has three COVID-19 treatment centers (TC), Nyamata TC, Kibuye TC, kibungo TC, and Kanyinya TC which are all equipped with the necessary equipment. In addition to the other prevention and control measures, COVID-19 vaccination campaign was rolled out throughout the country and over 96.6% people received second dose and 55.6% booster doses out of the total population 12 years and above.

In building a robust health system to ensure the provision of the highest possible quality essential health services and interventions, several activities have been implemented. The activities were to improve blood safety and availability, the National Reference Laboratory services, healthcare technology and management, and the health workforce, health financing, health infrastructure, health products and commodities, and optimizing the use of research and data.

An effective blood transfusion service is one of the essential components of a good health care system. During the FY, a total of 1,591 blood collection sessions were conducted in 5 fixed and 662 mobile collection sites countrywide and a total of 73,762 blood units have been collected.

Health services are offered by the public and private health facilities organized at different levels as per the country's standards. There are a total of 2,067 public and private health facilities, out of which 86% (1,788) are public facilities. There are investments in construction of new health facilities and expansion of services including availing water and electricity supply to ensure service availability and readiness. However, there are 12 Health Centers (2.3% out of the total) and 585 Health Posts (52% out of the total) that do not have access to permanent water supply system; and 3 Health Centers (0.5% out of the total) and 403 Health Posts (33% out of the total) with no access to electricity.

The continued investment to develop HRH to avail adequate skills and professional mix and as well as to ensure equitable distribution has been the focus of the reporting period. By the end of the FY, there were a total of 1,991 doctors (Ratio:1/6793), 11,325 nurses (Ratio:1/1170) and 1,654 midwives (Ratio:1/2272) providing health care services all over the country.



Among the prioritized HRH focus areas, developing a new program to fill the significant service gap, especially the tertiary care, has been successfully launched with 13 programs at the University of Rwanda while 3 more are still in the development process. Among the launched programs are 7 subspecialty programs, 4 residency programs, 1 master's and 1 PhD program.

The availability of quality, affordable and efficacious medicines, and medical products for all Rwandans is one of the major strategic directions of the health sector, including the protection of the public health by regulating health products, medicine, and foods. By the end of the fiscal year, the rate of health commodities availability has increased from 66% to 89% and the order fill rate increased from 55% to 80%.

In general, the efforts made to increase health service accessibility and quality of care showed an increase in health service utilization by reducing barriers that hinder people from accessing services. During the FY, about 20.6 million clients were provided outpatient services in all health facilities (public and private) as per the HMIS data, which is 1.59 outpatient visit per person per year.

To remove barriers to health care, the health sector has been working to enlarge public financing for health and maximize household financial protection through strengthening and sustaining health insurance. The overall coverage rate for the Social Health Insurance schemes is 93.3 %, which includes the Community Based Health Insurance (CBHI) covering 86.9%, the "La Rwandaise Assurance Maladie (RAMA)" scheme for civil servants and other private institutions employees covering 5%, the Military health insurance Scheme (MMI) covering 0.6 %, the private health insurance scheme for PHI schemes covering 0.7%, and the Employers and other insurances covering 0.1%.

In general, the overall implementation of activities at all levels of the sector has been guided by policies and different legal framework documents through effective leadership and governance, including the sector coordination mechanisms. As part of the coordination mechanism, the MOH held its regular Forward and Backward-Looking Joint Sector Review meetings, and different technical working group meetings, conducted supportive supervisions.

The governance has been informed by the sector monitoring and evaluation activities using data from the sector's routine HMIS (DHIS2), different survey results and research findings. As per the HSSP-IV MTR report, the sector has achieved near universal data coverage in terms of completeness and reporting from the routine data generated from the health facilities.

SUMMARY INDICATORS TABLE

This part highlights an overview of the overall sector performance indicators of FY 2021/22. It focuses on the performance indicators enshrined in the HSSP 2018 – 2024, NST1 and FY 2021-2022 Annual work plans from MOH different departments and affiliated agencies in the sector.

Table 1 Summary of key health sector performance indicators.

S/N	Key Health Indicators	Base-line 2018	FY 2020-2021	FY 2021-2022	Target 2024	Source of Data
A	**Health Status**					
1	Life Expectancy (LE) at Birth	66.2	66.2	68.6	NA	NISR
2	Neonatal Mortality Rate per 1,000 live births	20	19	7.7	15.2	DHS 2019-20
3	Infant Mortality Rate per 1,000 live births	32	33	33	22..3	DHS 2019-20
4	Under-5 Mortality Rate per 1,000 live births	50	45	45	35	DHS 2019-20
5	% of ANC coverage (4 standards visits)	44	47	45	51	MOH report
7	% births attended by skilled health Professionals	91	94	89	>90	HMIS
8	% new-borns with at least one PNC visit within the first two days of birth	19	70	93	35	HMIS
9	Modern contraceptive prevalence rate (mCPR)	48	58.4	59	60	HMIS
10	Total Number of Maternal Mortality per 100,000 live births	210	539	329	126	HMIS
11	% Children 12-23 months fully immunized	93	96	86	>93	HMIS
12	Prevalence of Malnutrition (stunting) among children under 5 years	38	29.8	33	19	DHS 2019-20
13	Teenage pregnancy rate (15-19 years)	7.3	5	5	<7	DHS 2019-20
14	Proportion of persons diagnosed with HIV infection receiving sustained ART	82.7	92.5	94	90	HIV Report
15	Antiretroviral therapy coverage			94	95	HIV Report
17	% on ART who are virally supressed			96	95	HIV Report
18	% PLHIV who know their status			98	95	HIV Report
19	TB Incidence per 100,000	58	58	58	31.8	TB Report
20	Treatment success rate (TSR) for all forms of TB cases (DS & DR-TB	80.4	88.2	88.8	>87	TB Report
21	Malaria incidence per 1,000 population	308	114	76	122	Malaria Report
22	% of NCD combined high risk factors in the population aged between 15-64 years	16.4	15	7.1	12	NCD Report
23	Cataract Surgical Rate (number of cataract surgeries per million population per year)	400	504.4	600.4	1000	NCD Report
24	Eye diseases morbidity rate at health facility level	3	2.5	2.5	>2	NCD Report

B	**Health System Inputs**					
25	% HFs with < 5% of medical products stock-outs	66	79	89	90	RMS Report
26	Percentage of Health centres without water	16	1	2.3	0	Admin Report
27	Practising Physician	1/10,055	1/8,247	1/6,793	1/7000	MOH report
	Practising Nurses	1/1,094	1/1,198	1/1,170	1/800	MOH report
28	Practising Midwives	1/4,064	1/2,340	1/2,272	1/2500	MOH report
29	Lab Technicians /pop ratio	1/10,500	1/6,401	1/7,253	1/7500	MOH report
C	**Health System outputs**					
30	Per Capita utilization of OPD		1.46	1.59	NA	HMIS
31	Annual Bed Occupancy Rate		39	38.4	NA	HMIS
32	Number of DH that achieve level two of the national accreditation process	0	0	11	50%	MOH report
33	Number of Provincial Hospitals achieve level three of the national accreditation process	0	0	0	4	MOH report

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CHAPTER 1:

INTRODUCTION

CHAPTER 1: **INTRODUCTION**

The Government of Rwanda (GoR), through the Ministry of Health, affiliated agencies and its development partners, are committedto achieving the health-related Sustainable Development Goals (SDGs), particularly those pertaining to maternal new born and child health. The end of FY 2021-2022 marks the Midterm review of the forth Health Sector Strategic Plan (HSSP IV) covering the period of 2018-2024. The Government's vision for health is

> ***"To have a healthy and productive population that contributes to the realization of Rwanda's development goals".***

The main objectives of this report are to:

- **Give an account of work done in 2021, both with regards to the response to the COVID-19 pandemic, as well as in terms of continuity of routine essential health services.**
- **Demonstrate accountability of the health sector.**

The health sector consists of all organisations, institutions, resources and people in the country, including Government Ministries, Departments and Agencies, and civil society and private sector actors. The Ministry of Health (MOH) acts to lead, coordinate and overseer the activities of the health sector. The Health Sector Strategic Plan (HSSP IV) 2018-2024 establishes the health sector strategic priorities and framework for guiding the work of all entities within the health sector, to achieve key national and global health targets.

The aim of this Annual Health-Sector Performance Report (ASPR) is give an account of progress made by the health sector in FY 2021-2022, towards achieving National and Global targets in key performance areas. The ASPR 2021-2022 development process was initiated in September 2022, building and expanding on the experience of previous years, and completed in November 2022. The working-group constituted of members from across the entities of the Ministry of Health (MOH), under the leadership of the Planning, M&E and Health financing department of the MOH. In particular, the report provides information on: (i) Essential Services Across the Life Course (ii) Coverage of Essential Health Interventions (iii) Assuring Health Security (iv) Health Systems: Inputs and Actions (v) Health Systems: Outputs (vi) Monitoring and evaluation.

The data used are primarily provided by various data-processing units, both quantitative and qualitative data were being used in the preparation of this report, whose primary source was the Health Management Information System (HMIS) aggregated monthly, as well as various service areas and health system supports (human resources, finance, etc.). Different teams reviewed data and wrote relevant chapters, followed by final compilation into this document.

The document was then shared with reviewers for inputs, before finalisation. The primary audience of the report are national policy makers and health service providers. It is also intended to inform legislators and public on work done by the health sector, utilisation of services by the population, and trends in health and wellbeing.

CHAPTER 2:

ESSENTIAL SERVICES ACROSS THE LIFE COURSE

CHAPTER 2: ESSENTIAL SERVICES ACROSS THE LIFE COURSE

The Rwandan Health Sector has implemented various plans, such as the RMNCAH, FP/ASRH, and MNCH Strategic Plans, to achieve the SDG, HSSP IV, and NST1 targets. The current HSSP IV has adopted the life course approach to deliver services based on an individual's past and present experiences shaped by their socio-economic and cultural context. The critical areas of focus include pregnancy, early life and children, adolescent sexual and reproductive health, and healthy ageing and palliative care. While there has been an improvement in the sector's performance in these critical areas compared to the previous fiscal year, indicators such as malnutrition, maternal mortality rate, neonatal mortality rate, and infant mortality rate still need significant improvement to achieve the HSSP IV targets by 2024. The report presents the status of key MCCH indicators for the Financial Year 2021/2022 and related achievements.

2.1. Pregnancy, early life and children

Improving the health of mothers and new-borns is a priority for HSSP IV and NST1 in Rwanda, and several high-impact and cost-effective initiatives were implemented during FY 2021-2022 to increase service utilization for Maternal, Neonatal, and Child Health (RMNCAH) services. The interventions and strategies implemented in the areas of pregnancy, early life, and children showed promising results. The WHO recommends comprehensive quality healthcare throughout an individual's life course, starting from conception, to eliminate preventable maternal, neonatal, and child deaths and promote well-being. However, there was a drop in utilization of services in 2021 and early 2022, which may be partly due to reduced availability of health services, staff redeployment to COVID-19 control, and public health measures.

2.1.1. Maternal and Neonatal and Child Health

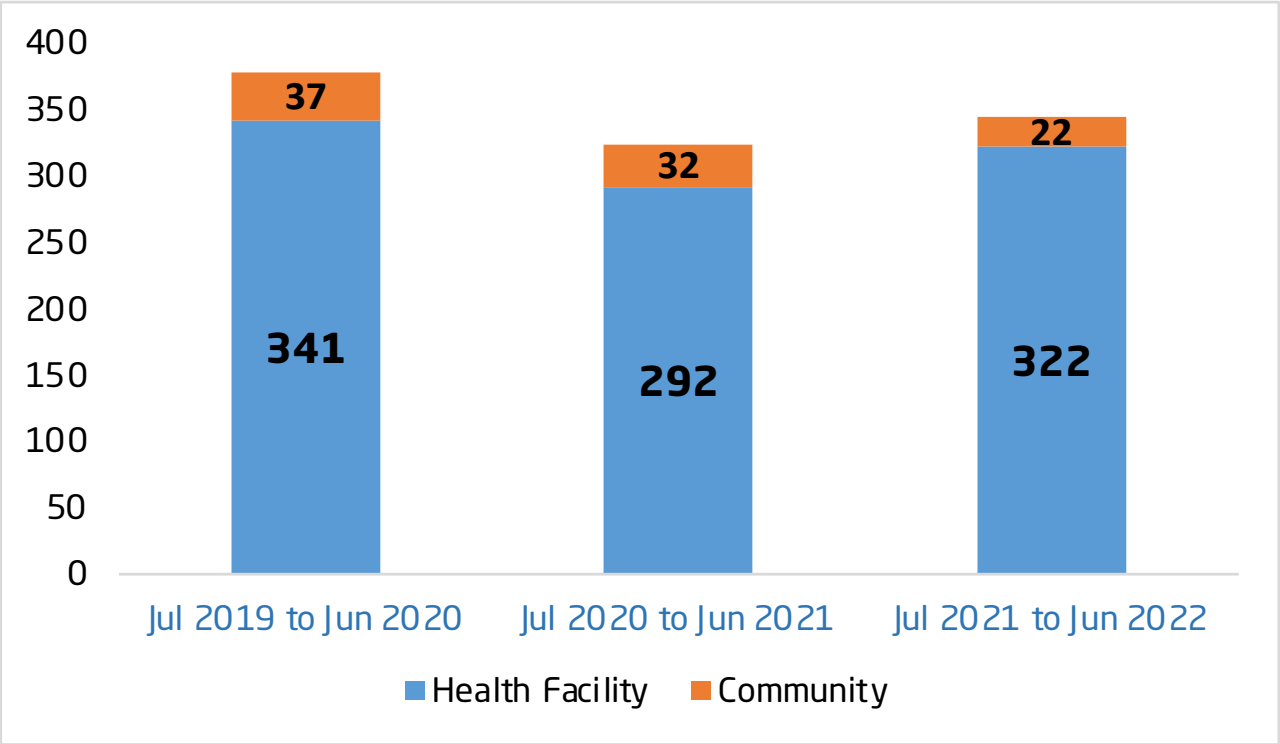
This section highlights the MCCH key indicators against the national guiding documents like HSSP IV and NST1. In FY 2021-2022 the coverage of MNCH services continued to improve for most of the key indicators. Better achievements were observed in the percentage of Antenatal care coverage with 4 standards visits which increased from 47% to 45%, births attended by skilled health professionals increased from 85% to 89% compared to the FY 2020-2021; and Modern contraceptive prevalence rate (mCPR), which also increased from 56% to 59% compared to the last FY of 2020-2021(Table 1). However, there was also an increase in maternal deaths in health facilities from 261 (81.2 per 100,000 live births) in 2020-21 to 322 (92.2 per 100,000 live births) in 2021-22 (Figure 1).

Table 2 Progress on MNCH Indicators, July 2021-June 2022

Pregnancy, early life and children	Target June 2022	Baseline by June 2021	Progress by June 2022
Percentage of births attended by skilled health professionals.	>90	85	89
Antenatal care coverage (4 standards visits)	47	47	45
Percent of new-borns with at least one PNC visit within the first two days of birth	25	70	93
Modern contraceptive prevalence rate (mCPR)	54.6	56	59

Source of data: RHMIS 2022

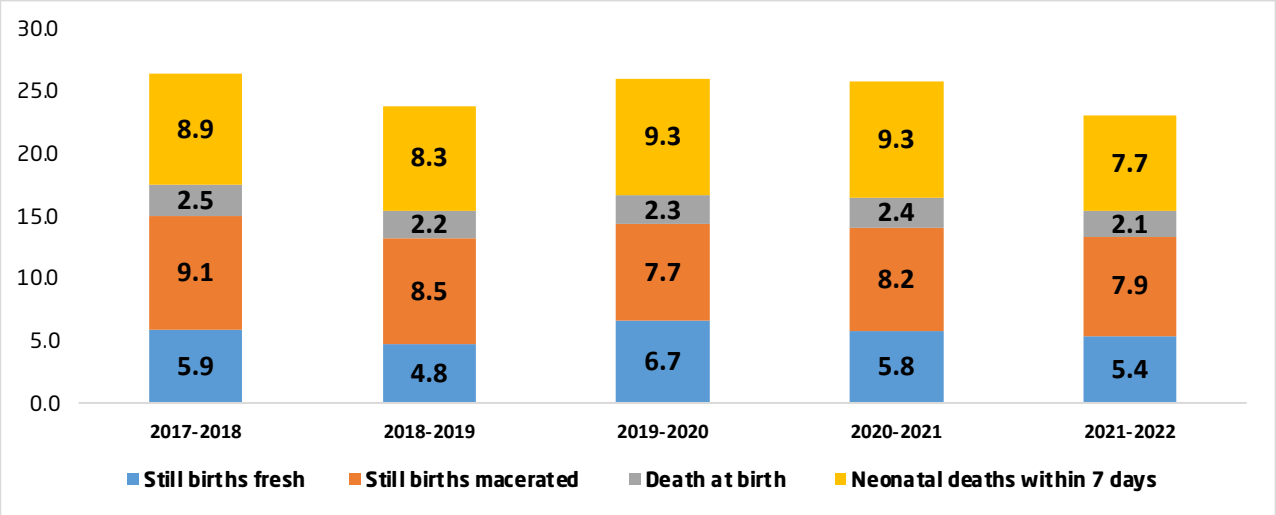
Figure 1: Number of Maternal deaths reported at HF and community 2019/20- 2021- 2022



In FY 2021-2022, a total of 344 maternal were reported countrywide through HMIS including 322 among them occurred in health facilities and 22 in the community. There was an increase in maternal deaths in health facilities from 261 (81.2 per 100,000 live births) in 2020-21 to 322 (92.2 per 100,000 live births) in 2021-22.

The quality of care during labour and delivery, particularly during and after Caesarean Section (C/S), remain a challenge. Rwanda has a well-developed Maternal, Perinatal and Child Death Surveillance and Response (MPCDSR) strategy and near miss audits as well as trainings and mentoring on correct use of ICD-10 definitions and conducting near miss and death audits.

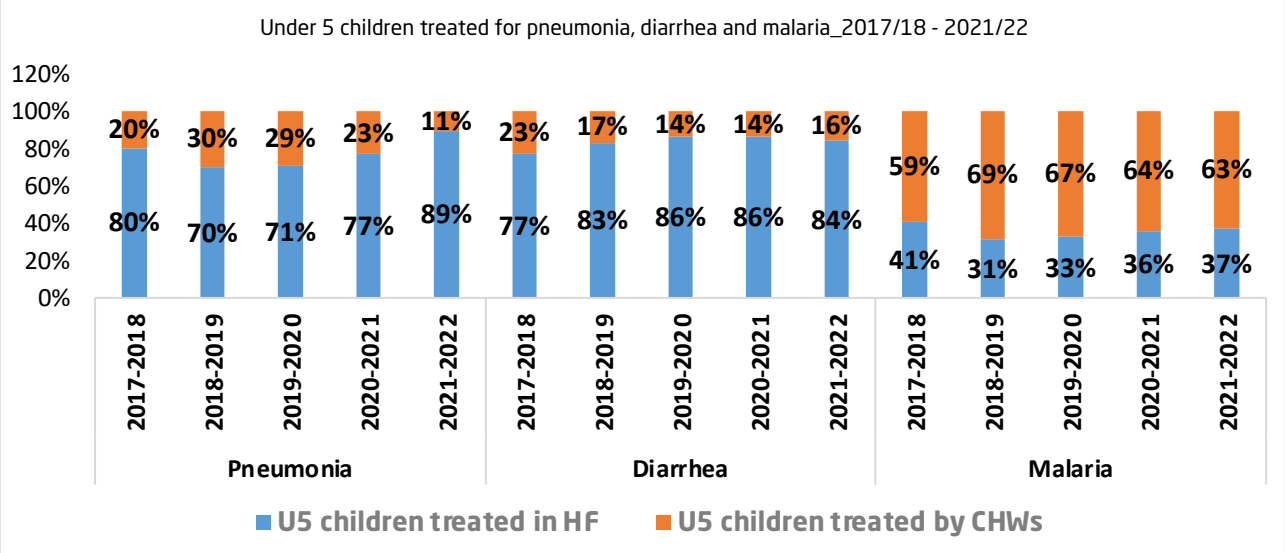
Figure2: Perinatal mortality per 1000 births by category, 2017/18 - 2021/22



Source of data: RHMIS 2022

The perinatal mortality rate (PMR) includes still births and neonatal deaths showed an improvement compared to the previous year. Among the perinatal mortality per 1000 live births, a high number of still birth macerated was noted to 7.9 per 1000 live births. The biggest and most consistent decrease is in neonatal deaths within seven days which dropped from 9.3 to 7.7 per 1000 live births.

Figure 3: Under 5 children treated for pneumonia, diarrhoea and malaria, 2017/18 – 2021/2022



Source of data: RHMIS 2022

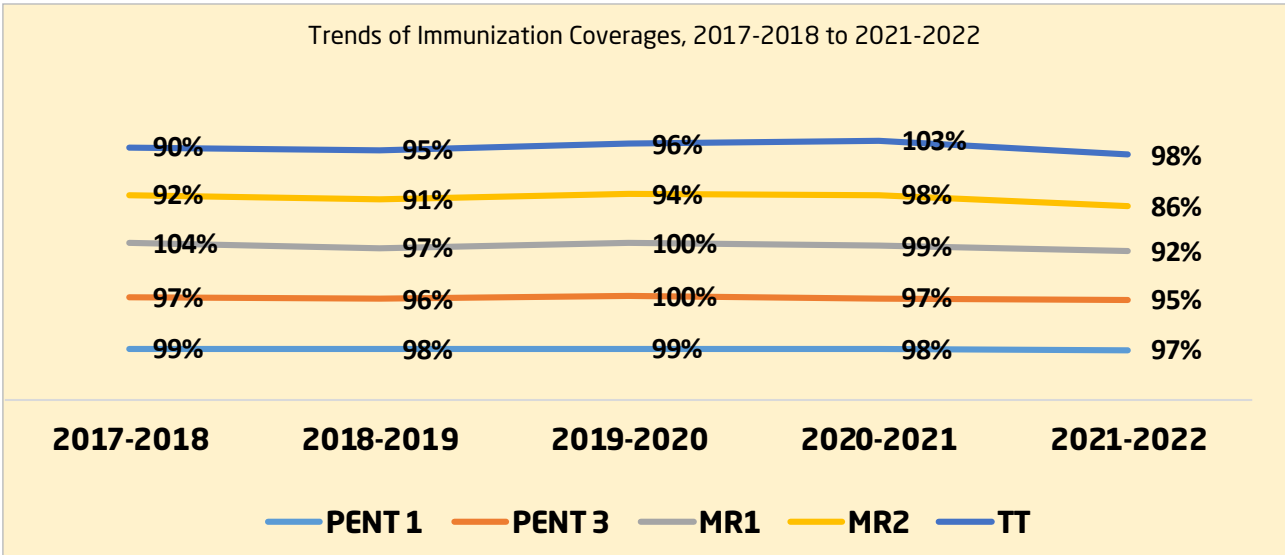
In FY 2021-2022 the majority of Under 5 children treated the most common causes of morbidity for pneumonia, diarrhoea was treated at the Health Centre or Health Post, though the FY 2021-2022 showed an increase from 14% to 16% for diarrhoea and decline from 23% to 11% for Pneumonia resulted from recurring stock out.

On other hand for Malaria many children are seen and treated by CHWs consistently of the past five years with 63% during the FY2021-2022. This have been achieved due to effort that all CHWs are trained, mentored, supervised and equipped to provide screening and treatment for malaria, diarrhoea and pneumonia for children under the age of five in their catchment areas.

2.1.2. Expanded Program for Immunization (EPI)

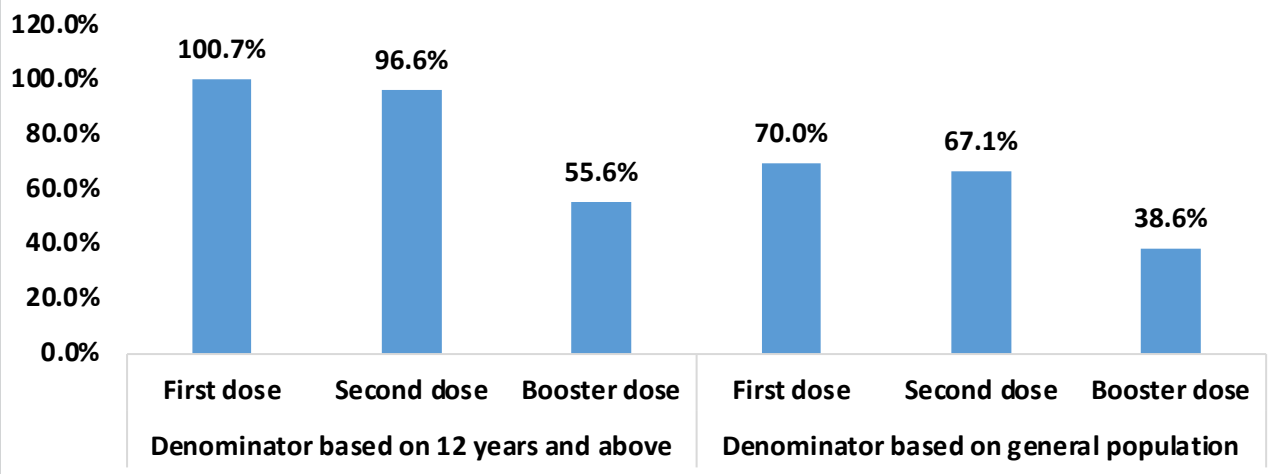
The Expanded Programme on Immunization (EPI) aims to ensure that all children and high-risk groups are fully vaccinated with high-quality and effective vaccines against target diseases according to recommended strategies. The EPI's objectives include increasing access and demand for immunization services, ensuring the availability of potent and effective vaccines, building EPI management capacity at all levels, monitoring disease trends and program performance, and formulating policy, standards, and guidelines. While 96% of children aged 12-23 months were fully immunized according to 2019-2020 DHS data, there has been a general decline in immunization coverage in Rwanda, with a noticeable decline in coverage for Pentavalent 1, Pentavalent 3, Measles and Rubella 1, and Measles and Rubella 3 vaccines in the FY 2021-2022 (See figure 4).

Figure 4: Immunization coverage (HMIS 2017-2018 to 2021-2022)



Source of data: RHMIS 2022

Figure 5: COVID-19 vaccination coverage by 30th June 2022



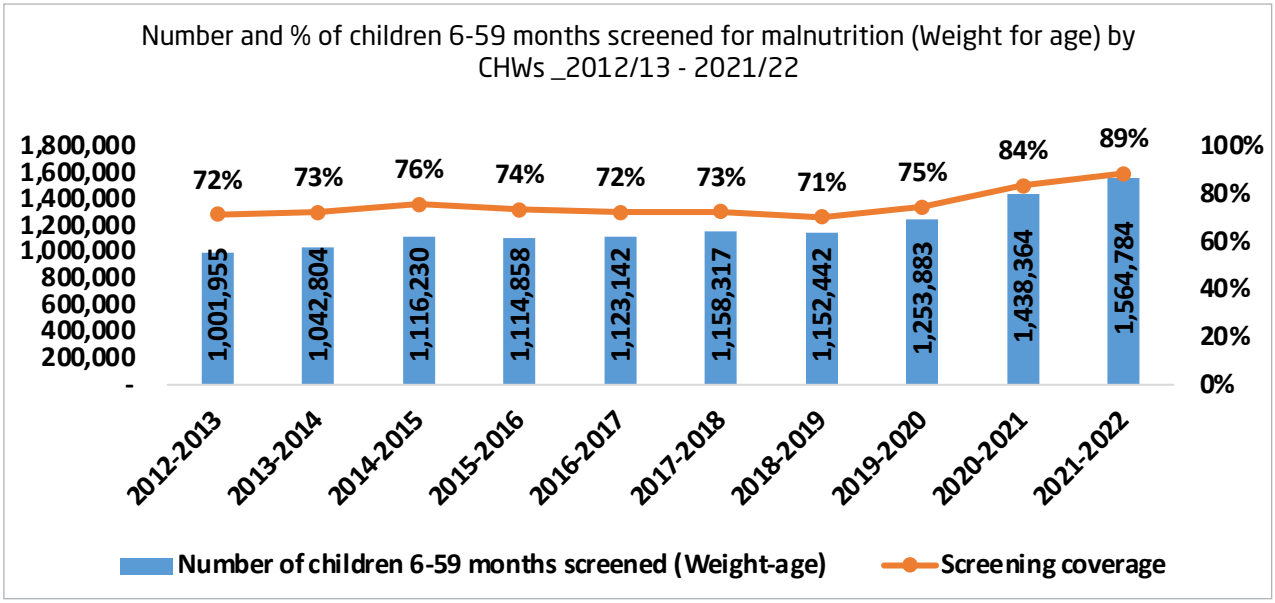
Source of data: RHMIS 2022

Figure 4 above showed that during FY2021-2022, a total number of 9,130,139 (100.7%) people had received 1st dose of COVID19 vaccine; a total number of 8,755,611 (96.6%) people had received second dose of COVID19 vaccine and 5,042,098 (55.6%) people had received a booster dose. These coverages are calculated using target population of 12 years and above. Coverages for general population are as follows: first dose is 70%, second dose is 67.1% and third dose is 38.6%.

2.1.3. Nutrition

In order to reduce stunting among under 5 years' children many interventions were put in place including screening for nutritional status using weight-for-age measurement for earliest detection of malnutrition of all forms. Hence CHWs were equipped to provide this service at village levels. The national screening for nutritional status coverage among children aged 6-59 months increased from 72% in FY 2012-2013 to 89% in FY 2021-2022(Figure 6).

Figure 6: Trend children 6-59 months screened for malnutrition by CHWs 2012-2013 to 2021-2022



Source of data: RHMIS 2022

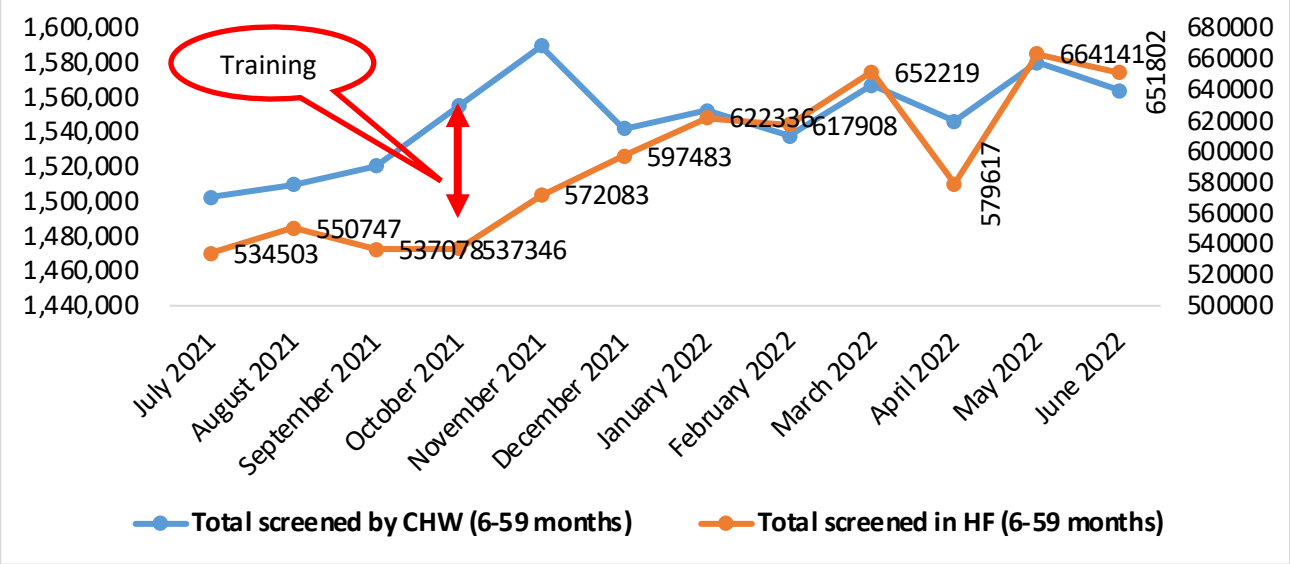
2.1.4 Community Health

The HSSP IV prioritizes four interventions to improve the performance of the Community Health Programme (CHP) in Rwanda, including strengthening coordination, improving the supply chain, enhancing the capacity of Community Health Workers (CHWs), and strengthening the management of CHWs cooperatives. The CHP activities focus on preventing and reducing malnutrition, improving maternal and new-born health, promoting adolescent and sexual reproductive health, and providing integrated community-based case management and supply chain management. The government of Rwanda sees the CHP as essential for expanding primary health care and achieving Universal Health Coverage (UHC). Despite COVID-19 related challenges, most core essential services continued to be delivered. In the FY 2021-2022, the following achievements were registered and they are in line with the above priority interventions:

1. **Nutrition activities included:**
   - Trainings on Nutrition measurement (1,064 health providers) and nutrition package (123 health centre managers);
   - Capacity development of CHWs to disseminate the additional guidelines for prevention and management of moderate acute malnutrition, and to review the performance of nutrition indicators.

The training on nutrition measurement resulted in an immediate increase in growth monitoring in the communities across Rwanda (see figure 7 below).

Figure 7: # children ages 6-59 months screened for malnutrition by CHWs and in HC (2021- 2022)

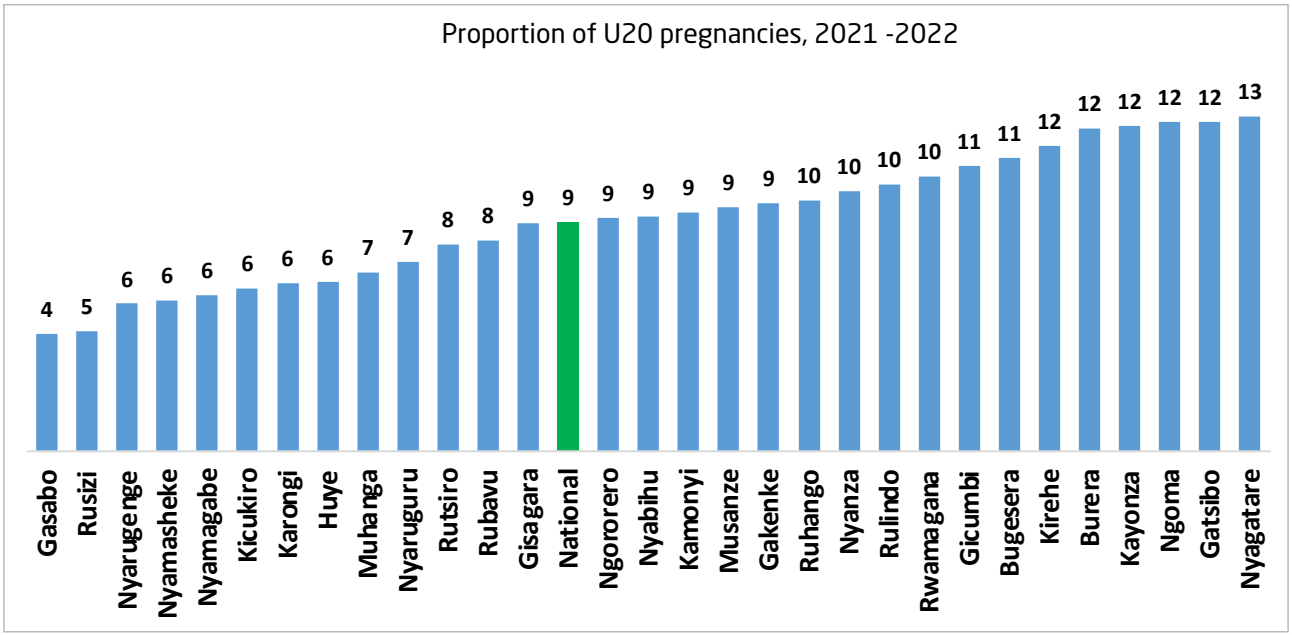


2. **Community based provision including introduction of the CHWs new polyvalent model activities included:**
   - Three stages of capacity building were conducted including National Level Master Training, Training of Trainers for 1310 CHWs Supervisors and key support staff from Nyamasheke, Nyabihu, Gakenke, Nyamagabe, Nyaruguru, Nyamasheke, and Nyanza this followed by a cascade training for all CHWs in the above districts that covered:
     - ◊ The comprehensive package Training of 2631 CHWs in Nyamasheke District, 1876 CHWs in Nyabihu District, 2468 in Gakenke District, 2144 CHWs in Nyamagabe District, 1325 in Nyaruguru District, 1639 in Nyanza District.
3. Supply Chain activities included the Quarterly supply review plan, the Implementation of procurement and supply plan, Monthly stock analysis of three essential commodities showed long period of stock out especially Amoxilicin 125mg. In FY 2021-2022 we managed to avail 2.34 million doses and for Zinc the available supplies were sufficient though Misoprostol stock out is still an issue but shipment is imminent.
4. **Coordination and ongoing support activities included:**
   - Community Health coordination meetings and supportive supervision for 14,391 CHWs in 14 districts (Gicumbi, Kamonyi, Muhanga, Ngororero, Musanze Gasabo, Kicukiro, Nyagatare, Ngoma, Gatsibo, Rwamagana, Bugesera, Huye and Rubavu).
   - Continuous support, mentorship and supervision for, ICCM, CBMNH, CBP-FP and Malaria implementation by strengthening the capacity of CHWs to provide quality maternal neonatal and child services in 14 districts.
5. **Other Community Health Program activities to name the few included:**
   - Preparation of Rwanda Policy Dialogue for CHWs.
   - Procurement of registers and reporting forms.
   - Community Health Program Business Investment Case
   - CHWs Trainees and Trainers Manuals

2.2 Adolescent Sexual and Reproductive Health (ASRH)

The proportion of under 20-year-old women registered in ANC services for 2021/2022 of ANC registrations of all ages in Rwanda was 9%. 12 Districts reported higher than national proportion (See figure 8).

Figure 8: Proportion of under 20 years old pregnant women registrations in ANC by 2021-2022



In FY 2021-2022, the ASRH activities in Rwanda focused on supervision, mentorship, training and awareness-raising. The supervision and mentorship of ASRH activities were conducted in several districts, while training sessions included the training of healthcare providers on the integrated adolescent health training manual and cascade of trainer of trainers. Awareness-raising activities involved the distribution of TVs and magazines, parent/adolescent communication sessions, mass media campaigns, and the promotion of the YAhealth digital tool. The ASRH awareness raising was also conducted at health centers and through outreach strategies on weekends.

2.2.1. Sexual and Gender Based Violence

Efforts to fight Sexual and Gender-Based Violence (SGBV) in Rwanda are being streamlined through the expansion of SGBV services at health centers, increased laboratory capacities for testing, and effective monitoring mechanisms for follow-up and social reintegration of victims. In the FY 2021-2022, 38,066 GBV victims were reported to health facilities, of which 51% were victims of sexual violence and 40% victims of physical violence. Additionally, 44% of all victims were under 18 years old. Activities targeting awareness-raising on SGBV were performed, including ongoing community sensitization for early presentation at IOSCs and efforts to improve data quality and use through weekly meetings, training, and monitoring. Management and counselling were provided to 38,059 GBV victims reported to health facilities during the same period (see figure 9 and table 7).

Figure 9: GBV cases reported by type and age group, 2021/2022

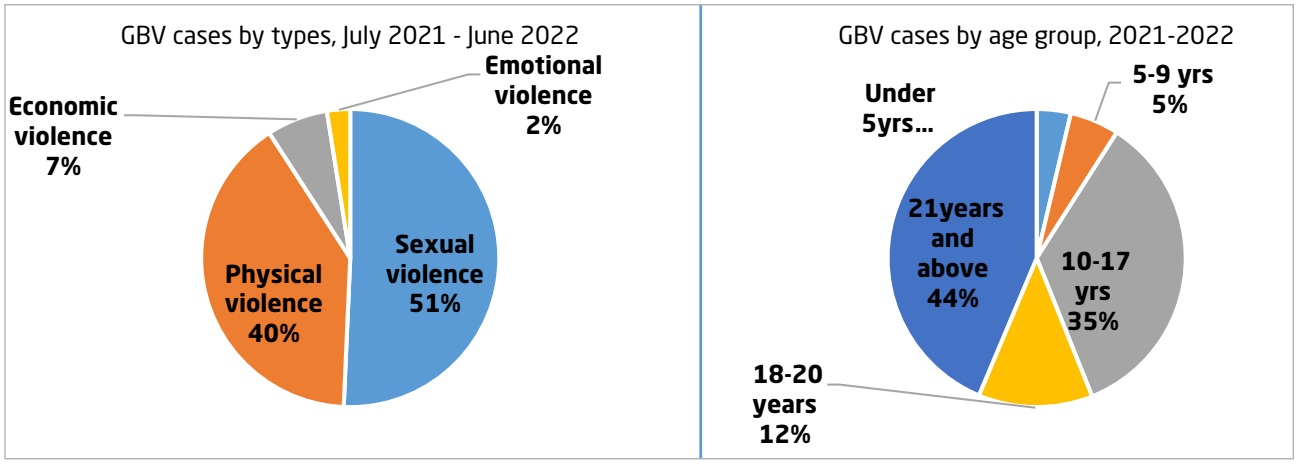


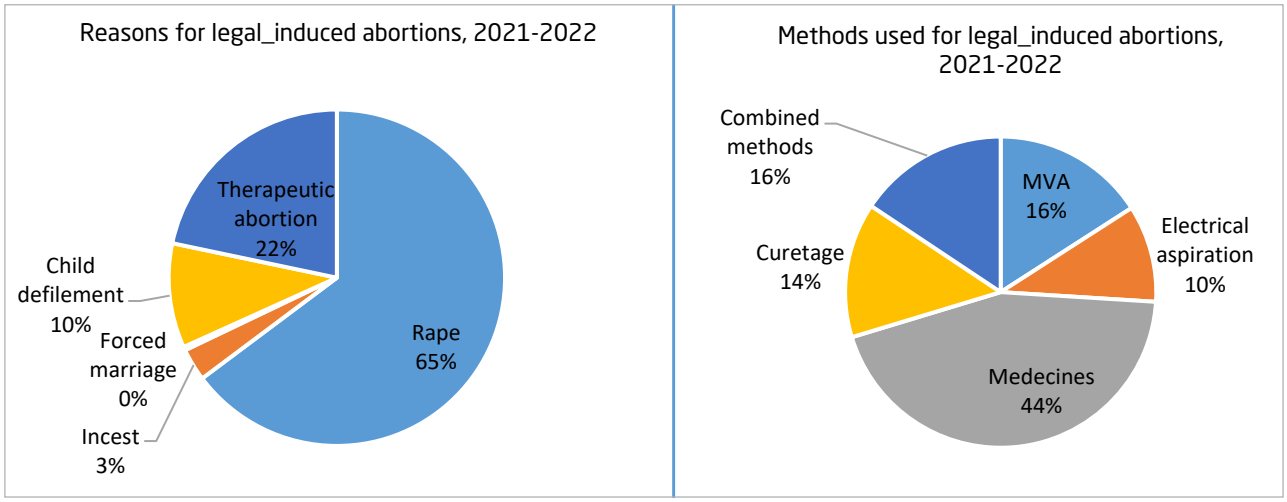
Table 3: Other GBV important informations_July 2021 to June 2022

Indicators	2020-2021	2021-2022
Total GBV victims	33,636	38,059
GBV victims with symptoms of physical violence	40.5%	40.2%
GBV victims with symptoms of sexual violence	52.4%	50.7%
GBV Victims with economic violence	5.5%	2.5%
GBV Victims with emotional violence	1.5%	6.6%
Female GBV victims	88.3%	89.0%
Male GBV victims	11.7%	11%
GBV victims referred to this facility by Rwanda Investigation Bureau	55.7%	48.6%
GBV victims referred to this facility by community health workers	7.4%	9.7%
GBV victim Deaths	43	27
GBV victims with irreversible disabilities due to GBV	70	113
GBV victims HIV+ seroconversion 3 months after exposure	72	106
GBV victims received emergency contraception within 72 hours	2,912	2,979
GBV victims received PeP HIV prophylaxis within 48 hours	3,825	3,798
GBV victims referred for care to higher level health facility	3,395	4,684

In the FY 2021-2022, 46% of GBV cases in Rwanda involved victims under 18 years of age.

The country's penal code was revised in 2018 to allow abortion only in cases of minors, rape, forced marriage, incest, and health risks. A total of 1184 legally induced abortions were reported in the same period, with 65% of them being due to rape. 44% of safe abortions were performed using medicines, and 16% were done using a combination of medical and surgical methods, with medicines and curettage being the most common methods used.

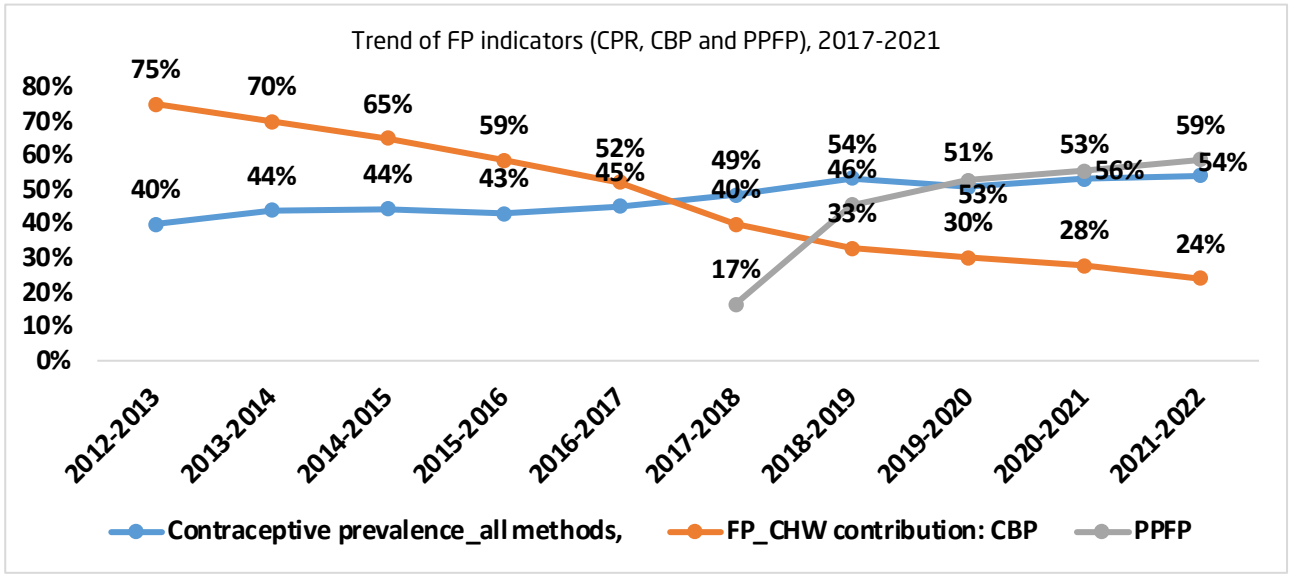
Figure 10: Legal abortions: Reasons for legal abortions and Methods used, 2021-2022



2.2.2. Family Planning (FP)

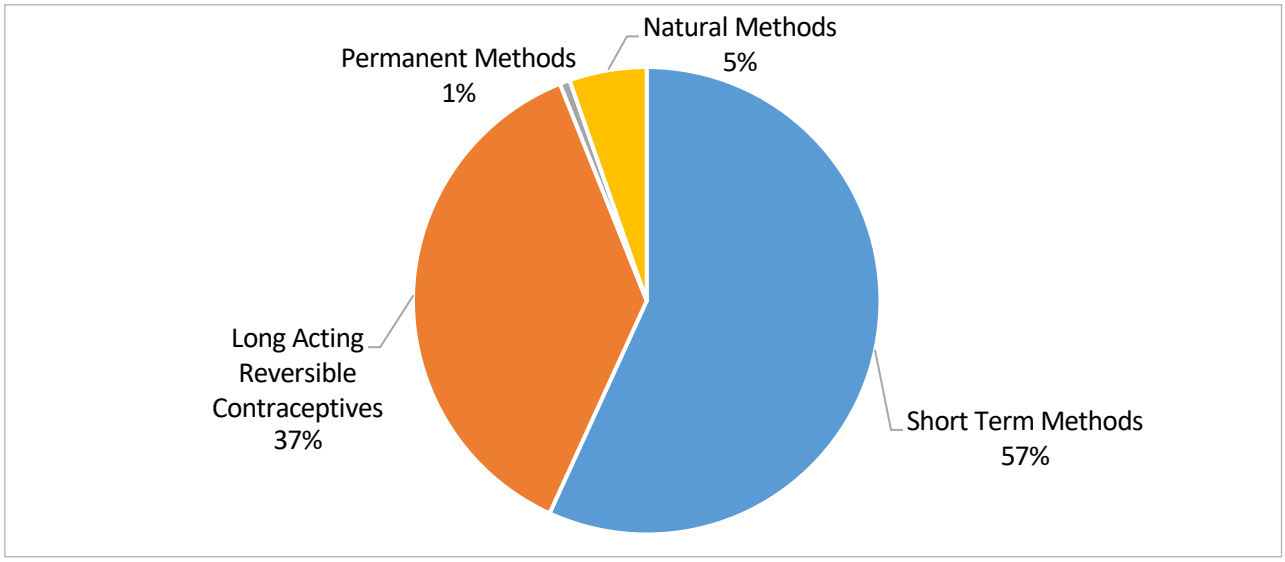
The DHS 2019-2020 reported that the Total Fertility Rate (TFR) in Rwanda decreased from 6.1 to 4.1 between 2005-2020, on other hand the current DHS 2019-20 revealed that the MCPR is at 58.4 however the unmet needs for family planning is 13.6. There is need to build capacity for provision of the range of contraceptive methods at the respective levels of care and ensure availability of the FP commodities for client satisfaction using innovative approaches.

Figure 11. Trend of FP indicators for CPR, CBP, and PPFP, 2017-2022



The contraceptive prevalence rate (CPR) in Rwanda has increased from 40% in 2012/13 to 54% in 2021/22, with postpartum family planning (PPFP) increasing from 17% in 2017/2018 to 59% in 2021/2022. However, the contribution of community health workers (CHWs) in follow-up of FP users decreased from 75% to 24% in the same period, and further investigation is required to understand this decline. The Ministry of Health has introduced PPFP in all health facilities to encourage mothers to take family planning methods after delivery, but faith-based health facilities and low reporting rates of private health facilities continue to affect the unmet need for FP, particularly in Kigali City.

Figure 12: Proportions of Couples accepting to use family planning method for the first time vs expected women aged 15-49 years 2021-2022



During FY2021-2022, health facilities reported new acceptors of family planning methods; which included 57% which chose short term methods, 37% chose Long Acting Reversible Contraceptives (LARC), 1% chose permanent methods and 5% chose natural methods. Many clients accepted the implants (35.5%) followed by pills and injectable.

2.3. Healthy Ageing and Palliative Care

According to World Health Organization recent report (WHO, June 2016), Multi-sectoral action for a Life Course approach in healthy ageing was recommended aiming to maintain the physical and social hazards of life during gestation, childhood, adolescence, young adulthood and midlife, as these experiences affect disease risk and health outcomes in later (adult) life. Patients and their families who are dealing with challenges brought on by life-threatening illness, whether they be physical, psychological, social, or spiritual, can benefit from prevention, care, treatment, rehabilitation and palliative care for NCDs by Health care providers who are equipped with capacity to provide appropriate care to the ageing population.

According to the World Health Organization (WHO), Healthy Ageing interventions have to be based on an integrated care for older people Realigning primary health care to respond to population ageing. Rwanda initiated the capacity building for five Medical Doctor in a clinical sub-specialty of Geriatrics as a medical field that deals with the care of the elderly and their needs, and gerontology as the medical field of ageing and its impacts on the population of 65 age patient in order to provide appropriate and comprehensive health care to the elderly. Among them one trained from France after completion was deployed in 2019 at Kigali University Teaching Hospital (CHUK), the second is trained from Belgium and is going to be deployed at Rwanda Military Hospital(RMH).

Under the National Strategy for Health Professionals Development (NSHPD) 2020-2030, the target is to build on those five geriatricians in order to start geriatrics subspecialty here in the country, as having medical personnel trained abroad was more expensive than domestically. Meanwhile the geriatrics course was included in medical academic curriculum is being provided to residency students in internal medicine.

On other hand the Ministry of Health through Rwanda Biomedical Centre/NCDs Division initiated NCDs community check-up at primary health care level to promote NCDs early detection in the community using a standardized

checklist. In FY 2021-2022; in total of 2,452,805 (men aged 40 years and above and women aged 35 years and above) have undergone NCD community medical check-up. This represents 84% of total eligible people (2,922,663) for community medical check-up.

During the Fiscal year 2021-2022, RBC has conducted different activities to improve quality palliative care and pain free service provision at different health facilities including the training of trainers on palliative care and pain free hospital initiative for hospital staff champions, strengthen the Implementation of the national NCD policy and strategy targeting the ageing group, beyond this in order to increase access to pain medications, around 9,112 bottles of 500ml (5mg/5ml) of oral morphine solution were produced at LABOPHAR, Huye and distributed to different health facilities.

CHAPTER 3:
COVERAGE OF ESSENTIAL HEALTH INTERVENTIONS

3.1. Infectious diseases

3.1.1. HIV and AIDS

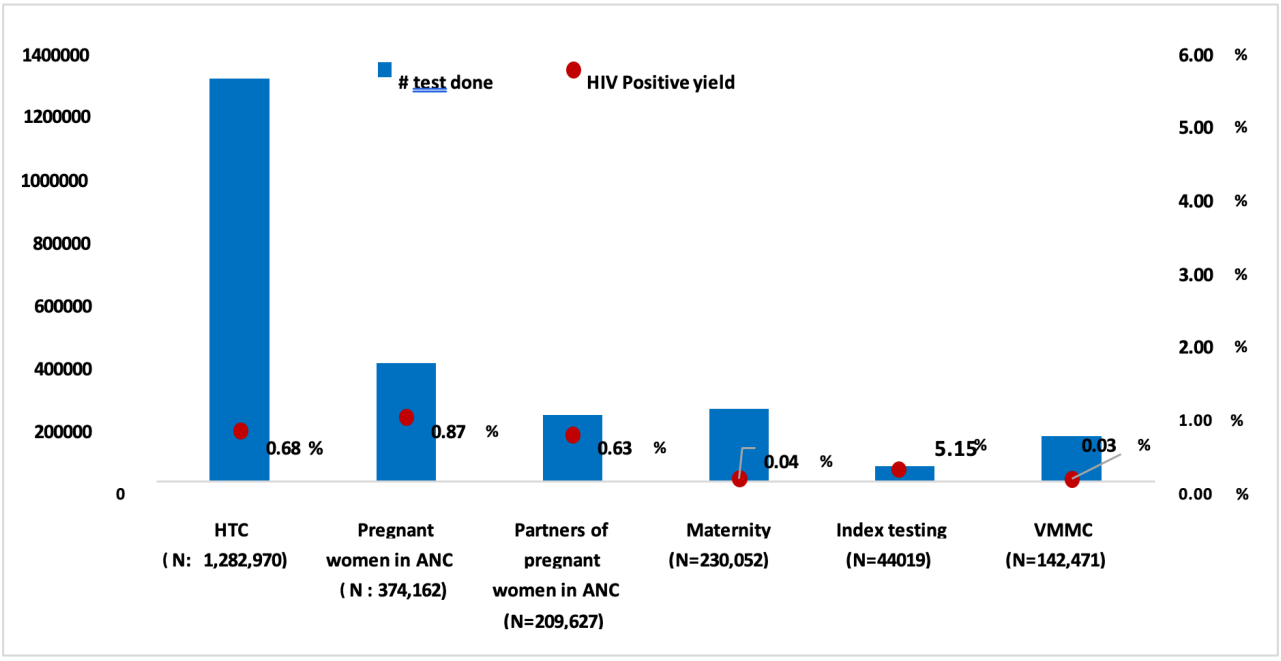
3.1.1. 1. HIV Prevention

The Ministry of Health and its partners continue to work together towards ending the AIDS epidemic by 2030 as part of the Sustainable Development Goals (SDG). Prevention of HIV is a key pillar of the national response to reduce HIV incidence and in the same time to ensure early diagnosis of HIV for timely ART initiation by people living with HIV. For effective prevention of HIV, the package of interventions implemented in Rwanda includes:

HIV testing services

In FY 2021-2022, health facilities provided 2,157,078 HIV tests across the country, with an overall positivity results of 0.58%, with the highest positivity yield of 4.4% observed in index testing through partner notification modality.

Figure 13: HIV testing and positive yield by entry points, July 2021-June 2022



Index testing and partner notification

By June 2022, 45,688 index cases notified 60,994 sexual partners, with 91.2% of them tested for HIV and 4.4% of them diagnosed with HIV.

HIV self-testing

During the FY 2021-2022, a total number of 73,770 self-tests kits were distributed through 280 health facilities across the country and 6,450 distributed by 70 private pharmacies around the country.

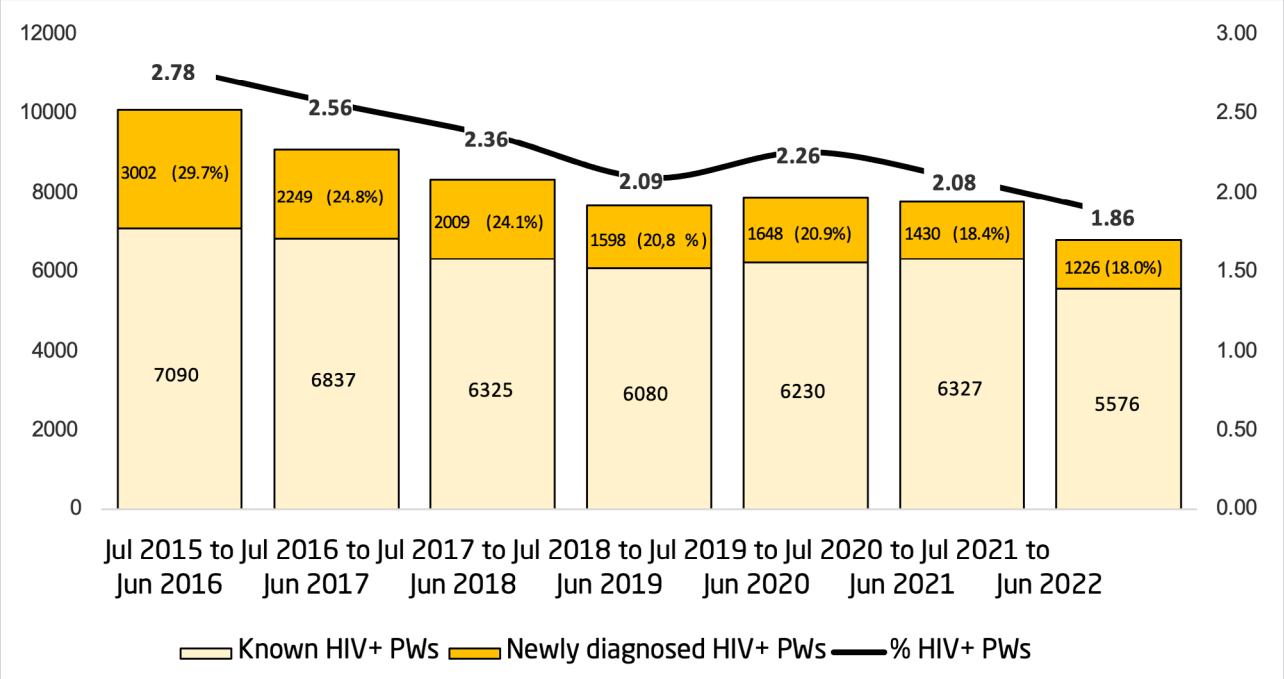
Recency testing

Between July 2021 and June 2022, out of 10,027 new HIV diagnoses, 7,398 individuals were tested for recent infections using the rapid test, and 245 (3%) were confirmed as recent infections using the recent infection testing algorithm after being tested for viral load.

Prevention of mother-to-child transmission

From July 2015 to June 2022, the HIV prevalence among pregnant women who attended antenatal care visits decreased from 2.78% to 1.86%. Further, the proportion of newly HIV diagnosed pregnant women in antenatal care decreased from 29.7% in 2015-16 to 18.0% in 2021-22. Overall, 98.4% of HIV infected pregnant women received ART to prevent the mother to child HIV transmission.

Figure 14: HIV prevalence among pregnant women attending ANC services, June 2022



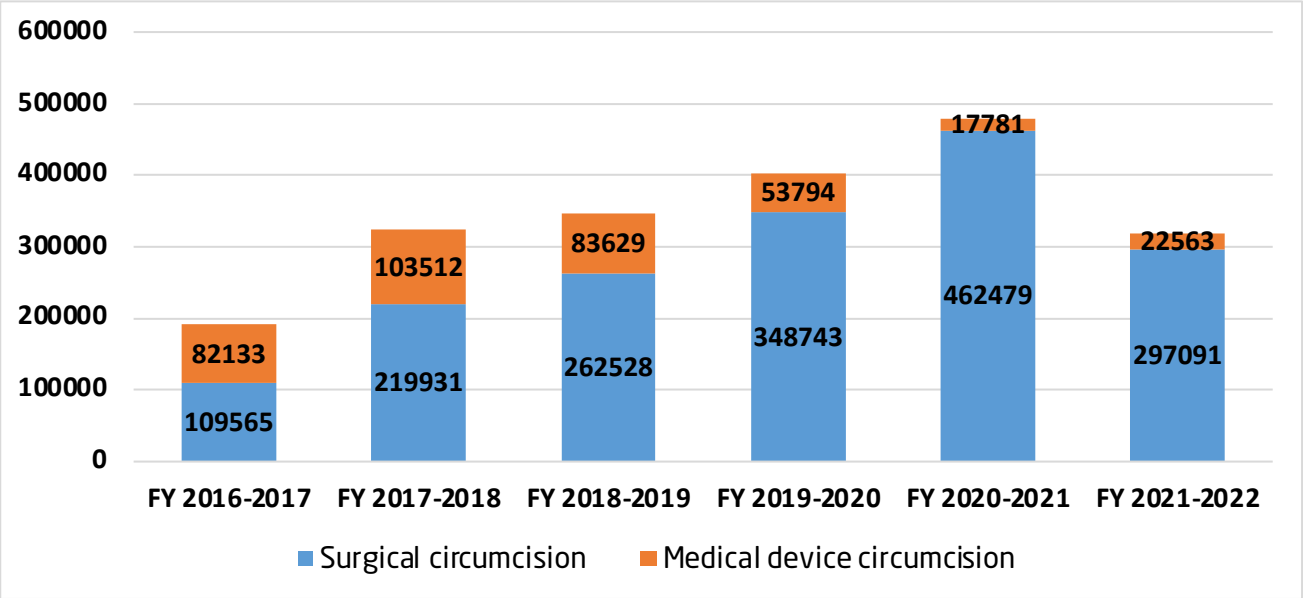
Similarly, to previous years, in FY 2021-2022 a retrospective analysis of the cohort of children who were born to HIV positive mothers conducted showed that out of 3,660 children born to HIV positive mothers who celebrated their two years 'anniversary, 51 (1.37%) were confirmed HIV positive at 24 months. Noting that there was a reduction from 1.5% to 1.37% as compared to the previous Fiscal Year.

Voluntary Medical Male Circumcision

Voluntary medical male circumcision (VMMC) as a critical component of a combination of HIV prevention in countries with a high HIV prevalence and low levels of male circumcision. The recent findings from Rwanda Demography and Health Survey (DHS) conducted in 2019 and 2020, show that 56% of male aged 15-49 are circumcised.

In line with the HIV national strategic plan to increase the VMMC prevalence and program's sustainability, notable efforts have been deployed nationwide. During FY 2021-2022, capacity building targeting health providers on non-surgical and surgical male circumcision methods countrywide was conducted among many other activities. As results, 319,653 males were circumcised, of them 297,091 (92.9%) were circumcised using the surgical method, and 22,562 (7.1%) were circumcised using the medical device. The high proportion of male circumcised in the current fiscal year were aged 15-19 years 142,135 (44.5%), followed by those aged 20-24 years, 55,250 (17.3%), 10-14 years 54,004 (16.9%), and 25-49 years 52,926 (16.6%), respectively.

Figure 15: Trend of VMMC Surgical vs medical circumcision, July 2016-June 2022



The figure above shows the trend of male circumcision over the last six years. The proportion of male circumcised using the medical device decreased from 42.8% in the fiscal year (FY) 2016/17 to 7.1% in FY2021/22. More VMMC were performed in both FY2019-20 and FY2020-21 as result of campaigns that were conducted.

Pre-Exposure Prophylaxis service to key population and other groups at high risk

By end of June 2022, the number of female sex workers and Men who have sex with men receiving PrEP gradually increased from 378 in July 2019 to 10,372 in June 2022.

HIV Prevention services among Adolescent Girls and Young Women

By end of June 2022, at least 82,500 of adolescent girls and young women were enrolled in the program. The program initially is implemented with partnership of USAID trough DREAMS approach in five Districts.

AGYW are selected based on vulnerability criteria such as the history of pregnancy, no or irregular condom use, out of school, STI (diagnosed or treated), and transactional sex (including staying in a relationship for material or financial support). Among them, 30,884 AGYW were in the 10-14 age band, 42,524 AGYW in the 15-19 age band, 9,092 AGYW in the 20-24 age band. Among those enrolled 2,140 were initiated on PrEP.

Condom programming

The condom programming is one the of HIV Prevention approaches provided at both health facility and community levels. In total, 32,592,675 condoms were distributed across the country form June 2021 to July 2022, including social marketing and 9 condoms kiosks displayed in Kigali City (6), Rubavu, Rusizi, and Huye Districts. In addition, another important number of condoms were distributed in the community through peer educators during outreach sessions.

In summary, fifty-five per cent of condoms (18,033,038) were distributed in the community through peer educators during outreach sessions, 8% (2,541,637) distributed through direct condoms kiosks, while 37% (12,018,000) distributed through social marketing.

HIV Awareness

Among the HIV awareness interventions to prevent HIV, the knowledge of the general and key populations about the availability and accessibility of HIV prevention, care, and treatment services is crucial. In FY 2021-2022 different interventions to increase awareness of the population on HIV, STIs, and viral Hepatitis was conducted including the following:

- Behavior Change Communication/ Information Education and Communication.
- Mass campaigns where the national campaign was launched in preparation of World AIDS day
- World AIDS Day (WAD) 2021 campaign, this was the 33 round.
- Radio and TV shows, public and private media houses were used to provide information and education on available HIV prevention services.

HIV Care and Treatment

Care and treatment services are key priorities in controlling the HIV epidemic toward ending AIDS by 2030. Key activities performed mainly focused on continuous quality improvement (CQI) through mentorship to strengthen the differentiated service delivery (DSD) and ensure the transition of adults and children to Dolutegravir (DTG) based regimen. Additionally, other activities implemented focused on nutrition and psychosocial support, ART optimization, improving laboratory commodities supply chain, and opportunistic infections (OIs) management. All these activities aim to improve the quality of life among people living with HIV and prevent HIV transmission by optimizing treatment outcome.

HIV Case-based surveillance (CBS)

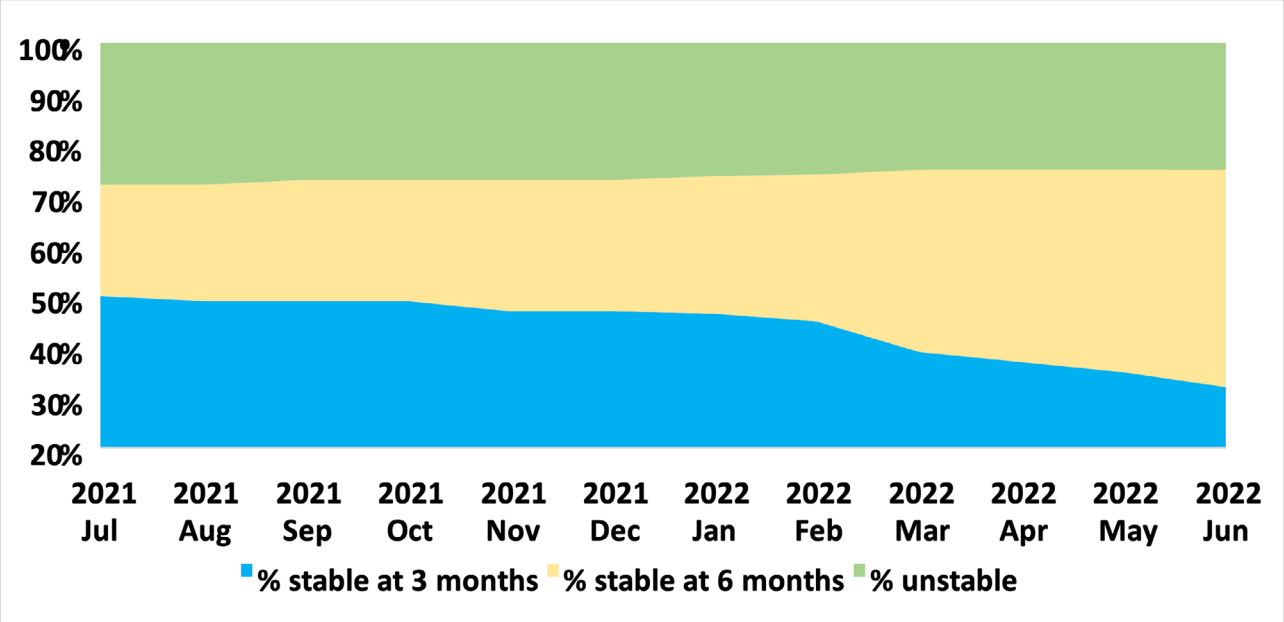
The HIV case-based surveillance is a longitudinal follow-up of HIV-positive clients to monitor their clinical outcomes as well as risk of HIV transmission. For comprehensive monitoring of the HIV epidemic, recency testing was integrated into CBS and routine HIV testing services. From July 2021 to June 2022, the number of health facilities implementing HIV case- based surveillance increased from 438 to 552 in the City of Kigali and all provinces. In the same period, the cumulative number of clients enrolled in the CBS program increased progressively with time.

Differentiated Service Delivery Model

Following the WHO guidance in 2016 on Multi Month Dispensing (MMD), Rwanda started 3 months MMD initiative in 2017, then moved to 6 months MMD in July 2020. People Living with HIV(PLHIV) who meet eligibility criteria (age >18, on ART for >12 months with at least 2 consecutive viral load tests [VLT]<200 copies/ml) can opt into the 6-MMD model, which includes twice-yearly clinic visits and VLT, and provision of 6 months of ART at each visit.

The graph below is providing the trend where it can be observed a consistent shift from the 3-MMD to the 6-MMD model throughout the 2021-2022 Fiscal Year. As of the end of 2021-2022 fiscal year, training and mentorship of all 30 district in Rwanda has been provided in order to ensure fully scale up of 6MMP approach.

Figure 16: Trends in the scale-up of DSD model categories from July 2021 to June 2022.



Scaling Pediatric Dolutegravir (pDTG 10mg) Optimization

Since august 2021 to February 2022, HIV care & treatment unit supported all steps regarding development of tools, implementation plan, training, and monitoring of the molecule that has led to the adoption of paediatric DTG10mgs at full scale across all health facilities in the country.

As of now, DTG 10mgs is in use and has been adopted as the preferred molecule for children that fall in the eligibility criteria.

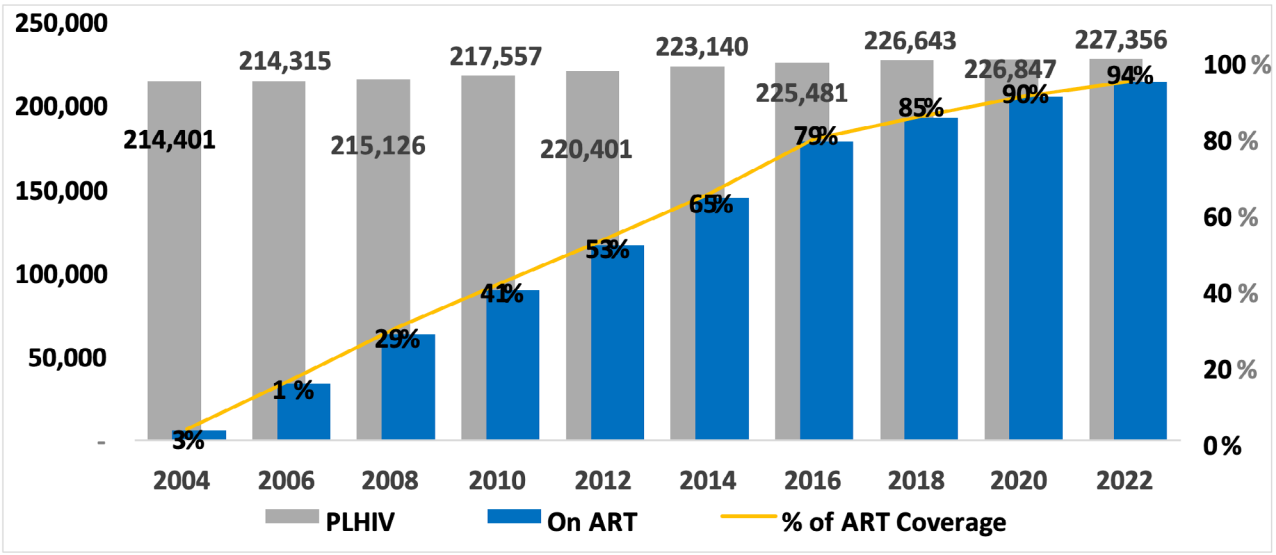
Differentiated service integration for Family Planning

The 2025 AIDS targets for sexual and reproductive health rights highlights the need to integrate and avail family planning, STI services and comprehensive sexual education in HIV service delivery. Therefore, through DSD coordination with the maternal, child and community health program, RBC conducted joint workshop to train 33 health care providers and equip them with comprehensive SRH, STIs and family planning knowledge and skills. It is expected that the trainees will cover an eligible population (15-49 years) of close to 20,000 Woman Living with HIV attending selected health facilities in city of Kigali. Furthermore, routine family planning implementation guide has been updated to reflect integration of disseminated service delivery.

ART coverage and HIV Continuum of Care

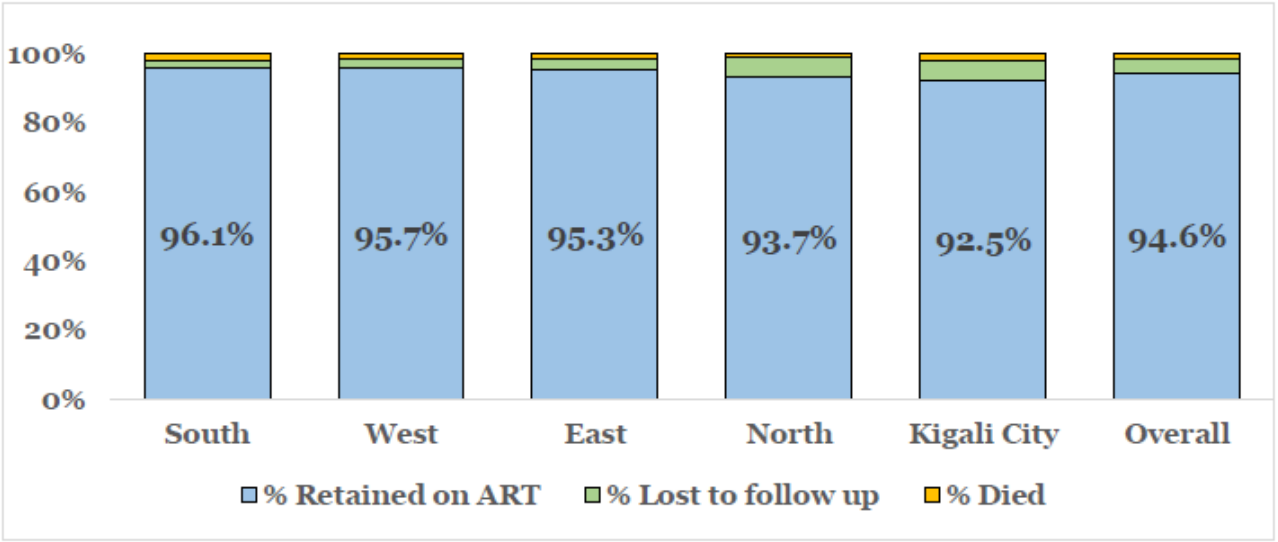
Rwanda adopted "Test and treat strategy" in June 2016. With this strategy, all clients who test HIV positive are linked to care, enrolled and initiated on ART, preferably on the same day regardless of their CD4 count. This strategy has led to an increase in the number of patients on ART in Rwanda. The figures below show the trend of ART coverage from 2004. While 214,074 clients are recorded to be initiated on ART by end of June 2022, UNAIDS estimates show that ART coverage among PLHIV in Rwanda is at 94%.

Figure 17: Trend of ART Coverage, 2004-June 2022



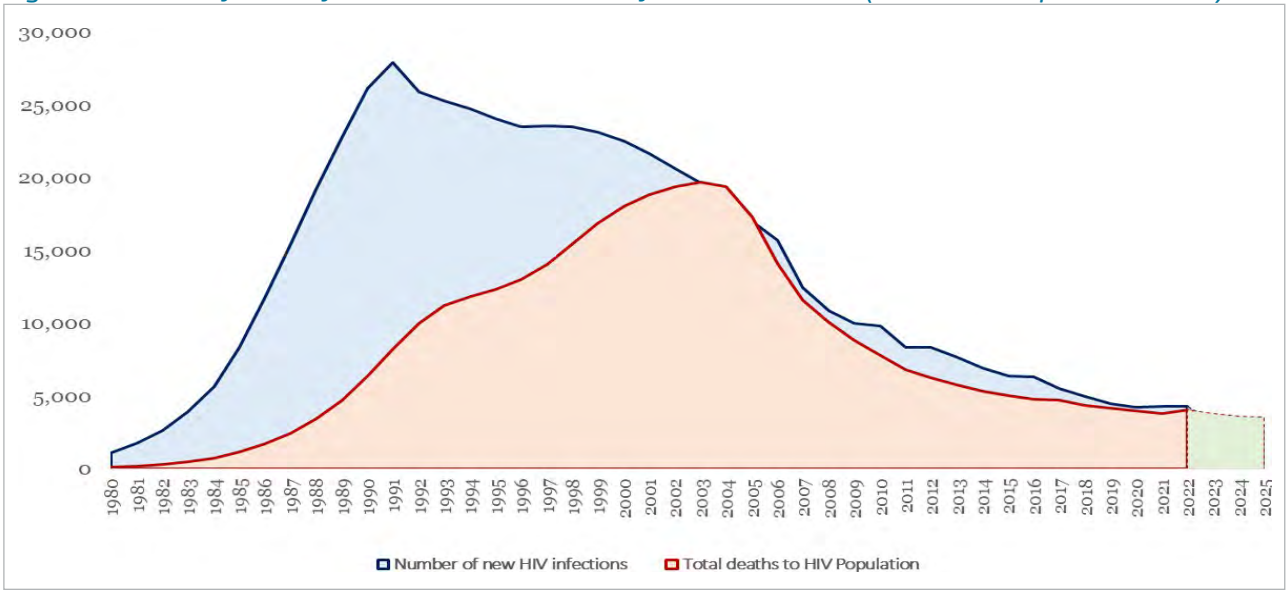
Retention in care is a spectrum of continuum of care packages starting from diagnosis of HIV infection till lifelong services. Nearly all health facilities at the level of the community known as health centres provide comprehensive antiretroviral treatment allowing maximum retention to care given that the distance to the health facility is within reach. During the 2021-2022 fiscal year, as observed on the graph below, the level of retention to care was 94.6%.

Figure 18: Retention after one year on treatment



Rwanda is on track to achieve the 95-95-95 goals by 2030, according to Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates of 2022, 98% of the 227,134 people are living with HIV are aware of their status, and of those who knew they were living with HIV, 94% were on treatment, with 96% having a suppressed viral load (<1000 copies/ml). Further, new HIV infection and AIDS deaths have significantly reduced; and the new infections and mortality have decreased by 82% and 86% in the last twenty-five years, respectively. Consequently, life expectancy of people living with HIV on ART increased by 25.6 additional years.

Figure 19 Trend of new infections and AIDS deaths from 1980 -2025 (source: EPP Spectrum 2022)

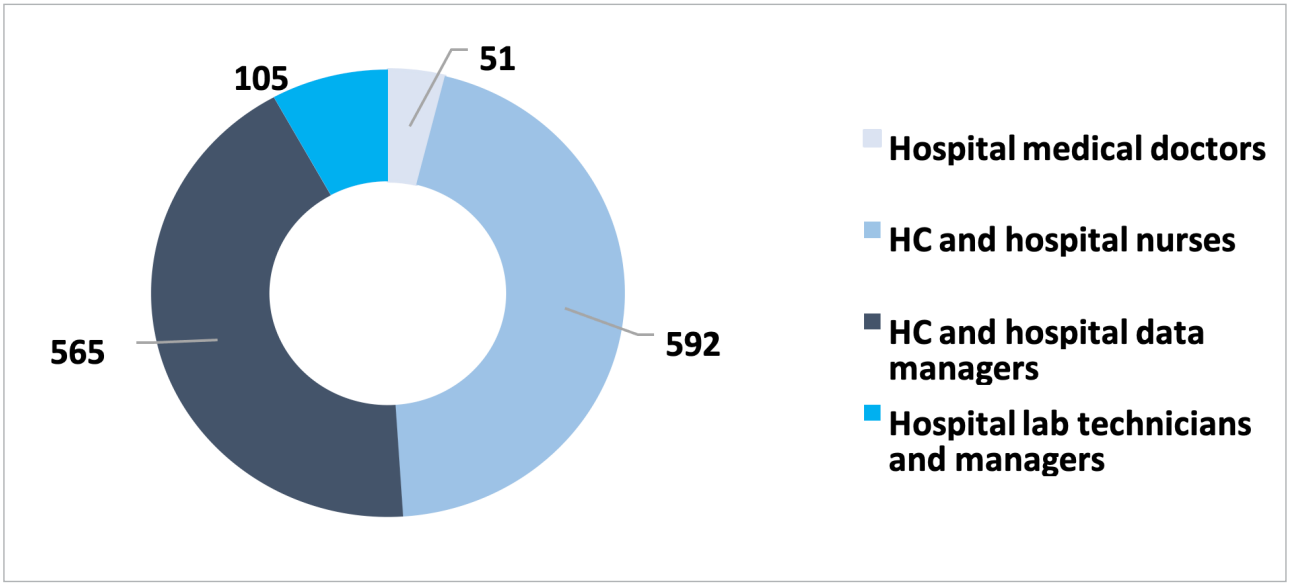


Rwanda has put efforts in biomedical interventions for HIV prevention. The male circumcision has increased from 13% in 2010 to 56% in 2020 and the mother to child HIV transmission has stabilised below 2% in the last seven years.

3.1.1.2. Viral Hepatitis prevention and control

Different methods were used in the 2021-22 fiscal year to prevent HBV and HCV, including sensitization through awareness, mass screening, vaccination, and treatment of infected individuals. Hepatitis management services were shifted to nurses and decentralized to health centers for sustainability, and different trainings were conducted for healthcare professional

Figure 20: Health care providers trained during the fiscal year July 2021-June 2022



For HBV vaccination, from July 2021 to June 2022, more than 144,094 adults and high risk groups including PLHIV, survivors of the genocide against the Tutsi in 1994, MSM, FSWs, and refugees residing in Rwanda were vaccinated against HBV. Where 489,021 people were vaccinated against HBV during this fiscal year.

HBV and HCT Testing and Treatment

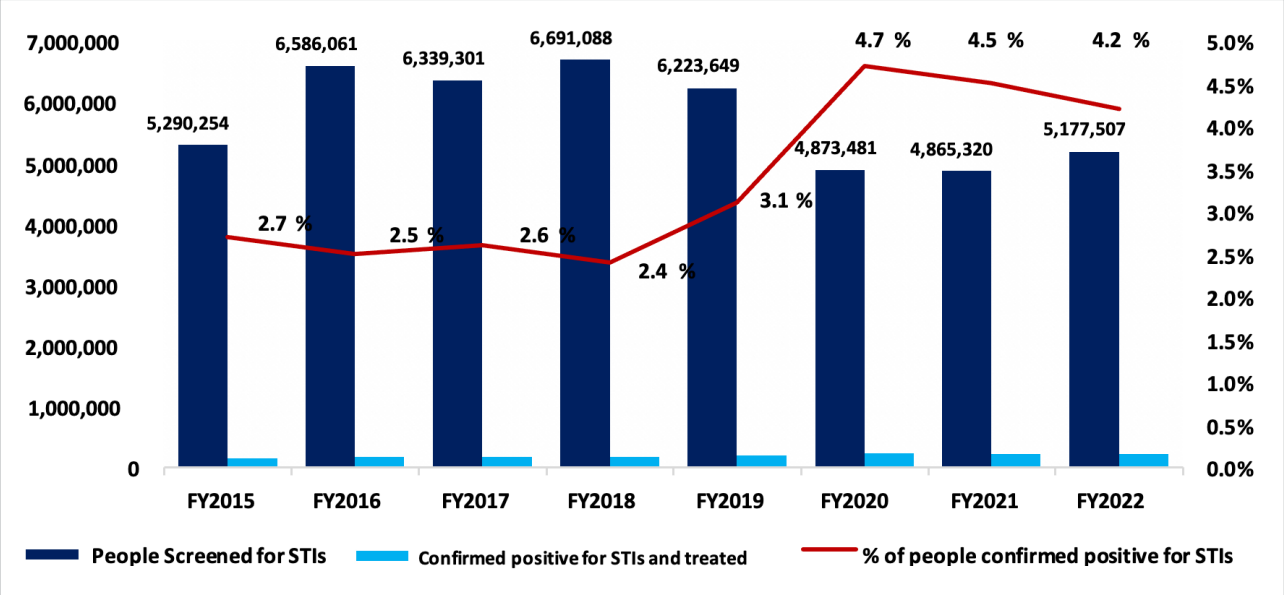
From July 2021 to June 2022, HBV screening was conducted in all districts of Rwanda, with 882,243 people screened for HBV for this period. Of 13,655 people who were screened HBs Ag positive, 3,074 were confirmed positive after HBV viral load testing, and 1,587 were eligible and initiated

Screening HCV in the population aged 15 years and above was conducted in all districts of Rwanda. During the 2021-2022 fiscal year, 1,924,901 people were screened for HCV. Of them, 28, 243 individuals were screened positive and 7,272 were confirmed after HCV viral load testing and initiated to treatment.

3.1.1.3. STIs Management

From July 2021 to June 2022, a total of 5,177,507 clients have received been screened and counselled on STIs. Of them 215,686 (4.16%) were confirmed positive for at least one STI and 248,045 cases (including those from the previous year) were treated.

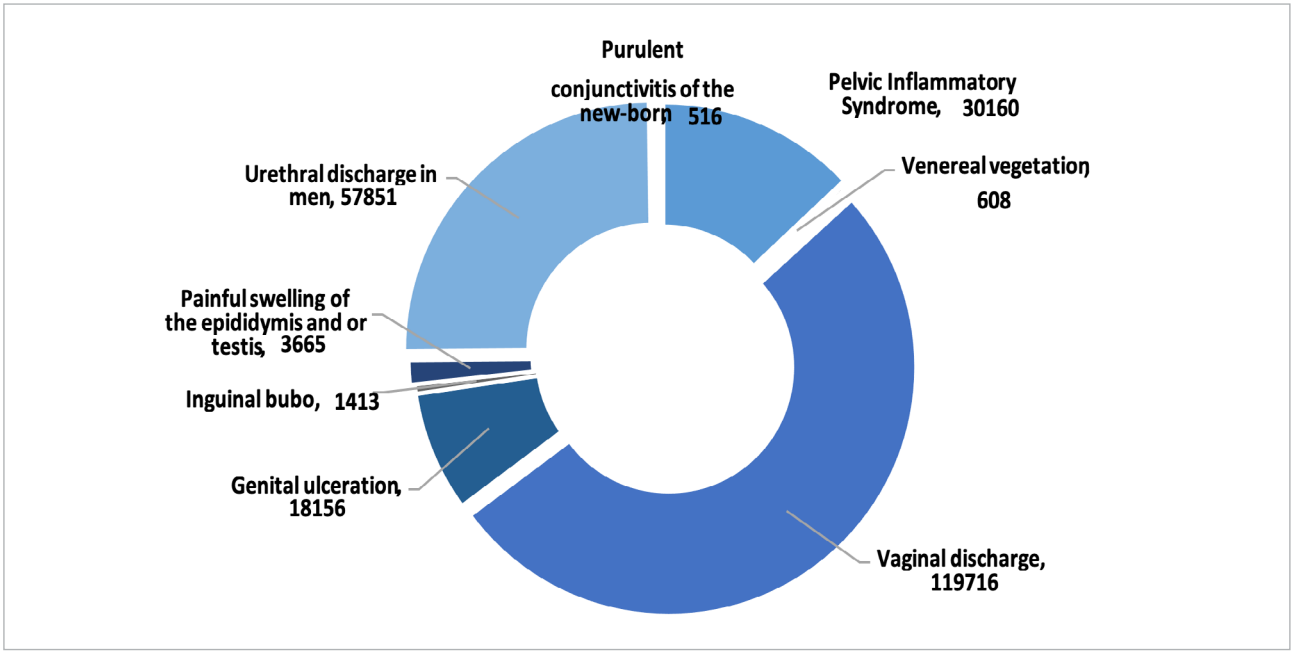
Figure 21: Trends of individuals screened, diagnosed, and treated for STIs from FY 2014/2015 to FY 2021/2022



From July 2021 to June 2022, 806,505 people were screened for STIs in Western, 787,975 in Southern, 1,312,742 in Northern and 499,608 in Eastern provinces and 271,375 in Kigali city.

Among diagnosed syndromes, vaginal discharge is the most predominant with almost 55.5% of all STIs confirmed cases

Figure 22: STIs Diagnosed by Types



Partner notification of STI, management of asymptomatic cases, and knowledge of the actual course of the syndrome need to be continuously improved. For example, of the 248,045 index clients treated, only 31,207 (12.6%) of their partners were treated, which is not a good promise for ending STIs and requires a solid strategy to strengthen this process.

3.1.2. Tuberculosis and other respiratory communicable diseases and leprosy

The National Strategic Plan aims to achieve the End TB milestones for 2024, including a reduction in TB incidence and deaths, and a reduction in catastrophic costs for TB-affected families. The plan also aims to achieve the UNHLM and TB global plan targets of more than 90% treatment coverage and success rate for all TB patients by June 2024.

Table 4 Performance on TB indicators as per the HSSP IV

Indicators	Baseline	Target 2022	Progress June 2022
TB Incidence per 100,000	58	45	56
TB treatment coverage rate	84	89	71. 6
TB treatment success rate (TSR) for all forms of TB cases (DS & DR TB cases)	85	87	88.8

3.1.2.1. TB screening and diagnosis

During the FY 2021-2022 FY, 126, 294 presumptive TB cases were identified and 70,391955,7%) were referred by CHWs. This represents a decrease of 28.4% of presumptive at Health facilities from 176, 636 presumptive identified in the 2020-21 FY.

Among all presumptive TB cases, 9.55 (11,998) knew their HIV status and 99.4% (113,624) of unknown HIV status have been tested during the TB diagnostic as part of TB/HIV integration. Among all presumptive cases tested for HIV, 12,505(9.9%) were found to be HIV positive. During this reporting period, a total of 50,174 GeneXpert tests were performed out of the 126, 294 presumptive TB population.

Table 5 TB detection and contribution of each screening level, Rwanda, July 2021-June 22.

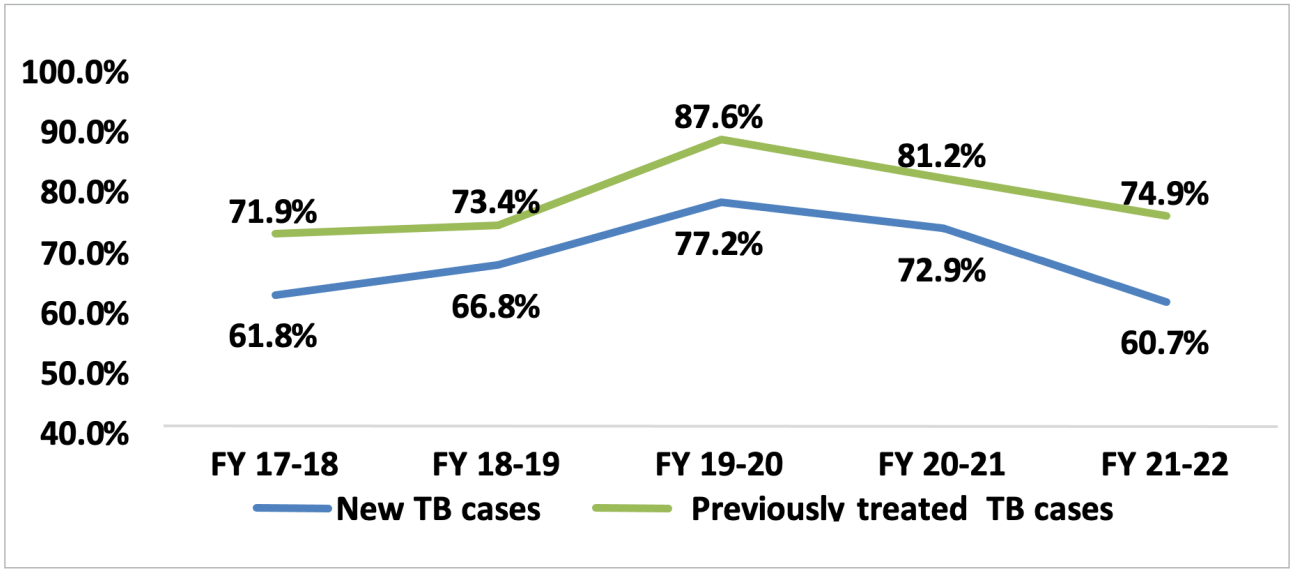
Detection	CDT	CT	CHWs	Total
Presumptive TB cases	35,414	20,489	70,391	126,294
	28.0%	16.2%	55.7%	100.0%
B+ among presumptive TB cases	1,951	750	1,386	4,087
	47.7%	18.4%	33.9%	100.0%
Positivity rate	5.5%	3.7%	2.0%	3.2%

Among HRG, active case finding was conducted using mobile Chest x-ray (CXR) in inmates in Rwamagana, Muhanga, and Huye Prisons and youth in the Rehabilitation transit Centre. Out of 22,747 HRG individuals, 3, 650 (16%) were screened positive on CXR.

3.2.1.2. Notification of TB cases

From July 2021 to June 2022, 5,538 TB cases were diagnosed, with 271 cases in children under 15 years old. Nearly half of the cases (50.4%) were from high-risk groups, and almost half (49.8%) were diagnosed using molecular testing as the initial diagnostic test. Bacteriological confirmation was achieved in 73.1% of cases, with 81.3% of cases being pulmonary TB. Universal drug susceptibility testing is recommended by the WHO for all TB patients, and 3,431 cases were tested during the fiscal year, with 38 cases showing resistance to rifampicin. The drug susceptibility testing coverage was 60.7% and 74.9% for new and previously treated cases, respectively.

Figure 23: Drug susceptibility testing among TB cases, Rwanda FY 2017-2022



3.2.1.3. Notification of Multi drug Resistant TB

During this July 2021 to June 2022, a total of 39 of Drug Resistant-TB (DR-TB) cases were notified as DR-TB patients. These included one patient empirically put on the second line TB drugs without laboratory confirmation. According to the previous history, 74.4% were from people without any previous history of TB drugs use.

Table 6 RR-TB cases notified from July 2021 to June 2022, by province.

Province		East	Kigali City	North	South	West	Total
RR/MDR-TB Cases	N	8	17	5	7	2	39
	%	20.5%	43.6%	12.8%	17.9%	5.1%	100.0%

3.2.1.4. TB management and treatment outcomes

From July 2021 to June 2022, 5,538 TB cases were diagnosed in Rwanda, out of which 50.4% were from high-risk groups and 49.8% were diagnosed using molecular testing. The WHO recommends universal drug susceptibility testing, and during this period, 3,431 cases underwent drug susceptibility testing, out of which 38 were rifampicin-resistant. The treatment success rate for susceptible TB was 88.8%, and for patients followed by CHWs, it was 93.9%. Among children under 15 years, the treatment success rate was 92.8%, while for clinically diagnosed and TB/HIV co-infected patients, it was 84.4% and 81.6%, respectively. Among drug-resistant patients, the treatment success rate was 97.5%, including a 90% cure rate, and 100% for HIV co-infected patients.

Table 7. TB treatment outcome for RR/MDR TB cases by HIV status

Outcome	Short Regimen		Longer regimen	
	Negative	Positive	Negative	Positive
Cured	17	6	10	3
Died	0	0	0	0
Treatment completed	0	1	2	2
Total	17	7	12	5

3.2.1.5. TB prevention and control

The TB infection prevention and control minimum package consists of six basic measures, and in the last quarter of 2021-2-22, 88.5% of health facilities were applying all six measures. During the same fiscal year, 85.6% of health facility staff were screened for TB, and 2.2% were identified as presumptive TB, with 4 confirmed cases. For CHWs, 90.9% were screened, and 1.2% were identified as presumptive TB, with 6 confirmed cases. TB preventive therapy was provided to people who had close contact with infectious TB, with 90.7% of under 5 years' contacts and 27% of above 5 years' contacts being identified as presumptive TB. TPT also continued to be given to PLHIV, and the treatment completion rate was 95.9%. it has slightly decreased from 97.2% of the previous year.

3.2.1.6. Leprosy control

During the FY 2021-2022, a total of 34 leprosy cases were diagnosed, among whom 14 were women **and 2** were children under 15 years of age. The proportion of MB cases represented 76.7%% and 30% of the leprosy cases detected had disability grade 2(G2D). The treatment completion rates for PB registered from July 2020 to

June 2021 and MB forms registered from July 2019 to June 2020 for new cases were 100%. During this fiscal year, contact tracing in non-endemic area started to reinforce leprosy surveillance and electronic contact tracing surveillance system was developed in DHIS2.

Table 8 Leprosy diagnosis

Indicator	Baseline	Target 2022	Current results
Proportion of newly diagnosed leprosy with grade 2 disability	19	14	30

3.1.3. Malaria and Other Parasitic Diseases

During the reporting period of July 2021-June 2022, there was a reduction in malaria incidence, Malaria incidence in Rwanda reduced from 114 cases per 1,000 populations in FY 2020-2021 to 76 cases per 1,000 populations in FY 2021-2022, with 998,874 cases reported compared to 1,477,696 the previous year.

The number of severe malaria cases and deaths also decreased. These outcomes are attributed to sustained and expanded malaria prevention and case management strategies, such as innovative integrated vector control tools, malaria diagnosis for all suspected cases, and prompt access to treatment for severe cases.

Table 9 Malaria Program Performance Indicators

Goal	Indicators	Baseline (2018-19)	2021-22 Targets	2021-22 Results
By 2024, reduce malaria morbidity and mortality by at least 50% of the 2019 levels.	Annual Parasite Incidence per 1,000 persons	321	156	76
	Inpatient malaria deaths per 100,000 persons per year	2.1	1.5	0.6
	Number of confirmed malaria deaths	264	198	71
By 2024, at least 85% of population at risk will beeffectively protected with preventive interventions	Proportion of structures in targeted areas that received indoor residual spraying (IRS) during the reporting period	98%	98%	99%
	Proportion of population protected by indoor residual spraying within the last 12 months in targeted districts	98.%	85%	99%
Objective 2: All suspected cases are promptly tested and treated in line with nationalguidelines	Proportion of suspected malaria cases that receive a parasitological test at public sector health facilities	NA	90	100%
	Proportion of suspected malaria cases that receive a parasitological test at the community level	NA	90	100%
	Proportion of confirmed malaria cases that received first-line antimalarial treatment according to national guidelines at public sector health facilities	100%	99	99%
	Proportion of confirmed malaria cases that received first-line antimalarial treatment according to national guidelines at the community	100%	100	100%

** The percentage were greater than 100%*

***The number of tests was greater than the number of fever cases due to some tests performed with no documentation of fever by Clinicians. This is a new indicator and more efforts needed to improve documentation of fever*

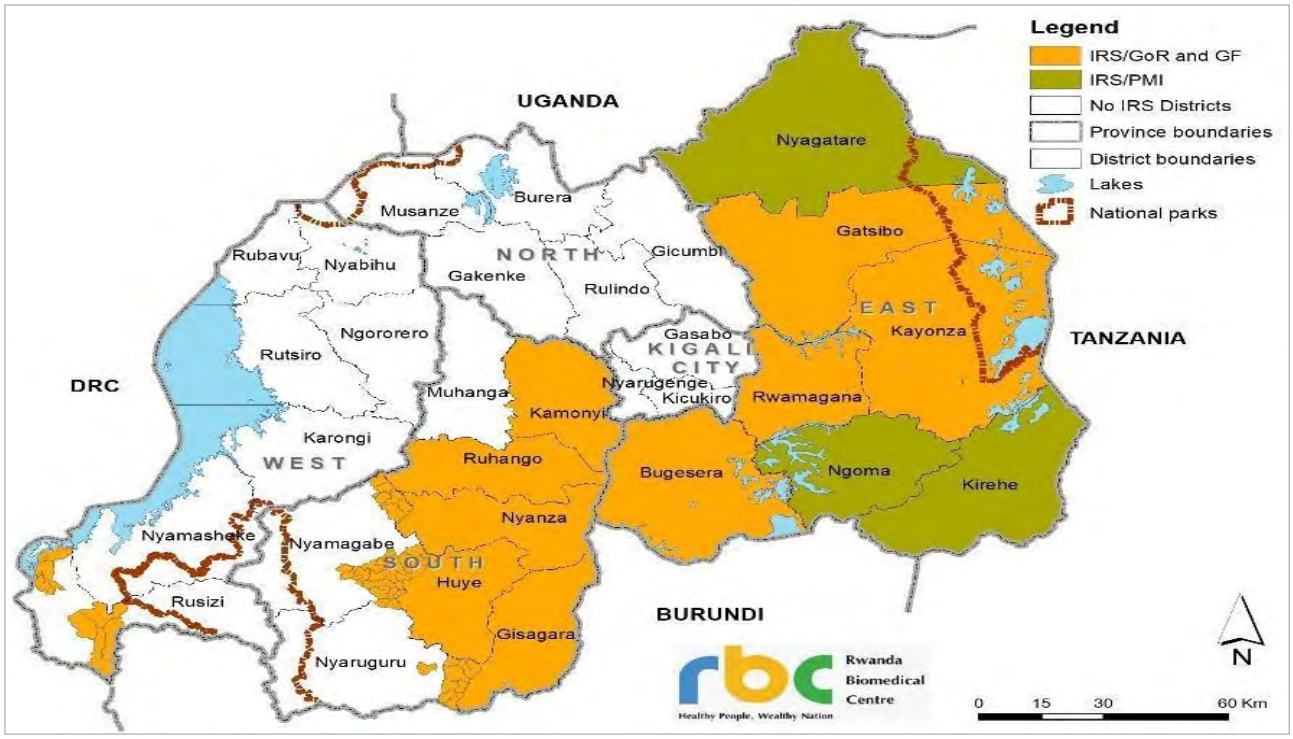
3.1.3.1. Malaria Prevention

Indoor Residual Spraying

During the FY 2021-2022, 15 districts were sprayed. Of these, there was blanket spraying in 12 districts and focal spraying in three districts. In the targeted districts, IRS intervention was performed with blanket coverage in a total of 12 districts (153/153 administrative sectors). A focal IRS was implemented in Rusizi districts where 8 sectors (44%) were sprayed out of the 18 sectors, and in Nyamagabe and Nyaruguru districts with a target of high malaria endemic cells. Overall, a total number of 1,376,832 out of 1,387,505 structures were sprayed making a coverage rate of 99.2%.

The total population protected was 5,170,303 out of 5,211,467 targeted population with an estimated population coverage of 99.2% in IRS.Among the population protected, 72,834 were pregnant women (1.4%) and 686,931 were children below five years (13.29%). The total insecticide used is 995,894 of Actellic 300CS.

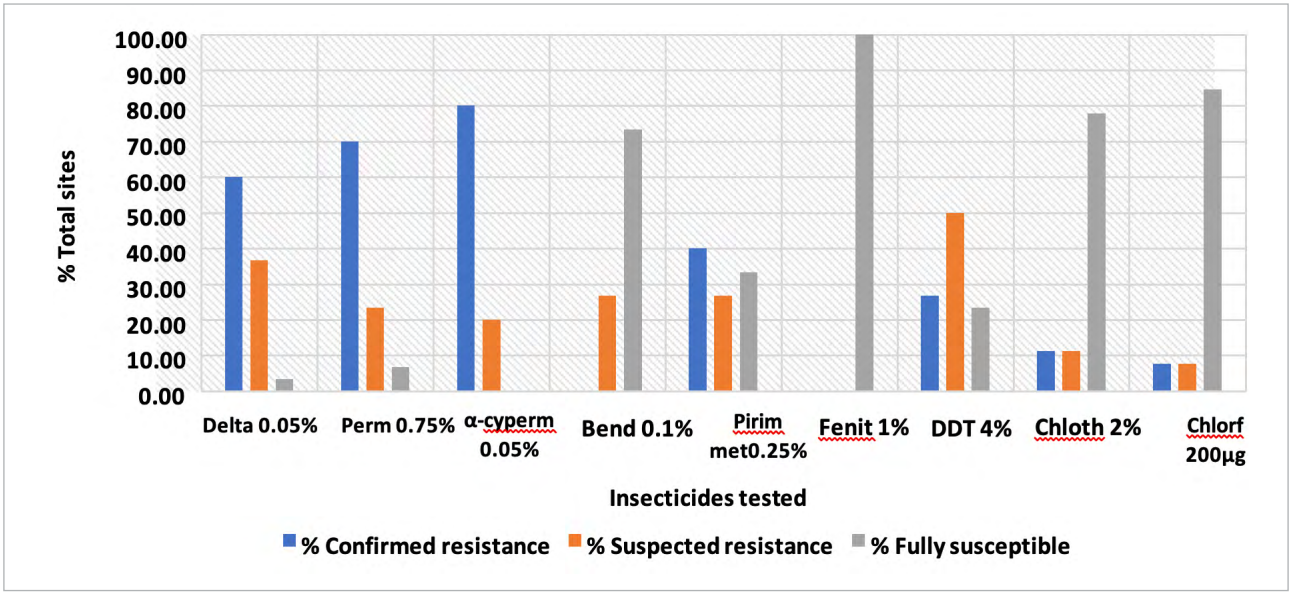
Figure 24: Indoor Residual Spraying Districts, FY 2021/2022



Insecticide Resistance Monitoring and Quality Control of IRS

In the FY 2021-2022, the biological resistance tests were performed in 30 different sites using WHO guidelines, for the nine insecticides belonging to the five classes: Carbamates (Bendiocarb 0.1%); Organophosphates (Fenitrothion 1%, and Pirimiphos methyl 0.25%); Organochlorines (DDT 4%); Pyrethroids (Deltamethrin 0.05%, Permethrin 0.75%, and Alpha cypermethrin 0.05%); and two new classes of pyrrole (Chlorfenapyr 200µg) and Neonicotinoid (clothianidin 2%).

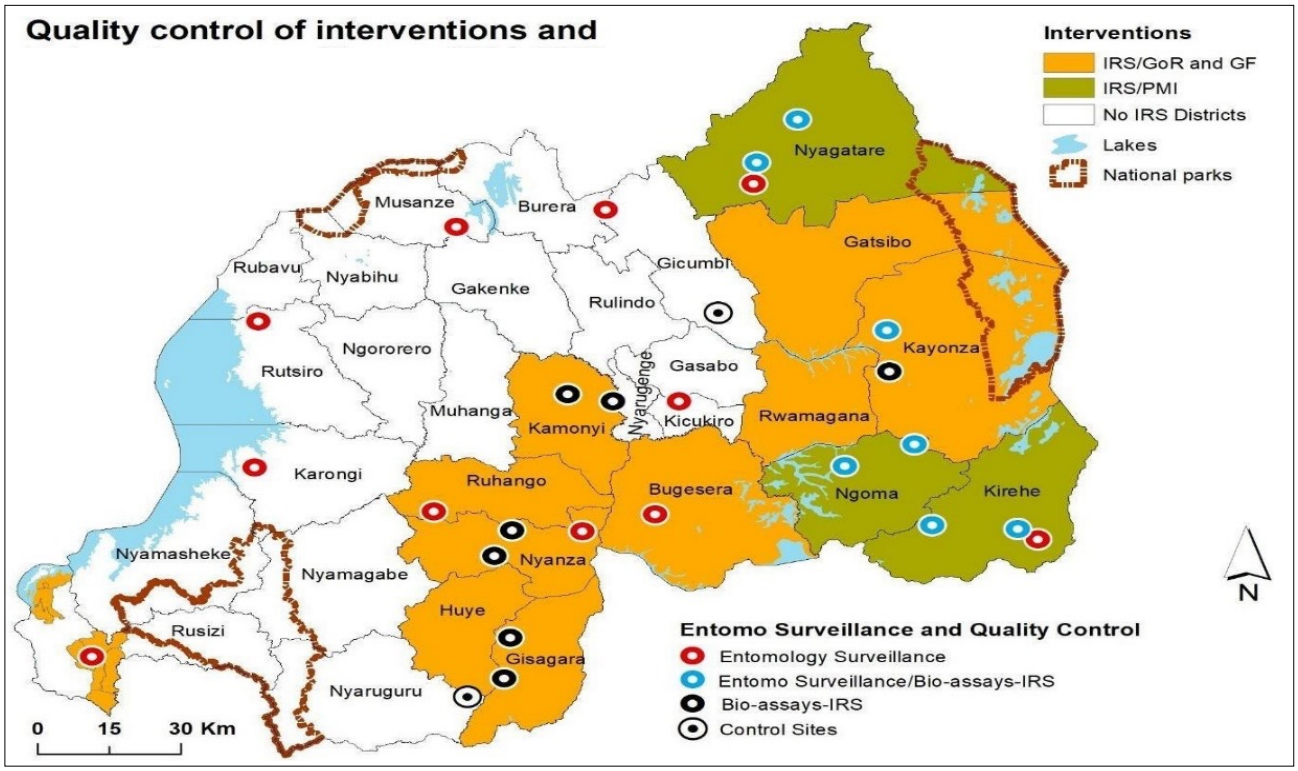
Figure 25: Levels of Insecticide Resistance per Insecticide Product



The susceptibility test was carried out on Anopheles gambiaes aged 3 to 5 days, and fed on glucose. A mortality rate between 98% and 100% indicates fully susceptibility; 90-97% mortality for the possible resistance that needs to be confirmed. The mortality under 90% indicates the confirmed resistance.

Quality Control of IRS using Entomology Monitoring

Figure 26: Quality Control of Interventions and Entomology Surveillance 2021-2022



a. **Wall bioassays** was performed one-week post- IRS as well as on a monthly basis to determine the residual efficacy of the insecticide on sprayed house walls.The districts sampled for IRS Quality Control were: Gisagara, Kamonyi, Kayonza, Kirehe, Ngoma, Nyagatare and Nyanza and the IRS quality control was performed in 2 sectors from each of the seven out of 15 IRS districts. In all districts, the insecticide was still effective at the end of the year with mortality of exposed mosquitoes above the cut-offmortality of 80% as recommended by WHO

b. **Entomological monitoring** was carried out in two sites located in each IRS district Nyagatare (Nyagatare & Rukomo), Kirehe (Gatore & Nyamugali) and Ngoma (Zaza & Remera). The control district was Nyaruguru (Ngera) from July 2021 to March 2022, and then replaced with Gicumbi (Rwamiko) from April 2022 to June 2022. Between July 2021 and June 2022, mosquitoes were collected from indoor and outdoor on a monthly basis for assessment of the following parameters: vector bionomics using human landing catching method and indoor resting behavior of mosquitoes using Pyrethrum Spraying catching method.

c. **Entomologicalcal surveillance** was carried out over twelve sentinel sites located in different districts according to malaria eco-epidemiological strata (Bungwe and Rwaza in Nothern Province, Rukara, Bukora, Mareba and Mimuli in Eastern Province; Busoro, Karambi in Southern Province; Mashesha, Kivumu, Mubuga in Western Province and Kicukiro in Kigali City. Between July 2021 and June 2022, mosquitoes were collected using human landing catching method from indoor and outdoor on a monthly basis for assessment of the different entomological parameters.

d. **Climate Surveillance,** Spatial variation of the three climatic variables (temperature, rainfall, and R. humidity) was mostly contributing to the distribution of Anopheles mosquitoes. Bukora (Kirehe District) and Rukara (Kayonza District) are the highest warmed stations with respectively 22.11°C and 20.98°C. The annual rainfall increased in 2021-2022 compared to the previous year. Six stations out of ten registered a high rainfall depth varying between 1440-1863mm. These are Busoro (Nyanza District, 1444mm), Bungwe (Burera District, 1461mm), Mashesha (Rusizi District, 1475mm), Mubuga (Karongi District, 1541.8mm), Mbuga (Nyamagabe District, 1614mm), Kivumu (Rutsiro District, 1825mm) and Rwaza (Musanze District, 1863mm). The short dry season of mid-January to end February was not occurred but it was at that period when the peak of rainfall was reported. This latter climate phenomenon was abnormal compared to the normal peaks of rainfall usually observed in April-May and November-December of each year. The data indicate that climatic parameters collected in 10 sentinel sites remain a risk factor of malaria transmission in many areas

Sustain Universal Access to Long Lasting Insecticide Treated Nets (LLINs)

Based on the National Malaria Strategic Plan 2020-2024 and as recommended by WHO, the focus is on universal coverage (UC) of the population at risk through the LLINs. These LLINs are distributed through mass campaigns in households with low and moderate incidence of malaria as well as routine distribution channels focusing on the most vulnerable groups (children under five years and pregnant women) countywide.

For the fiscal year of 2021-2022, a total of 7,377,378 rectangular LLINs were procured using Global Fund support through RMS and USAID/PMI through GHSC-PSM.

Table 10 Number of LLINs Procured by Type and Source of Funds

Source of Fund	LLINs Type	Procured	Delivered	Accepted	Distributed		Total
					HH	Routine (ANC&EPI)	
Global Fund	Standard	1,782,242	0	0	0	0	0
Global Fund	PBO Nets	1,084,088	0	0	0	0	0
USAID/PMI	Standard	1,142,263	1,142,263	1,142,263	218,936	923,327	1,142,263
USAID/PMI	PBOP Nets	3,368,785	2,667,085	Not yet inspected	0	0	0
Totals		7,377,378	3,809,348	1,142,263	218,936	923,327	1,142,263
Total Districts Covered				1 District (HH), 18 Districts (Routine)			

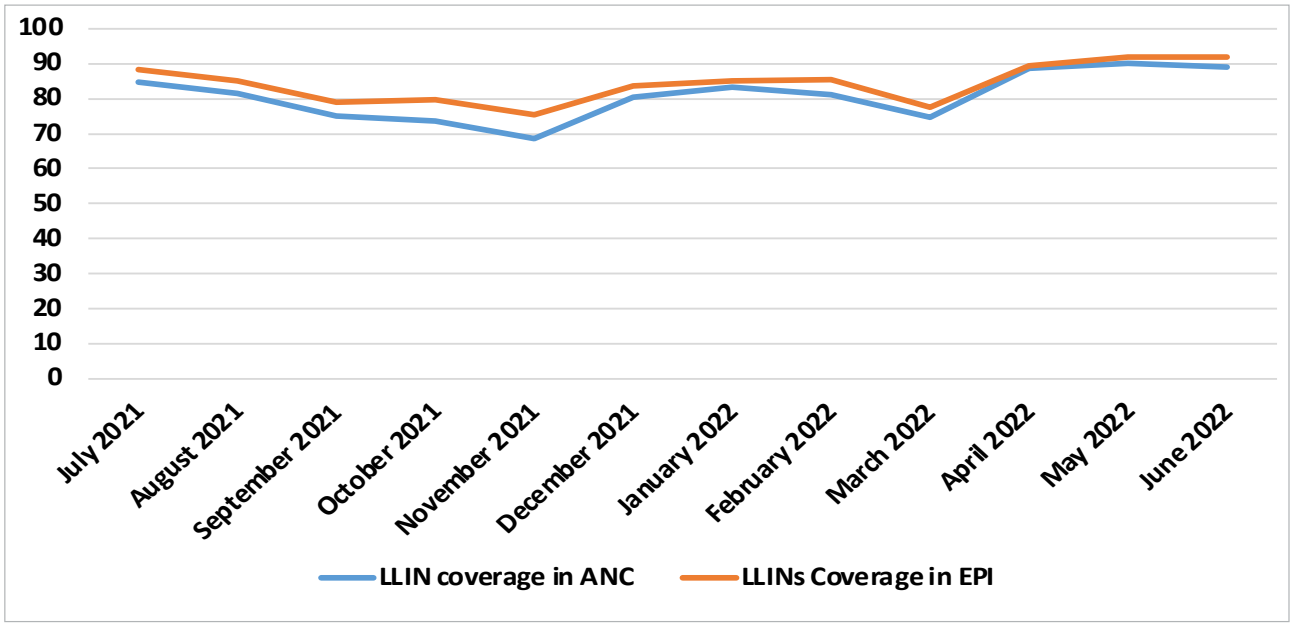
As a result of the increase of the initial unit price of LLINs in the market, the number of LLINs planned for procurement was decreased from 3,665,899 LLINs to 2,866,330 LLINs, a decrease of 21,8%. This has implications in terms of protecting the targeted population and also in reaching the indicators as agreed in the RBF for malaria with the Global Fund.

LLINs Distribution to Pregnant Women and Children Under 1 Year

The strategy of LLINs distribution to these vulnerable groups is integrated in Antenatal Care (ANC) package and Expanded Program in Immunization (EPI) services in all Health Centres. On a monthly basis, the distribution of LLINs was reported through the national Health Management Information System (HMIS)

During this fiscal year, 317,184 LLINs were distributed to pregnant women over 373,828 who attended the first visit of antenatal care (85%) and 278,828 LLINs were distributed to children under one year over 325,510 who attended MR1 (86%)

Figure 27:National Coverage of LLINs through ANC and EPI



LLINs Distribution to Households through Mass Campaign

In addition to the regular distribution of long-lasting insecticide-treated bed nets (LLINs) through ANC and EPI services, 237,000 LLINs were distributed to households in a mass distribution campaign.

LLINs Selling in the Private Sector

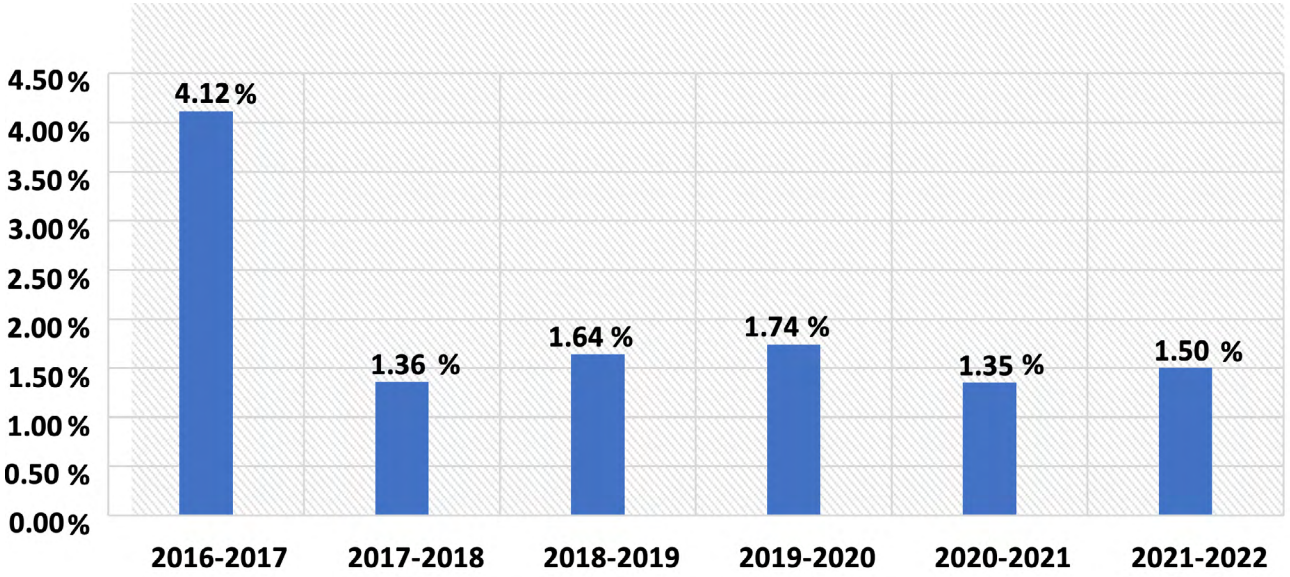
SFH Rwanda distributed 1,874 LLINs to those in need through Social Marketing in different areas of the country through selling points.

3.1.3.2. Malaria case management

3.1.3.2.1. Malaria Diagnosis to all Suspected Malaria Cases at all Levels

During 2021-2022, Malaria Diagnosis External Quality Assurance was conducted to ensure the quality of malaria diagnosis, including blinded slide retesting, proficiency testing, and on-site supervision. Quarterly evaluation of thick and thin smear practices, Giemsa staining, and microscopy results were enforced in health facilities. Discrepancy in slide results remained below the acceptable range (5%) except for two hospitals that exceeded it in FY 2021-2022.

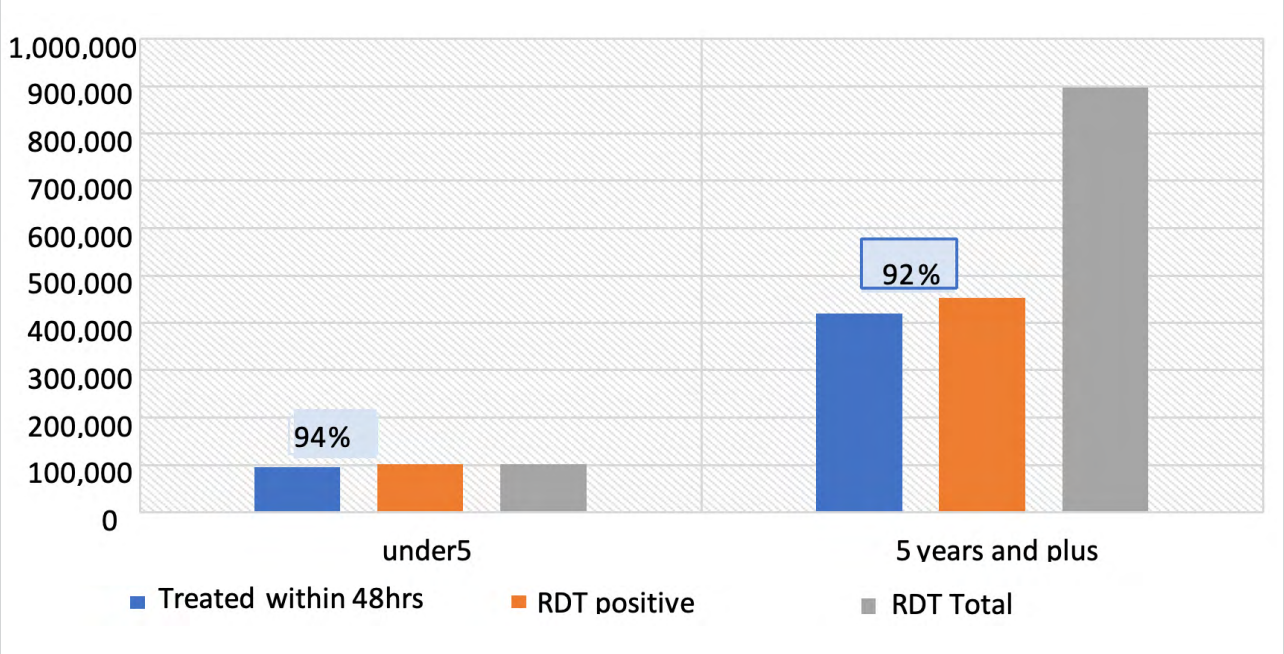
Figure 28: External Quality Control Results at Hospital level, 2016-2022



3.1.3.2.2. Prompt Access to Diagnosis and Treatment of Malaria

In FY 2021-2022, 94% of children under five and 92% of children above five and adults sought treatment within 48 hours of onset of symptoms at community level, (see figure below). Patients seeking care at the community were diagnosed by RDT and treatment was provided only when a positive RDT was observed.

Figure 29: Community Malaria Case Management in FY 2021-2022



Since the extension of HBM of malaria intervention to children above five years and adults, there was a steady increase of the proportion of malaria patients seeking care in the community from 13% to 55% in 2015-2016 and 2021-2022 respectively, Figure 30 and 31. During this scale up period, a decline in severe malaria cases and malaria deaths was observed, Figure 16.

Figure 30: Impact of Extended HBM on Severe Malaria Cases and Malaria Mortality, July 2014-June 2022

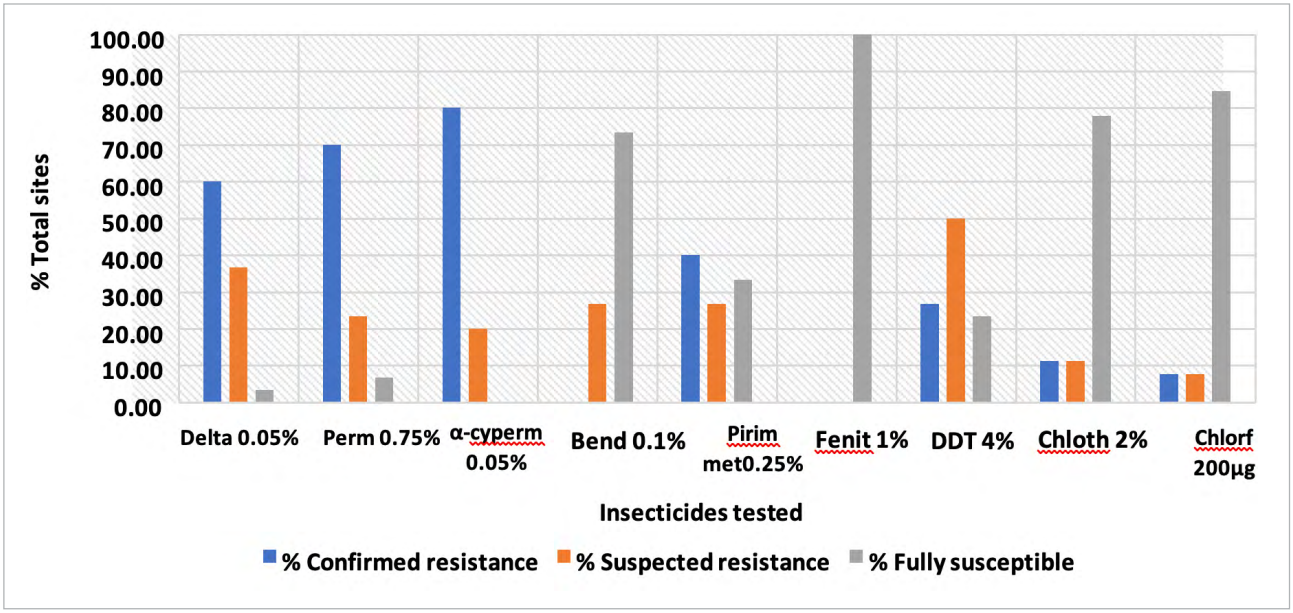
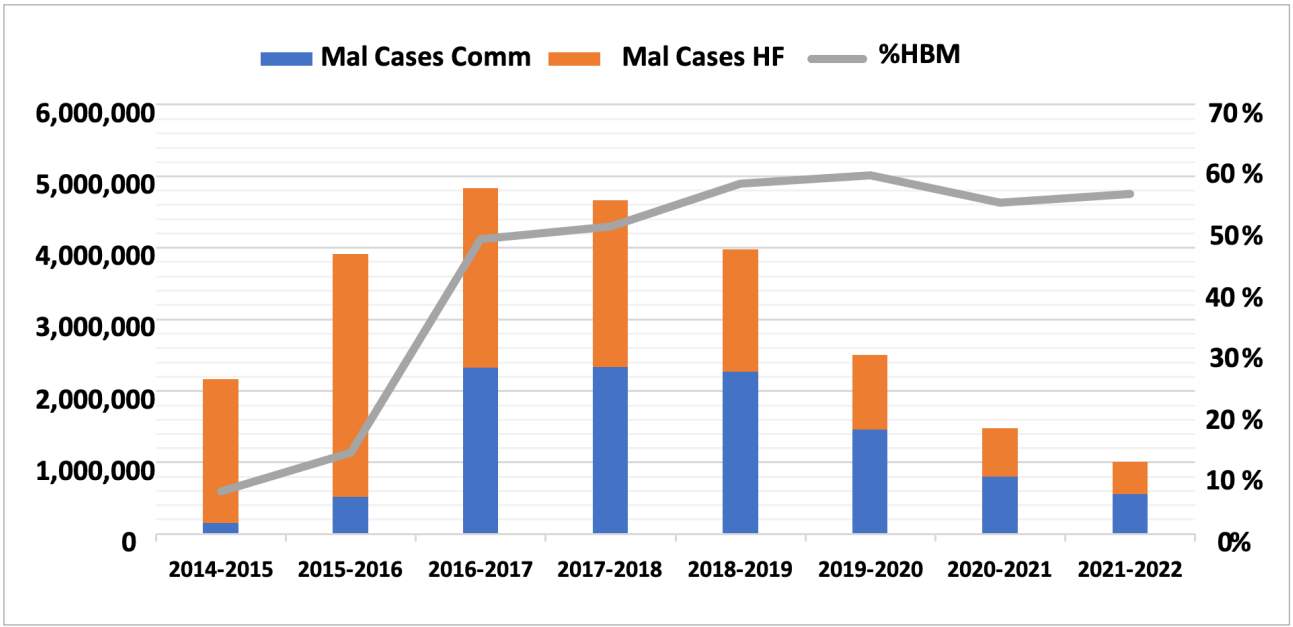
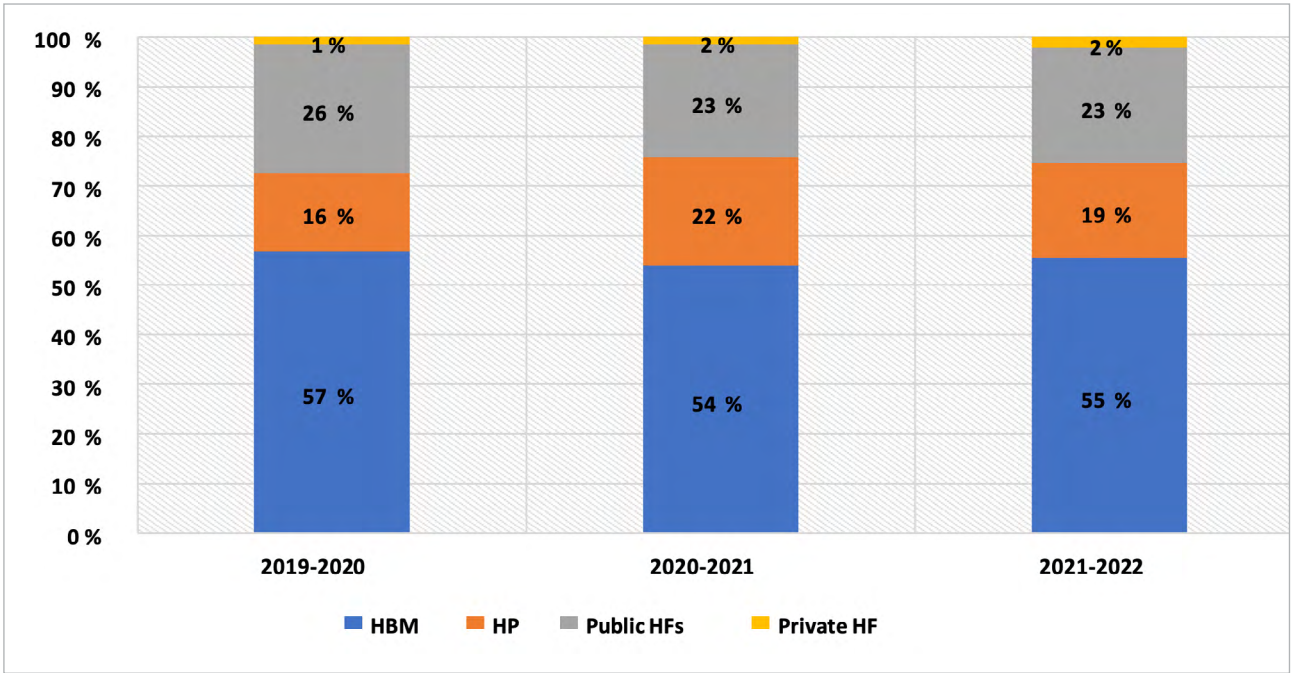


Figure 31: Proportion of Malaria Cases by Level of Service Delivery, 2014- June 2022



Although a slight decrease in the proportion of malaria cases treated in the community was observed in FY 2021-2022, the decrease in severe malaria cases by 29% from FY 2020-2021 to FY 2021-2022 and a decrease in malaria death from 94 to 71, (Figure 30), indicate that the impact of early diagnosis and treatment on malaria outcome was not compromised. The proportion of malaria cases treated in the community in FY 2021-2022 (55%) does not vary from the last FY 2020-2021 (54%). This is due mainly to the introduction of Health Posts in the health system, a new strategy adopted by the GoR to scale up health services closer to the community and alleviate workload for the CHWs. Figure 17

Figure 32: Contribution of Health Facilities and CHWs to Malaria Cases Management, 2019-2022



3.1.3.2.3. Prompt and Correct Treatment of Simple Malaria at All Levels

In FY 2021-2022, MOPDD and partners provided supportive supervision to strengthen the delivery of quality malaria services at the health center and hospital levels, as well as mentored nurses and laboratory technicians from health posts on malaria diagnosis and treatment, supply chain management, and referral procedures. CHWs were also equipped with knowledge and skills through mentoring on assessing and identifying danger signs, using diagnostic tools, interpreting results, adhering to treatment protocols, and completing treatment registers. Additionally, there was an introduction of a Polyvalent Community Health Model where community health activities transitioned from specialized CHWs to polyvalent CHWs who can provide a comprehensive community health package to the served population. Nurses and CEHOs from HCs in six district catchment areas were trained on this model in collaboration with MCCH.

3.1.3.3. Malaria Commodities Procured in FY 2021/2022

During fiscal year 2021-2022, the MOPDD in collaboration with all partners kept the available malaria commodities stock at the desired stock level. This was achieved through regular supply plan reviews, use of appropriate quantification tools and willingness of partners to support the entire process. Several quantification reviews took place over the reporting period to adjust the real need of malaria commodities. Malaria commodities were routinely distributed to health facilities through Rwanda Medical Supply Ltd. branches and finally from Health Centers to the community and when and where appropriate, redistribution of commodities was undertaken. The table below is showing how the malaria commodities were procured during this fiscal year.

Table 11: Malaria Commodities Procured in FY 2021/2022

Product	Quantity Procured
Artemether-Lumefantrine 1x6, Blisters	143,040
Artemether-Lumefantrine 2x6, Blisters	270,000
Artemether-Lumefantrine 3x6, Blisters	120,000
Artemether-Lumefantrine 4x6, Blisters	450,000
Artesunate 60mg/ml Vials	107,688
Malaria RDTs	3,655,200
Quinine 300mg Tablets	0

3.1.3.4. Malaria surveillance and epidemiology

3.1.3.4.1. Key Malaria Program Indicators

The table below summarizes the key malaria indicators for the period 2021-2022 and performance compared to previous period:

Table 12 Key Malaria Program Indicators

No	Indicators	FY 2019/2020	FY 2020/2021	FY 2021/2022
1	Malaria Incidence per 1,000 persons per year	198	114	76
2	Slide Positivity Rate (%)	35	27	22
3	Uncomplicated Malaria Cases	2,495,890	1,481,698	998,874
4	Severe Malaria Cases	4,358	2,592	1,831
5	Malaria Deaths	168	94	71
6	Case Fatality Rate (per 100,000 Malaria cases)*	6.7	6.5	7.0
7	Proportion of malaria cases treated at community	58%	54%	55%

Note*: CFR: The CFR reflects the # of malaria deaths over the # malaria cases. Even if both Malaria cases and deaths decreased from 2020/2021 to 2021/2022, but the ratio of decrease was bigger in malaria cases (0.33) compared to deaths (0.26) justifying why the CFR increased.

Key facts on the Malaria Program

33% Reduction in Malaria Incidence from 2020/2021 to 2021/2022

32% Reduction in Uncomplicated Malaria Cases from 2020/2021 to 2021/2022

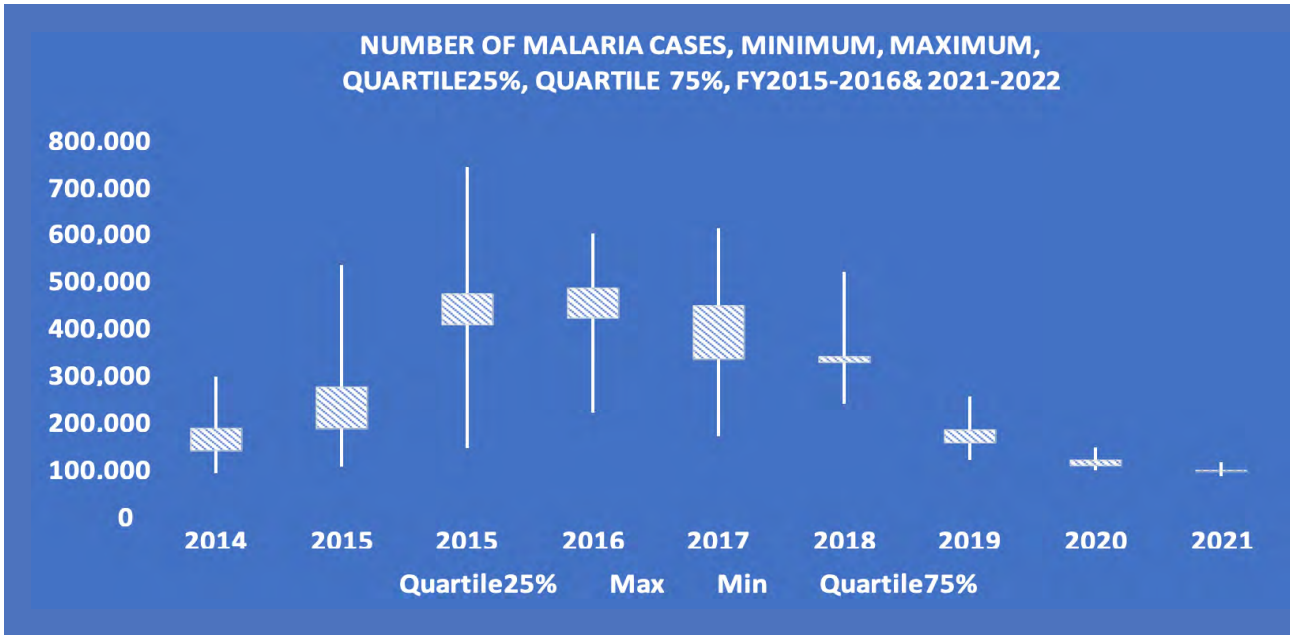
29% Reduction in Severe Malaria Cases from 2020/2021 to 2021/2022

17% Reduction in Malaria Deaths from 2020/2021 to 2021/2022

Today, **55%** of all malaria cases are being treated at Community Level by CHWs compared to **54%** during the FY 2020-2021

3.1.3.4.2. Summary Statistics of Malaria Cases, 2015-2022

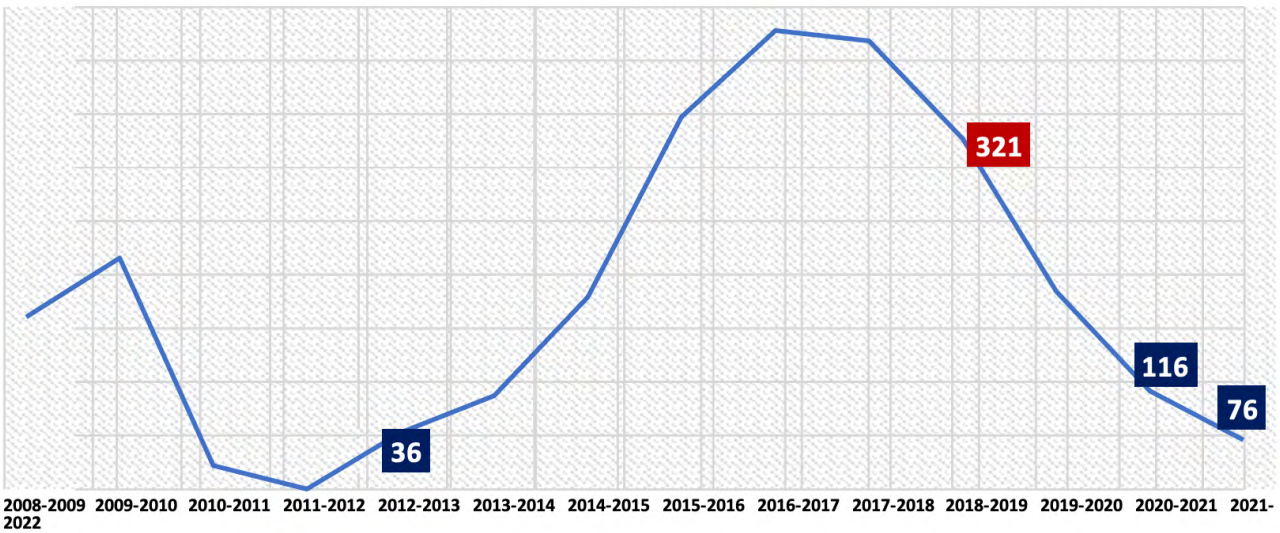
Figure 33: Summary Statistics of Malaria Cases, FY2015-16 to FY2021-2022



Malaria Incidence

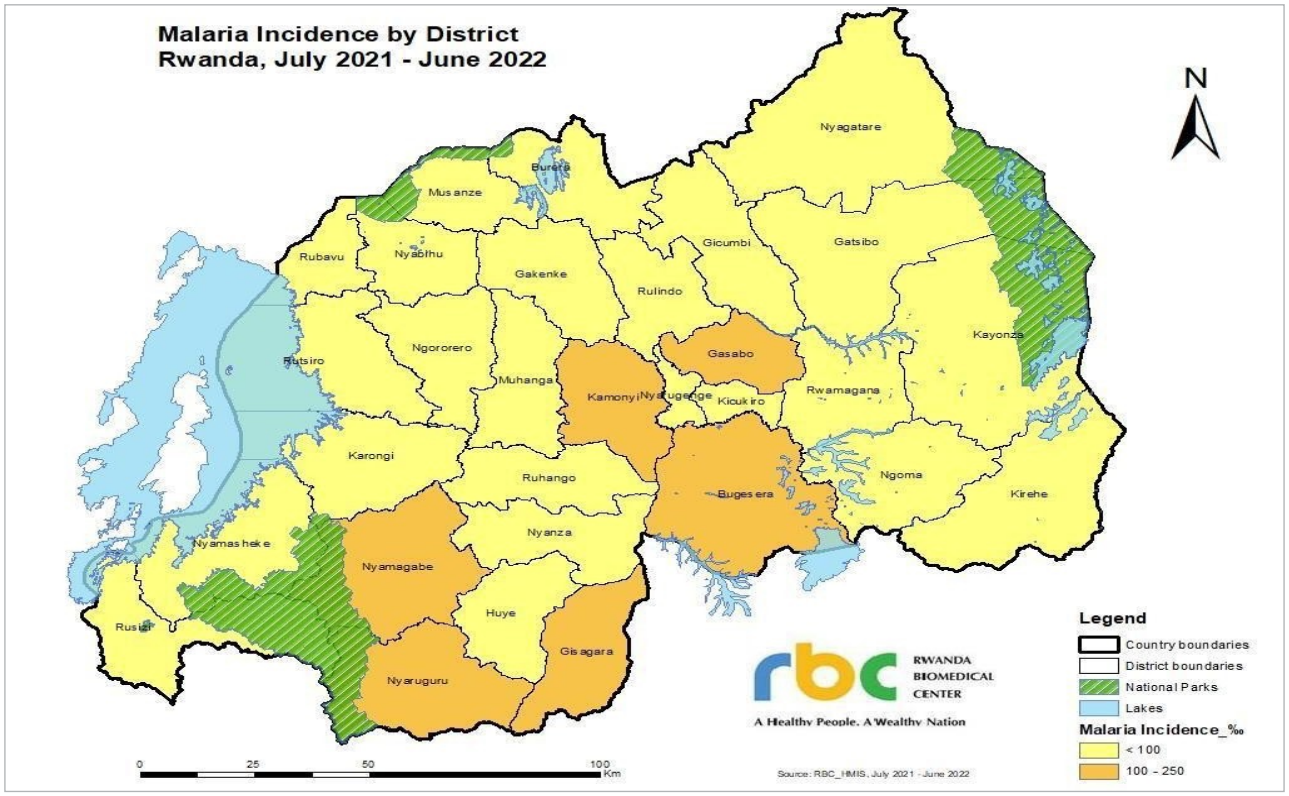
Malaria incidence has been calculated using the average medium projected population of 2021 and 2022. Data shows that the national malaria incidence in Rwanda reduced from 114 cases per 1,000-person year in FY 2020-2021 to 76 cases per 1,000-person year FY 2021-2022.

Figure 34: Trends in Malaria Incidence per 100 Persons Year, 2008-2022



In FY 2021-2022, the malaria incidence decreased in Rwanda, with only six districts having an incidence greater than 100 per 1000 persons per year, compared to 12 districts in the previous year. The districts with the highest incidence rates were Nyaruguru, Nyamagabe, Kamonyi, Gisagara, Bugesera, and Gasabo, with none having an incidence greater than 250 per 1000 persons per year.

35: Malaria Incidence (per 1000) by District, FY2021-22



3.1.3.4.3. Malaria Morbidity

During the FY 2021-2022, malaria OPD cases represented 5% of all OPD new cases of consultation compared to 9% reported in FY 2020-2021. The proportional morbidity of malaria varies across districts from less than 1% in Nyabihu and Burera districts to more than 10% in Nyaruguru, Gisagara and Nyamagabe districts.

3.1.3.4.4. Malaria Test Positivity Rate

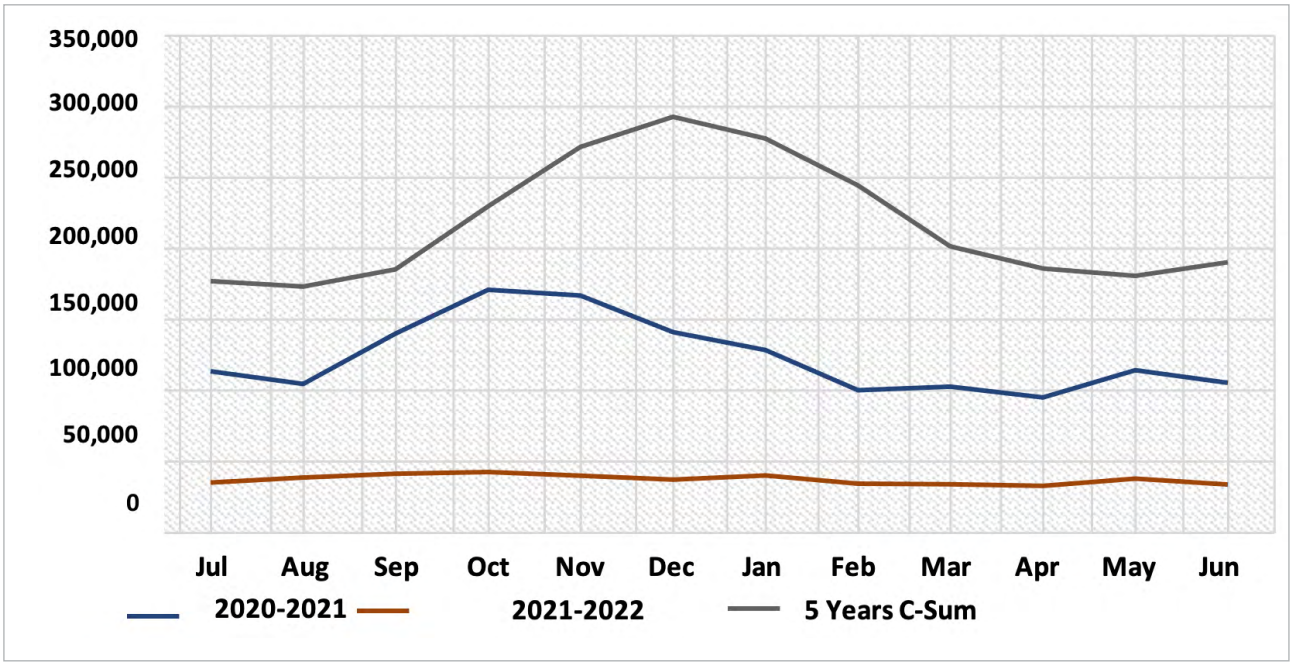
During the FY 2021-2022 at total of 4,462,753 lab tests were performed compared to 5,578,079 in FY 2020-2021, representing a decrease of 20% of lab tests. This includes 2,930,701 blood smears and 1,532,052 RDTs. The number of RDTs done by community health workers was 1,213,769 representing 27% of all malaria tests performed.

The overall slide positivity rate was 22% compared to 27% for last fiscal year. The positivity rate was 45.6% and 8.3 % at community and health facility level, respectively compared to 54% and 17% during the FY 2020-2021. The Annual blood examination rates (ABERs) was 34% compared to 43% during the last FY 2020-2022.

3.1.3.4.5. Uncomplicated Malaria Cases

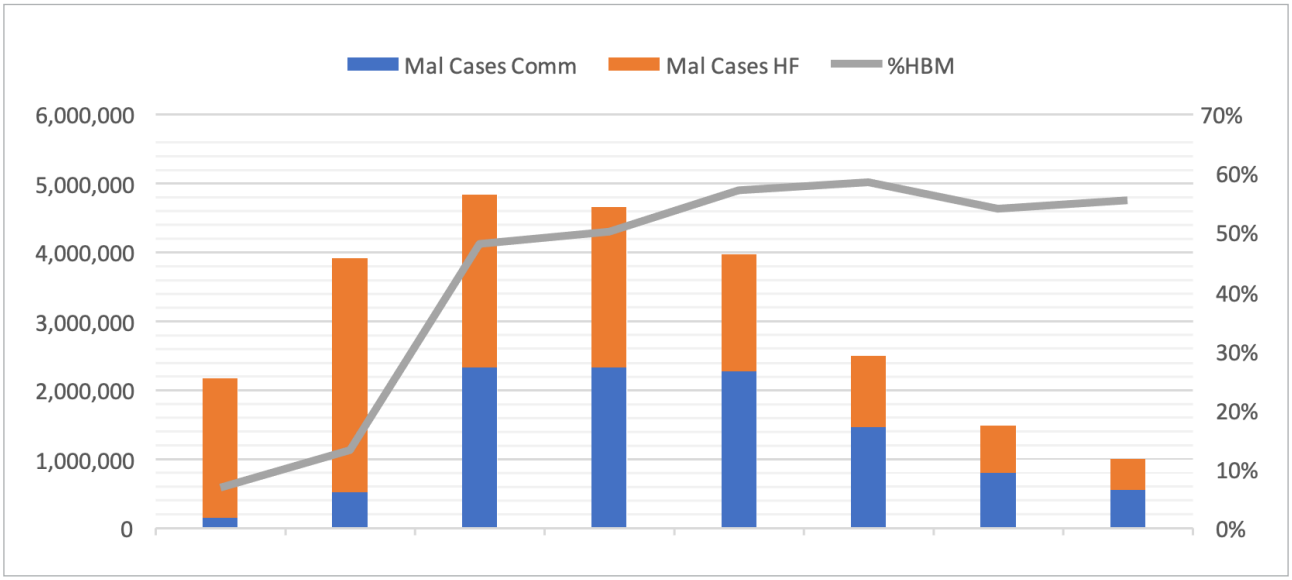
From July 2021 to June 2022 a total of 998,874 outpatients were reported compared to 1,477,696 during the FY 2020-2021, representing a decrease of 32%. Malaria cases treated at the community level represent 56% of all cases. The private health facilities account for 22,401 (2.2%) and health posts accounted for 190,784 (19%). Children under five years accounted for 159,429 malaria cases (16%) and pregnant women 5,727 (0.57%). Figure 23 shows the monthly trends of malaria cases of FY 2021-2022 compared to FY 2020-2021 and the monthly average cases for the last 5 years using the C-sum method. We noticed a reduction of malaria cases during the FY 2021-2022 compared to the last 5 years (Figure 25).

Figure 36:Malaria Cases, FY 2020-2021, 2021-2022 and Previous 5 Years cumulative monthly average



Note: The 5 years average was calculated using the C-Sum method.

Figure 37: Malaria Cases by Level of Service Delivery, 2014- June 2022



3.1.3.5. Malaria Notification and Malaria Death Audits

3.1.3.5. 1.Severe Malaria Cases

Over the reporting period, 1,831 cases of severe malaria were reported at the facility level compared to 2,592 reported in the FY 2020-2021, representing a 29% reduction of severe malaria cases. This indicates that interventions such as home-based treatment of children and adults that contributed to early diagnosis and treatment have been successful in decreasing the number of severe cases and consequently the number of

malaria deaths. The free treatment of poor people in Ubudehe Category I and II also removed the financial barriers for access to health care.

3.1.3.5. 2. Malaria Mortality

Over the FY 2021-2022, 71 malaria deaths were recorded following hospitalization for severe malaria compared to 94 deaths in the FY 2020-2021. The number of malaria deaths was 24 among under 5Years (33%). Report from malaria deaths audit shows that 83 % had severe malaria cerebral form and 17% severe malaria anaemic form. The decrease in malaria deaths may be a result of the malaria HBM interventions and free treatment of malaria for Category I and II of Ubudehe and the quality of care at health facility level.

3.1.3.5. 3. Social Behavior Change Communication

Various SBCC strategies were implemented, including radio talk shows, video clips, and production of IEC materials. The World Malaria Day was celebrated in Rwanda with the theme "Zero Malaria Starts with Me," highlighting the need for continued investment and sustained political commitment for malaria prevention and control.

3.1.4. Neglected Tropical Diseases (NTD)

Rwanda seeks to eliminate NTDs by 2024 through: The Elimination of schistosomiasis, Human African Trypanosomiasis, Onchocreciasis, Trachoma, Lympatic filariasis, Yaws, and Leprosy; The elimination of Podoconiosis (ibitimbo) in endemic Districts with <1% prevalence of untreated Podoconiosis among individuals aged ≥ 15 years and > 95% of lymphoedema cases are treated adequately; reducing by 100% all deaths related to rabies (Zero death of dog-mediated rabies) and reducing:

- to <20% the prevalence of intestinal worms
- by 20% the morbidity of tungiasis (jigger disease),
- by 25% the morbidity of scabies and Cysticercosis/Taeniasis
- by 50% the morbidity and mortality of snake Bites Envenoming

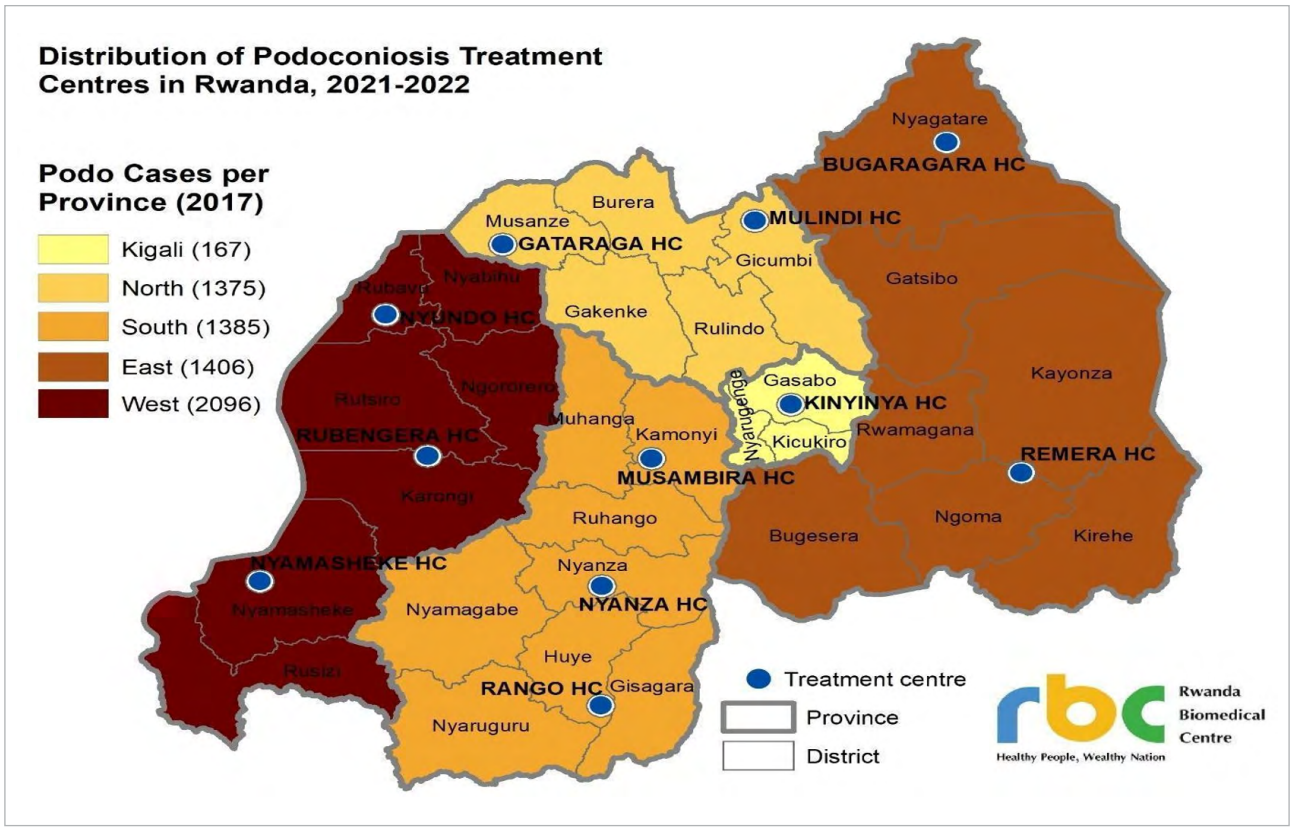
To achieve all the above objectives, the following interventions are implemented: community-based re-mapping of STH and Schistosomiasis, Mass Drug Administration (Mass Deworming), Multi-Sector Response to NTDs, Awareness Activities and Submission of HAT Elimination Dossier to WHO.

The following section provides details of achievements.

3.1.4.1. Scale-up Access to NTDs Interventions, Treatment and System Capacity Building

In this fiscal year, eleven (11) Podoconiosis treatment centers were established to provide screening, treatment and preventive services nationwide with currently a total of 248 patients are enrolled for podoconiosis treatment services (Figure 38).

Figure 38: Distribution of Podoconiosis Treatment Centers in Rwanda, 2021-2022



In line of improving the quality of care and treatment to people with Podoconiosis, the National Treatment Guidelines, awareness materials and reporting tools were developed.

In addition, twenty-two health professionals (11 Nurses and 11 Physiotherapists) were trained on the management of podoconiosis in November 2021.

3.1.4.2. Scale up NTDs Integrated Care and Treatment Interventions

a. **Routine Supply Chain:** Distribution of NTDs drugs including Mass Campaign drugs are integrated in the national supply chain of other medicines. Active Distribution (AD) is usually the approach used to take medicines from central level to districts or Districts level warehouses order and pick drugs for their districts (passive distribution).

b. **Special Supply Chain:** In case of emergency, a program can hire vehicles and take drugs to those district level warehouses. The last option was used in this Fiscal year because drugs reached the country in delay compared to schedule distribution campaigns.

c. **Innovative Supply Chain:** Drones from the Zipline company have supported the delivery of campaign and routine but emergent medical products (anti-rabies vaccines) in remote areas when there was a stock-out or emergency case.

d. **Mass Drug Administration Supply Chain:** The Rwanda Ministry of Health has partnered with pharmaceutical companies to increase drug donations for at-risk populations, including adults aged 16 and above, to eliminate NTDs in line with the country's and WHO's plans. In 2021, there was a remarkable increase in drug donations, including drugs for the adult population. However, the donation of Albendazole from GlaxoSmithKline dropped in 2022 because WHO provided more efficacious Mebendazole 500mg

for trichuris trichiura, which is still prevalent in 10 districts despite 12 years of mass deworming using Mebendazole 50 mg in children aged 12 to 59 months and Albendazole 400mg in children aged 5 to 15 years. The top 10 districts with trichuris trichiura occupy 90% of all cases in the country.

3.2. NCDs Awareness Raising, Prevention, Early Detection and treatment

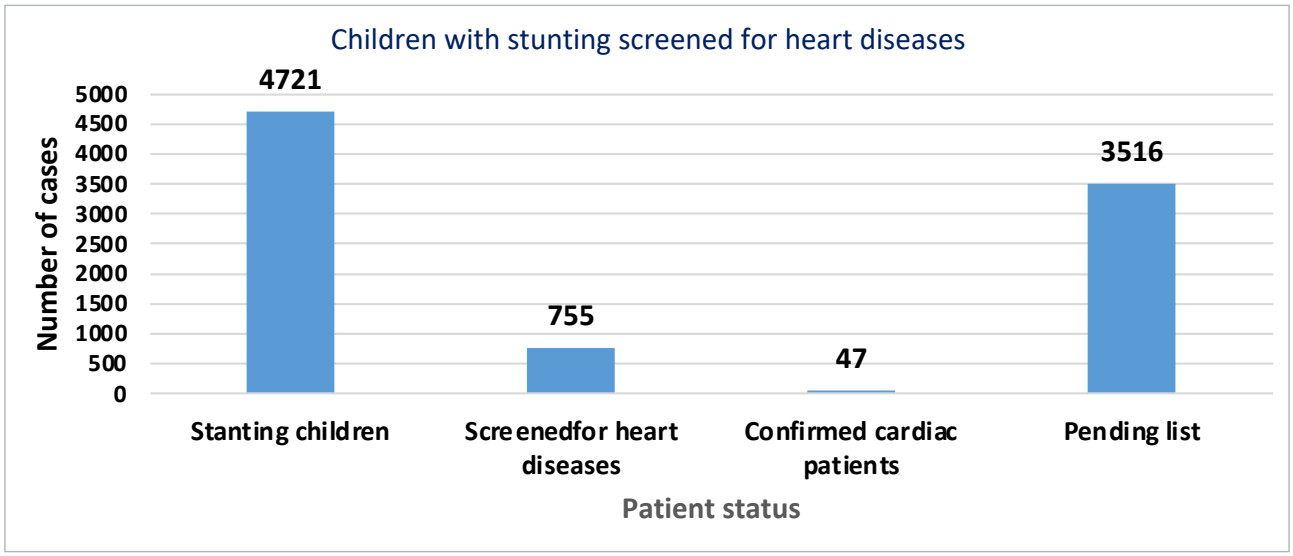
3.2.1. Community awareness about NCDs risk factors

In the period July 2021-June 2022, over 2 million people underwent NCD community medical check-ups, with 5% of them suspected positive and further tested for diabetes and blood pressure. Public education focused on predisposing factors for NCDs such as tobacco smoking, excessive alcohol consumption, unhealthy diet, and insufficient physical activity, and celebrations of global world diseases-specific days were used to enhance community awareness and screening campaigns.

3.2.2. NCDs Early Detection at Primary Health Care level

In the FY 2021/2022, 7,246 primary school students and teachers received education on oral hygiene. A national-wide community check-up was conducted for 2,452,805 people, of which 115,259 (5%) received further follow-up related to abnormal screening findings. Additionally, a screening campaign for Rheumatic heart diseases and congenital heart diseases was conducted among malnourished children, and 8 were found to have rheumatic heart disease while 39 had congenital heart diseases and were referred to cardiologists for treatment.

Figure 39: Children with stunting screened for heart diseases from July 2021 to June 2022



Facility-based breast and cervical cancer screening

The number of women screened for cervical cancer has been increasing over the past five years, reaching 142,432 women screened in the 2021/2022 fiscal year. Breast cancer is the most common type of cancer in Rwanda, and a clinical breast exam (CBE) is used for early detection in environments with limited resources. CBE is combined with cervical cancer screening in women's cancer early detection clinics and integrated into maternal and child health services for women aged 30 years and above. The number of women screened for breast cancer since July 2017 is also being monitored.

3.2.3. Non-communicable Diseases Care and Treatment

The Ministry of Health has successfully increased the number of patients enrolled for hypertension, asthma, diabetes, and cardiac surgery, while also providing histopathology and cancer diagnosis services. They have also established a patient navigation system, conducted training for healthcare professionals, and provided palliative care services. In addition, hospitals and clinics now certify causes of death using the standardized MCCoD form, and cervical cancer screenings are being provided in 28 hospitals and 239 health centers.

3.2.4. Occupational therapy, Physiotherapy, Prosthetics, and Orthotics Service

The Ministry of Health has upgraded four health facilities, including Rilima Specialized Orthopedic Rehabilitation Hospital and Gahini Rehabilitation Centre, to offer better services to people with disabilities.

4,622 patients were referred to Gahini Rehabilitation Centre, where 46 males and 364 females with high disabilities risks were operated on, and 4,102 orthopedic appliances, including 384 Steenbeek Foot Abduction Braces, were distributed. Additionally, 221 children with cerebral palsy and other neurological cases were rehabilitated in semester one of 2022 at Gahini Rehabilitation Center, and about 708 people received occupational therapy services at HVP-Gatagara Nyanza and HVP-Gatagara Gikondo.

3.2.5. Oral Health, Eye Health, Ear and hearing care

Table 13 : Oral, eye, ear and hearing diseases

Cases	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022
OPD oral diseases	599,909	713,033	826,584	889,498	1,334,768	1,061,902
OPD eye diseases cases	520,191	327,953	232,786	616,431	840,613	948,596
Cataract surgical rate per one million population	269	313	510	374	452	600.4
OPD Ear and Hearing diseases	110,113	124,234	148,638	166,792	238,239	177,395

3.2.6. NCDs Monitoring, Evaluation, and Research

3.2.6.1. National NCD Electronic Medical Records (EMR)

In the last fiscal year, the Ministry of Health focused on upgrading electronic medical record systems to improve patient care and follow-up. Tools such as the cancer registry, NCD tracker tool, and eye tracker tool were initiated to collect and analyze data on cancer patients, non-communicable diseases, and eye cases. The trauma registry was also expanded to two additional hospitals, and the civil registration and vital statistics system was utilized countrywide to register births, deaths, and causes of death. The Eye Tracker Tool was implemented in all health centers, which increased the reporting rate of eye cases from 46% in 2019 to 85% in June 2022.

3.2.6.2. NCD related research

Over the course of the last fiscal year, to increase the evidence informing NCDs programming in Rwanda, different research has been one was completed and eight are still undergoing from June 2021 to July 2022.

3.2.6.3. Injury registry

Currently, the trauma registry is underutilization in 6 main hospitals (CHUB, CHUK, RMH, Ruhengeri RH, Kibungo R, H, and Kibuye RH) and 2 Hospitals were added in this fiscal year.

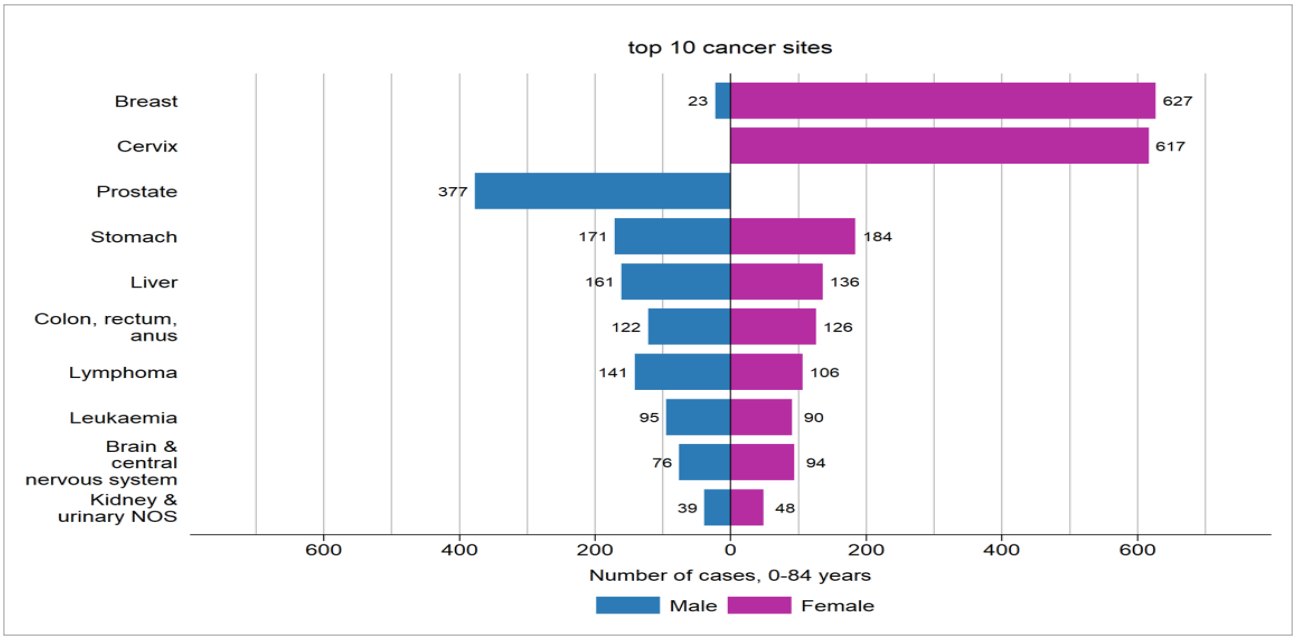
Table 14: Non-Communicable Disease and Injuries

Non-Communicable Diseases and Injuries	Baseline	Target 2022	Status June 2022
Percentage of NCD combined high-risk factors in the population aged between 15-64 years	16.4	15	7.1
Percentage of reduction of premature mortality (under 40 years old) due to NCDs (Cancer, HTA, and diabetes)	NA	50	NA
Percentage of reduction of premature mortality (under 40 years old) due to NCDs due to road traffic accidents (RTA) as the leading cause of non-intentional injuries	NA	50	NA
Teeth and gum diseases morbidity rate at the health facility level	4%	2.07%	4.5%
Eye diseases problem morbidity rate at the health facility level	3	<2	2.5
Cataract Surgical rate (number of cataract surgeries per million)	400	700	600.4
Age-standardized prevalence of current tobacco use among persons aged 15 years and older (outcome)	12.9	9.03	3.9%
Age-standardized prevalence of overweight and obesity in persons aged 18+ years	17.1%	<17.1%	18.6%
Proportion of new cases treated in health facilities for mental disorders	0.1	0.2	0.4

3.2.6.4. Strengthening of the National Cancer Registry

In 2020, the incidence of cancer diseases was dominated by breast and cervical cancers both representing 26% of all cancer cases in both sexes, followed by prostate cancer in males with 377 new cases, stomach and livers cancers with 355 and 297 new cases respectively.

Figure 40: Top 10 new cancer cases in 2020.



Source: Rwanda cancer registry 2022.

3.2.6.5. Strengthening the death registration in community deaths and at Health Facility

In Rwanda, a large number of deaths occur outside health facilities and are often not notified and recorded in the CRVS system in a timely way, resulting in the under-reporting of deaths and causes of death and incomplete vital statistics on mortality. From July 2021 to June 2022 about 1,508 Cell executive secretaries were trained on Verbal Autopsy and provided with tablets to facilitate conducting VAs from Eastern, Southern, and Western provinces.

3.3. Mental Health

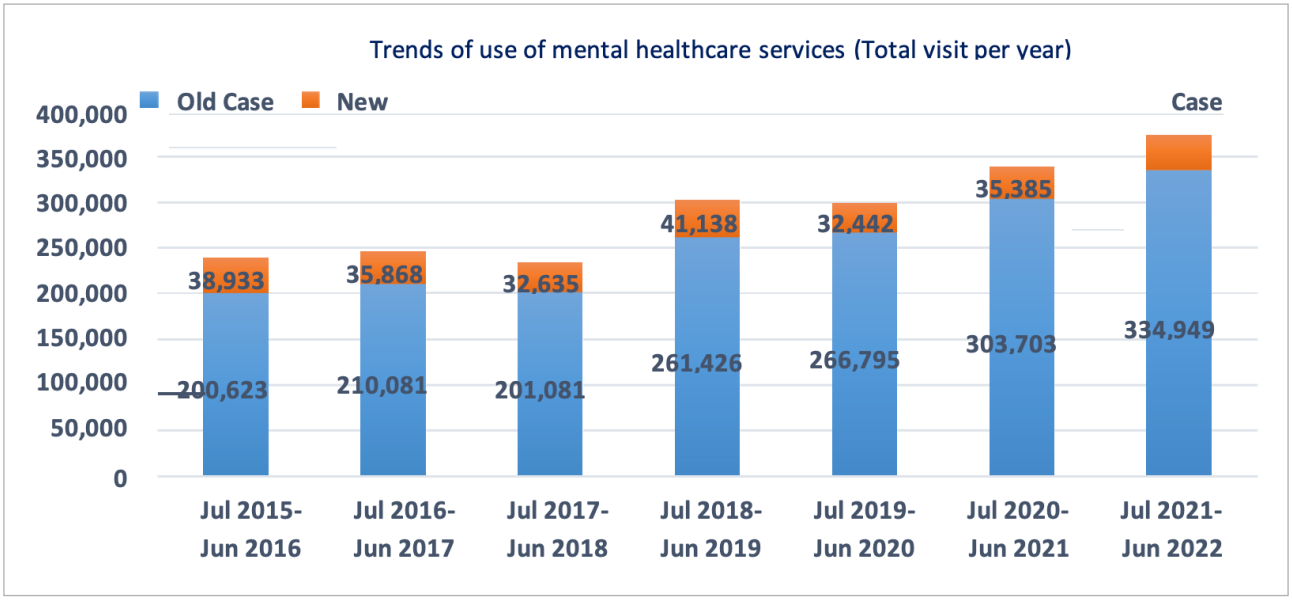
The number of patients with mental health has increased significantly from 110,498 patients in 2018 to 343,086 patients in 2021. About 30,000 to 40,000 new cases consult for mental health care for the first time every year by which 74%) received care at health centers 19%) received care at district hospitals and 1%) with mental disorders received care and treatment in private health facilities during the fiscal year 2021/2022. This increase was due to the increased awareness on mental health in the general population and the integration of mental health in the primary health care system through the decentralization framework.

3.3.1. Care and treatment of mental, neurological, and substance use disorders

The mental health services have been decentralized and integrated into primary health care to enhance accessibility. There are currently two specialized mental health services in the country, with a total of 494 inpatient beds. The average bed occupancy rate for these centers was high before the pandemic. As a result, there is a concern about the capacity, and a project to construct a National Mental Health Centre was initiated in Gasabo District in 2020-2021.

The mobile clinic and motorcycles, alongside 10 district hospitals, were used to conduct outreach in 64 health centers, providing care to 1,084 people with mental disorders. The Baho Neza-Mental Health project, in partnership with the Imbuto Foundation, provided care to 111 people in the mobile clinic.

41: Use of Mental Health Care Services for last six years



3.3.2. Clinical mentorship

In the fiscal year 2021/2022, specialized mental health clinicians conducted clinical mentorship visits to 20 decentralized hospitals (Gatunda, Ngarama, Gahini, Kibungo, Rwamagana, Masaka, Kabgayi, Ruhango, Nyanza, Kabutare, Munini, Gihundwe, Bushenge, Kibuye, Maranda, Gisenyi, Byumba, Gatonde, Ruhengeri, and Kibagabaga) to strengthen their capacity to manage complicated cases and refer patients when necessary. The hospitals included

3.3.3. Capacity building and training

Several trainings and mentorship programs were conducted to improve mental health services in Rwanda, including:

- Training 44 clinical psychologists and one mental health nurse in narrative therapy.
- Training 46 mental health professionals and 523 health care providers in adolescent mental health.
- Providing media briefings to 245 youth volunteers and 59 chaplains on mental health interventions during the commemoration of the Genocide against Tutsi.
- Conducting a training for 92 social workers and mental health professionals on HIV and mental health integration.
- Receiving training for 168 call center operators and 24 helpline operators.
- Providing supportive supervision and mentorship to improve HIV and mental health integrated care in 25 district hospitals.

3.3.4. Genocide commemoration

Trauma management during the commemoration week: During the week of 7-13 April 2022, a total number of 1,923 people were treated. Among 933 (48.5%) cases were supported at the community level, 483 (25.1%) cases were handled at health centers and 382 (19.8%) cases were managed by call centers and helplines operators, and the remaining 125 (6.5%) cases were referred to district hospitals, provincial and referral hospitals for appropriate mental health care

3.3.5. Prevention of mental, neurological, and substance use disorders

3.3.5.1. Sensitizing the population on mental health and substance abuse issues

In October 2021, the Ministry of Health collaborated with stakeholders to observe World Mental Health Day with the theme "Hari icyizere nyuma yo kugira uburwayi two mu mutwe. Mureke twivuze," providing radio and TV talks on mental health in partnership with UNICEF. The Ministry of State/MOH also celebrated the international day against Drug Abuse, with radio and TV broadcast programs and awareness materials distributed to schools and youth centers. The majority of the awareness activities were conducted in schools, followed by health facilities.

3.3.5.2. School-based mental health program

The Ministry of Health collaborated with the Ministry of Education to launch a school-based mental health program in December 2020. In the current fiscal year, 20,697 school staff from 994 schools were trained, and 346,324 students attended mental health awareness sessions. Additionally, 12,510 students were screened, with 10,302 receiving onsite care and 2,122 referred to nearby health facilities for further assessment and follow-up. The program also identified 781 school staff, screened 524 of them, and provided support to 437, with 273 being referred to health facilities for follow-up.

3.3.5.3.Mental health and HIV

The prevalence of drug dependence is high among people in HIV care. To address this, mental health and HIV services have been integrated to ensure prevention, treatment, care, and support for those with both HIV and mental health problems. In this effort, 92 social workers and mental health professionals were trained on HIV and mental health integration, and supportive supervision and mentorship to improve HIV and mental health integrated care was conducted in 25 district hospitals across the country.

3.3.5.4.Rehabilitation of ex-drug users

In the Fiscal year, 2021/2021 about 899 youth completed their rehabilitation process, and RBC-MCCH and MH Divisions had an interactive talk with the graduates to promote and facilitate behavior change with the ultimate goal of preventing relapse or recidivism.

3.3.5.5.Mental health in the workplace

In collaboration with the Ministry of Public Service and Labour, an awareness meeting took place with the purpose to raise the understanding of mental health well-being in the workplace through the available National Policy on occupational safety and health. There is a plan to train safety and health committee members from public institutions for the promotion of mental well-being, early detection, and first psychological support to people who may experience mental health conditions in the workplace

3.3.5.6. Homeless mentally ill people

During this fiscal year, activities were undertaken to assess the issue of homeless mentally ill people in Rwanda, the types of support needed the and activation of resources to address treatment and reintegration barriers.

3.3.5.7. Census of homeless mentally ill people

From February to March 2022 the MHD together with CHWs conducted a census of people suffering from mental issues found on the street and it was observed that the Western Province enumerated the highest number of homeless mentally ill with 902 people and the second is Southern Province with 769 people followed by the Eastern Province with 551 People. The Northern Province has 289 people and the City of Kigali registered the lowest number of 139 people.

3.3.5.8. Promotion, prevention, and rehabilitation programs

Promotion activities create a positive change, help address unhelpful behaviors, nurture respect for human rights, etc. RBC/MHD developed awareness materials and disseminated them in the community; aiming at increasing understanding and recognition of mental health problems, discrimination, and stigmatization of people with mental problems, help-seeking seeking behavior promoting promote supportive and inclusive communities.

3.3.5.9. Challenges

The Rwanda mental health sector has faced various challenges over the last two decades, some of which have been addressed while others remain pending. The unresolved challenges include sustandard and inadequate mental health infrastructure in district hospitals, insufficient budget for mental health activities affecting priority areas, delayed appointment of mental health providers, stigma around mental health clients and services, lack of health insurance for identified cases, pending approval of the Mental Health Law, challenges with transport facilities for mental health officers, and a need for appropriate counseling rooms for privacy. Additionally, time constraints and the neglect of the mentally ill in some families were identified as challenges.

3.4. Health Promotion, Prevention and Environmental Health

3.4.1. Awareness and Community Engagement campaign activities

The Rwanda Health Communication Center (RHCC) conducted various activities to increase awareness of health promotion and disease prevention during the fiscal year 2021/2022. This included interactive radio talk shows, TV healthy tips, feature stories, short videos, and communication materials distributed to health centers. The RHCC also conducted community engagement campaigns on COVID-19, World AIDS Day, World Diabetes Day, Malaria International Day, International Day against Drug Abuse and Illicit Trafficking, World TB Day, and MCH week, among others. The RHCC organized a mass media tour campaign on good practices in nutrition, hygiene, positive parenting, and early learning in 8 Stunting Prevention and Reduction Project (SPRP) Districts. The RHCC also had a Call Center to respond to issues and rumors about major concerns on COVID-19 through RBC interactive chat, emails, and social media.

3.4.2. Production and distribution of health communication tools

Communication materials such as banners, tear teardrops posters, and flyers on COVID-19 prevention among pregnant and lactating mothers have been produced and disseminated.

Educational videos with influencers' messages, electronic billboards, and other communication materials on how to mitigate the spread of the COVID-19 virus and acceptance of COVID-19 vaccine were produced.

3.4.3. Risk Communication and Community Engagement (RCCE)

During the fiscal year, RHCC facilitated the registration and approval of communication tools from sector development partners and supervised their upload to the Rwanda Compass Portal. A total of 230 communication tools were uploaded. RHCC also organized Risk Communication and Community Engagement Technical Working Groups and Health Promotion, Social Determinants, and Environmental Health Technical Working Group workshops to review communication materials on a regular basis, including those related to COVID-19 vaccines and Multi-Hazard plans, RMNCH and Malaria services, ECD Nutrition, and WASH.

CHAPTER 4:
ASSURING HEALTH SECURITY

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4.1. Outbreak and disaster prevention

Rwanda uses both Indicator-Based Surveillance (IBS) and Event-Based Surveillance (EBS) to detect priority diseases, conditions, and events. In 2021-2022, the country reviewed and contextualized the new guidelines for its Integrated Disease Surveillance and Response (IDSR) strategy, aiming to improve its disease detection and response capabilities. A total of 46 priority diseases, conditions, and events were identified in the 3rd edition of IDSR technical guidelines. Public Health Emergency Operation Centers (PHEOC) were established at national and province levels, and a PHEOC manual, strategic plan, and SOPs were drafted. An EBS metrics tracking tool was also initiated to record events and monitor detection, notification, and response time. During this period, 4082 immediate reportable diseases were identified, of which 49% were reported in a timely and proper manner, with measles, hemorrhagic fever, and food poisoning being the most reported suspect diseases.

4.2. Outbreak and disaster detection, response and recovery

During FY2021-2022 period, the unit responsible to outbreak preparedness and response responded to seven (7) outbreaks countrywide; namely, covid-19, food poisoning, cholera, measles, rift valley fever (RVF), typhoid fever and epidemic typhus. There was a total of 1,284 cases from all the 7 outbreaks (excluding covid-19 cases) and among them, 43 (3.3%) cases died. Among the 7 outbreaks responded to, food poisoning was the most predominant outbreak with 21 events in 18 different districts and Gasabo district recorded 5 among 21 events.

The highest case fatality rate among food poisoning outbreaks was caused by consumption of a locally made banana brew (Umuneza) in Gasabo district (73%) and Bugesera district (25%) and the consumption of a dead pig by one household members in Rutsiro district (40%).

4.3. COVID-19 surveillance and response

Rwanda responded to the COVID-19 pandemic by establishing a multisectoral team, improving activities at points of entry, laboratory, risk communication, community engagement, vaccination, surveillance, and case management. As of 30th June 2022, there were a total of 131,059 cases and 1,460 deaths in Rwanda. The country has three COVID-19 treatment centers equipped with necessary equipment and drugs such as Ivermectin and Favipiravir. Home-based care and monitoring by healthcare workers have also been implemented. Rwanda's containment of COVID-19 has been facilitated by a multi-sectoral approach, improved case detection, reinforced case management, and an extensive COVID-19 vaccination campaign with a goal of vaccinating 30% of the population by the end of 2021 and 60% by the end of 2022.

4.4. Surveillance and Response of food and waterborne diseases events

The five priority food and waterborne diseases and events monitored through the IDSR system are food poisoning, typhoid fever, cholera, bloody diarrhea (shigellosis), and non-bloody diarrhea.

Pathogenic bacteria were isolated in 35% of cultures performed from July 2021 to June 2022, with typhoid fever, shigellosis, and cholera representing 17%, 3.9%, and 1.1% respectively. Other pathogenic bacteria isolated were E. coli, Enterobacter, enterococci, and staphylococcus

Table 15 Pathogenic bacterium isolated from food and waterborne cultures

Pathogenic bacterium isolated	Number	Proportion
Acinetobacter baumannii	8	2.8%
Coagulase negative Staphylococcus	93	32.9%
Enterobacter spp	9	3.2%
Enterococci SPP	9	3.2%
Escherichia coli	11	3.9%
Klebsiella pneumoniae	23	8.1%
Proteus mirabilis	2	0.7%
Pseudomonas aeruginosa	2	0.7%
Salmonella Spp	48	17.0%
Shigella spp	11	3.9%
Staphylococcus ssp	57	20.1%
Streptococcus spps	7	2.5%
Vibrio cholerae, type 01 Ogawa	3	1.1%
Total	283	100.0%

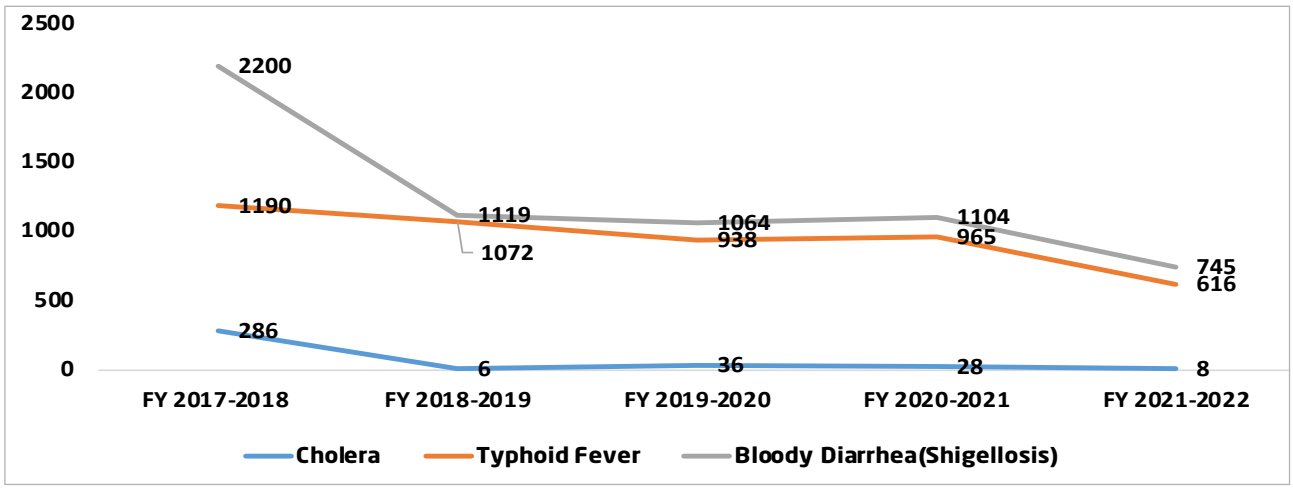
4.4.1. Food poisoning

From July 2021 to June 2022, a total of 27 outbreaks were reported in Rwanda, including COVID19, Rift Valley Fever, and Measles. Out of these, 21 outbreaks were food poisoning events reported from 15 districts, with 924 cases and 20 deaths. Most of these food poisoning events were associated with locally fabricated alcoholic drinks, dead animal meat, and traditional sorghum beverage. About 42% of cases and 50% of related deaths occurred in the City of Kigali. Pathogens were not identified in some of the events where incriminated foods were not tested.

4.4.2. Shigellosis and Salmonellosis

Compared to previous years, the fiscal year 2021-2022, reported suspected cases of cholera, typhoid fever and shigellosis decreased.

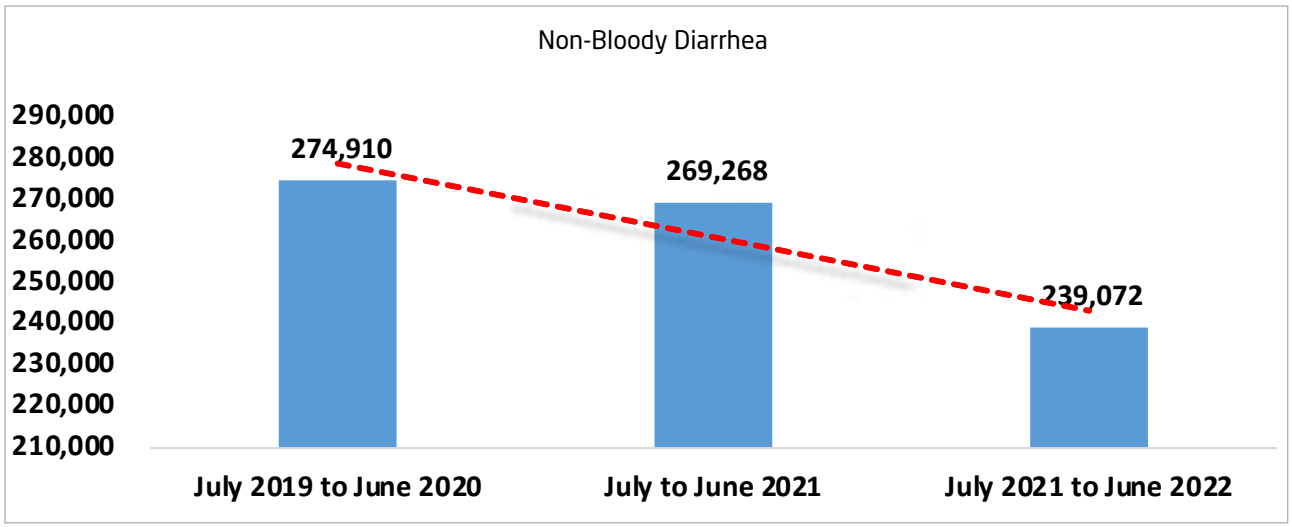
Figure 45: Distribution of reported suspect cases of typhoid fever and shigellosis FY 2021-2022



4.4.3. Cholera

In FY 2021-2022, there were 74 and 81 suspected cases of cholera respectively, with 3 cases confirmed each year. The cumulative weekly cases of non-bloody diarrhoea reported through the eIDSR decreased by 2.1% in FY 2019-2020 to 2020-2021 and by 11.2% in FY 2020-2021 to 2021-2022. This decrease could be attributed to the COVID-19 preventive measures such as handwashing and hand shaking.

Figure 46: Distribution of reported suspect cases of non-bloody diarrheal from July 2021 – June 2022



5

CHAPTER 5:

HEALTH SYSTEMS: INPUTS AND ACTIONS

CHAPTER 5: HEALTH SYSTEMS: INPUTS AND ACTIONS

5.1. Health Workforce

As of June 2022, there were 1,951 physicians, 11,325 nurses, and 1,654 midwives working in both private and public health facilities in Rwanda. Tables are provided to show the ratio of health professionals per population in Rwanda. The tables below present further data of health professionals' ratio per population in Rwanda.

Table 16: Key health professionals per population in 2022

Indicator	Baseline 2017-2018	Number 2021-2022	Ratio Per Population 2021-2022		Health worker density per 1,000 Population
			Actual	Target	
Population 2021		13,252,274			
One physician/population	1/10,055	1,951	1/6793	1/ 9,000	
One Nurse/Population	1/1,094	11,325	1/1,170	1/ 900	1.1
One Midwife/Population (women aged from 15-49)	1/ 4,064	1,654	1/2,272	1/ 3,500	
Total		**14,930**			

Source: RHMIS July 2022

The health worker density per 1,000 populations in Rwanda is **1.1 skilled health workers** (physicians, nurses and midwives) while the recommended minimum WHO health workforce density is **4.45/1,000** to achieve the SDGs by 2030.

In the FY 2021-2022, The Secretariat has registered some other achievements relevant to its mission and responsibilities as follows:

5.1.1. Ensuring the Quality of Health Professional Teaching

Nine hospitals (Kibungo,Ruhengeri, Rwamagana, Kabgayi, Kibagabaga, Kibogora, Butaro, Nyamata, Byumba) have been approved as Level-2 Teaching Hospitals for the first phase of launching in the 2022/2023 fiscal year, including. In addition, a revision of teaching hospital organizational structures has been conducted and approved by the cabinet.

Oversight of Health Professional Education and Training

The Ministry of Health and the Ministry of Education have approved standards to measure the quality of healthcare training institutions. These include Teaching Institution Standards, Health Professional Teaching Hospitals Standards, and Level 2 Teaching Hospital Standards.

Infrastructure, site expansion and Equipment for Quality Health Professional Education

The HRHS recognizes that quality infrastructure and equipment are essential for fostering quality health education. To this end, they have collaborated with the Imbuto Foundation to construct a modern maternity at

KABGAYI District Hospital, which will serve as a teaching site for midwifery, gynaecology, and obstetrics. The HRHS has also invested in health professional teaching laboratories at the CMHS/ UR and equipped two smart classrooms to improve the teaching environment for health professionals and enhance the quality of graduating health professionals.

Capacity Building for Institutions Providing Health Professional Education and Training

Government of Rwanda has invested in providing advanced care services within the country to reduce the financial burden of referrals abroad and become a medical tourism hub in the region. To address this, the University of Rwanda's College of Medicine and Health Sciences in collaboration with HRHS and multiple stakeholders has launched 13 new training programs, these programs consist of 7 fellowships, including the 4 residencies, 1 MSc. and 1 PhD, for Adult Cardiology, Paediatric Cardiology, Gastroenterology and Hepatology, Gynaecology Oncology, Nephrology, Endocrinology, Maternal-foetal Medicine Fellowships, Paediatric Surgery, Neurology, Plastic Surgery, Dermatology Residencies, Master of Science in Clinical Anatomy and Doctor of Philosophy in Clinical Anatomy. The aim is to establish these rare services in Rwandan health facilities and train the next generation of practitioners and trainers to build a sustainable system of tertiary care.

Coordination of Faculty Recruitment and Management

The HRHS has hired 6 specialized faculties with expertise in Interventional Cardiology, Gynaecologic Oncology, Paediatric Cardiac Surgery, and Radiology to support sub-specialty training in Rwanda. These faculties are involved in curriculum development, preparing the teaching environment, treating patients, and promoting research. Volunteer faculty from different specialties have also contributed to patient care and knowledge exchange. The HRHS provides logistical support to the faculty and has developed SOPs to guide the faculty recruitment and management process.

Attracting Students to Enroll in Health Profession Education

The HRHS is prioritizing quality clinical practice education and training to enhance the preparation of human resource capacity in the health sector in Rwanda. They have developed and validated a harmonized Clinical Placement Practice Manual for health professional students to serve as a national guide for clinical placement practice. This is expected to resolve existing challenges and limitations associated with the lack of harmonization in students' placements and improve mentorship mechanisms, while also inspiring future generations to join health professional education programs.

Continuous Professional Development in the Public and Private Health Sectors

The HRHS has developed a Quality Improvement course to provide in-service training for healthcare providers, enabling them to improve operational processes, health outcomes, and patient satisfaction. The course has been uploaded to the Ministry of Health's E-learning platform, and over 100 health professionals are currently pursuing it. The course will be considered for credit as a Continuous Professional Development (CPD) course upon completion.

5.1.2. Academic Partnership at National, Regional and International Level

These partnerships have raised funds to support various activities including recruitment of faculty, expanding teaching sites, and equipping health education institutions to enhance the quality of training provided, ultimately leading to improved healthcare services.

5.2. Health Products, Medicines and Commodities

5.2.1. Food and Drugs Quality and Safety Regulation

Rwanda FDA is responsible for regulating a wide range of products including medicines, vaccines, medical devices, cosmetics, tobacco products, and clinical trials. The agency's fiscal year 2021-22 report highlights its performance in various areas such as product registration, inspection and licensing, import and export control, clinical trial oversight, adverse drug reaction analysis, post-marketing surveillance, pharmacovigilance, and laboratory quality control testing.

Product registration and Market Authorization

Assessment and Registration of Human Medicine: In the fiscal year 2021-2022, 419 applications were received and 1,138 were assessed, resulting in the registration of 34 products, while 569 applications remain pending assessment for registration.

Assessment and Registration of Medical Devices: In fiscal year 2021-2022, Rwanda FDA received a record 118 product applications for market authorization and registration, but only 30% of them were assessed, resulting in only one product being registered. The agency received 74 applications in the same fiscal year, but none were registered out of the 27 assessed. As a result, 83 product applications are still pending assessment at the end of the financial year.

Assessment and Registration of Vaccines and Biological products: Since its establishment, Rwanda FDA received 66 registration applications and assessed 97% of them, with 16% being registered and granted market authorization by the end of fiscal year 2021-2022. During that fiscal year, nine registration applications were received, seven assessed, and three were registered. The fiscal year ended with two registration applications pending assessment.

Assessment and Registration of Veterinary Medicine and Devices: Rwanda FDA has received a total of 153 applications for registration and market authorization of veterinary medicine and devices since its establishment, with 72% assessed and 5% registered. In the fiscal year being reported, 72 applications were received, 85 assessed, and 5 were registered. The fiscal year ended with 43 product applications pending assessment.

Assessment and Registration of Cosmetics and Household Chemical Products: Rwanda FDA received 253 registration applications since its establishment, with 85% assessed and 28% registered by the end of fiscal year 2021/2022. During that fiscal year, 69 applications were received, 88 assessed, and 40 registered. However, the fiscal year ended with 39 applications still pending assessment.

Assessment and Registration of food products:

The Rwanda FDA received a total of 1,507 food product applications since its establishment, with 98% of them assessed and 33% registered. In the fiscal year 2021-2022, 221 applications were received, with 184 assessed and 245 registered. However, there are still 37 applications pending assessment and 985 assessed but not yet registered.

Inspections:

Rwanda FDA conducts inspections on food facilities and pharmaceutical facilities to ensure compliance with set standards for public health protection. In the fiscal year 2021/2022, the authority received 911 applications for food facility inspection and carried out 1077 inspections including re-inspections and enforcements. Additionally,

105 applications were received for GMP inspection of food manufacturing facilities, with 37 GMP inspections conducted and six facilities awarded GMP certificates. For pharmaceutical inspection, 1,244 applications were received, with 937 new premises inspected, 205 enforcement inspections, and 15 re-inspections conducted. The authority also received 115 GMP applications for pharmaceutical manufacturing facilities, with 74 GMP inspections conducted and 25 facilities granted GMP certificates.

Licensing:

In the fiscal year 2021-2022, Rwanda FDA issued 203 licenses to various food facility categories, including 121 for food manufacturing industries, 4 for food supplement shops, 31 for food wholesaler/outlets, and 47 for food importers. Rwanda FDA has licensed a total of 235 food manufacturing facilities, 93 food wholesalers/outlets, and 28 food supplement shops. The authority also issued 101 licenses for pharmaceutical facilities, including 76 for human retail pharmacies, 15 for wholesale pharmacies, and 7 for manufacturing facilities of medical products. In total, Rwanda FDA has licensed 735 human retail pharmacies, 172 human wholesale pharmacies, 23 veterinary pharmacies, 26 optical shops, 3 orthopaedic shops, and 14 cosmetic shops.

Import and Export Control:

In the fiscal year 2021-2022, Rwanda FDA received and processed a total of 12,818 applications for import visas and issued 12,372 import visas. They also received 10,839 applications for import licenses and issued 10,371 licenses. Additionally, they received 514 applications for export licenses and granted 513 licenses. In terms of inspection, the authority inspected 36,068 consignments, including 23,829 at ports of entry and 12,239 released under seal. The consignments consisted of various regulated products, such as human pharmaceuticals, medical devices, food products, cosmetics, animal feeds, and food supplements.

Pharmacovigilance and food Safety Monitoring:

The given text contains information about the activities of Rwanda FDA (Food and Drug Authority) during the FY 2021-2022. The FDA conducts inspections, issues licenses and import/export visas, and inspects consignments of regulated products. In terms of inspections, the FDA conducted 1077 inspections for food facilities and 937 inspections for pharmaceutical facilities. It also issued 203 food facility licenses and 101 pharmaceutical licenses during the year. Furthermore, the FDA issued 12,372 import visas and 10,371 import licenses, and 513 export licenses were granted. Lastly, the FDA inspected 36,068 consignments, comprising of 23,829 at ports of entry and 12,239 released under seal.

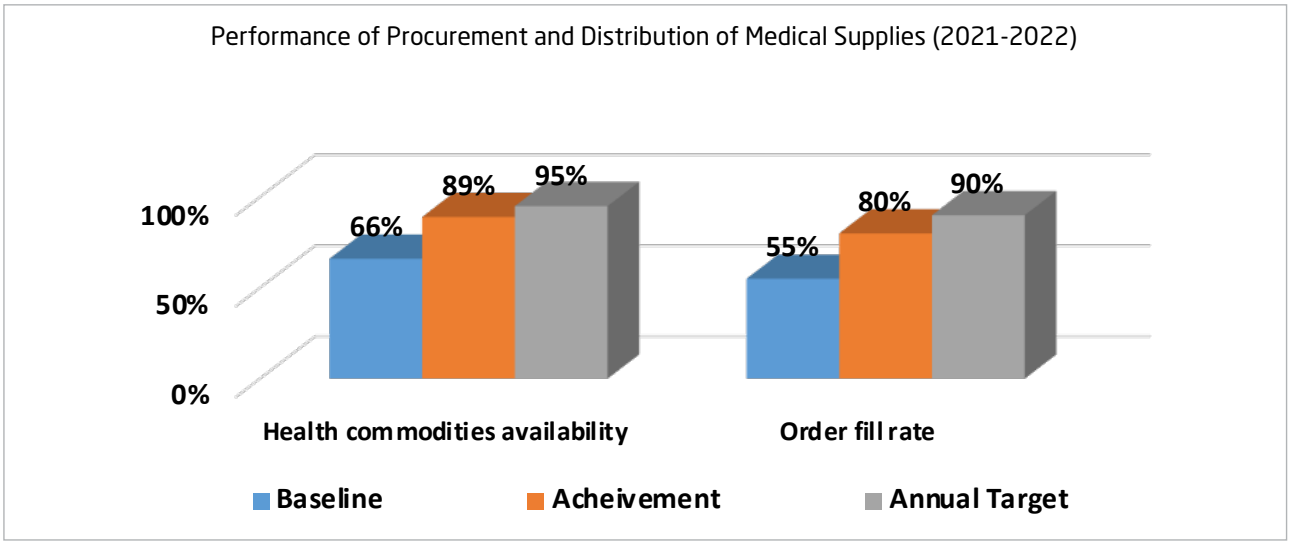
Laboratory Access and Testing:

In the FY 2021-2022, the Rwanda FDA tested 27,709 samples, including condoms, medicines, cosmetics, and various food products. The authority issued certificates of analysis for the accurate test results generated. Additionally, the FDA developed 51 laboratory support documents for food and medicine testing laboratories, in compliance with ISO/IEC 17025:2017.

5.2.2. Supply chain management and distribution

RMS Ltd, with support from its stakeholders and the line Ministry, carried out critical interventions including procurement and inventory management, digitalization of RMS processes, financial management, human resources management, and effective communication and stakeholder engagement. The interventions resulted in successful quantification, procurement, warehousing, and distribution of health commodities, including emergency tenders. The rate of health commodities availability increased from 66% to 89%, and the order fill rate increased from 55% to 80%.

Figure 47: Performance of Procurement and Distribution of Medical Supplies (2021-2022)



Digitalisation: RMS has focused on digitalization and data visibility to increase efficiency and effectiveness. The company has implemented the e-LMIS enhancement project with the support of GHSC PSM, and by the end of the fiscal year, many customers implemented e-LMIS. RMS has installed CCTV, temperature and humidity monitoring systems, and has enrolled in the GS1 standards. The company has also put measures in place to ensure financial sustainability, including increasing sales and recovery rates from clients. The total approved budget was 142,083,783,389 Rwf, out of which only 118,265,213,689 Rwf was utilized, and the budget execution rate is 83%. The non-executed budget is due to the COVID-19 Pandemic and service provider delays.

Human resources management and capacity development

During the FY 2021-2022, the RMS ltd acquired a new workforce through its transparent recruitment, enhanced staff capacity development through skills transfers as well as employee welfare, security, and safety at the workplace. Rotation of the branch Managers has been implemented during this period in all districts to improve service delivery and gain new skills.

RMS has different partners and stakeholders, such as BUFMAR and MEDIASOL, to perform its duties and satisfy its clients, mainly public health facilities efficiently and effectively. Effective communication and stakeholder engagement has been key to driving operations and improving efficiency. Delegations from Mali, Chad, and other development partners Visited RMS Ltd.

5.3. Service Delivery across the health system pyramid

5.3.1. Development of policies, guidelines, and standards to improve services delivery

5.3.1.1. Health services Regulation

MOH in collaboration with its stakeholders has developed the policies, standards, guidelines, and health services packages. These include:

- Revised Ministerial instructions guiding the procurement and distribution of health products
- Guidelines:
  - Rwanda Standard Treatment Guidelines
  - Hypoxemia Screening and Oxygen Therapy administration in Neonates, Children, and Adults
  - Guidelines on criteria for credentialing and privileging of health professionals
  - National Guidelines for establishing health posts
- National List of Essential Medicines for Adults
- National List of Essential Medicines for Pediatrics
- Health Supply Chain Management Training Module foR Hospitals and Health centers, RMS branches and Central level
- Licensing Tool for Private Health facilities
- Law regulating research on a human being

5.3.1.2. Health Facilities Development services

The health facilities are distributed as follow: 115 private dispensaries, 113 general clinics,33 specialized clinics, 28 polyclinics, 9 dental clinics, 6 nutrition cabinets, 4 Private Hospitals, 4 Specialized hospitals, 3 Psychology clinic, 2 laboratories, 1222 Health Posts, Health centers 510, District hospitals 40, Provincial hospitals 4 and Referral hospitals 8.

Table 17: Public Health Facilities in Rwanda in 2016-2022

Heath Facility type	2016	2017	2018	2019	2020	(June 2021)	June 2022
National Referral Hospital	8	8	8	8	8	8	8
Provincial Hospital	4	4	4	4	4	4	4
District Hospital	36	36	36	36	37	39	40
Health Centre	499	503	504	509	510	510	510
Health Post	471	505	703	885	1094	1,179	1,222
Private Dispensary	125	130	130	123	122	122	115
Private Clinics and polyclinic	123	128	128	149	158	180	164
Private Hospital	5	5	8	8	8	8	8
Total	**1285**	**1332**	**1534**	**1735**	**1954**	**2054**	**2067**

So far, 1,222 Health Posts have been established of which 1,165 (95.3%) are First Generation HPs and 57 (4.7%) are Second Generation. Despite, the efforts done, still 62 (5.1%) HPs not operating due to different reasons. Below are some of the issues being faced by some Health Posts:

- Access to clean water is still low in 585 Health posts (47.9%)
- Issue of electricity in Health posts only 818 (67.0%) have access to electricity
- Issue of management and supervision of Health posts where about 597 (48.9%) are managed by Health centers, while 625 (51.1%) Health Posts are managed under the Public Private Partnership (PPP) Model.

5.3.2. Health facilities construction projects

According to national strategies for transformation (NST1), the Construction and upgrading of health facilities with adequate equipment are among the key strategy in the social Transformation pillar; The below tables shows the status of Infrastructure in 2021/2022 from July 2021 to June 2022:

Completed projects:

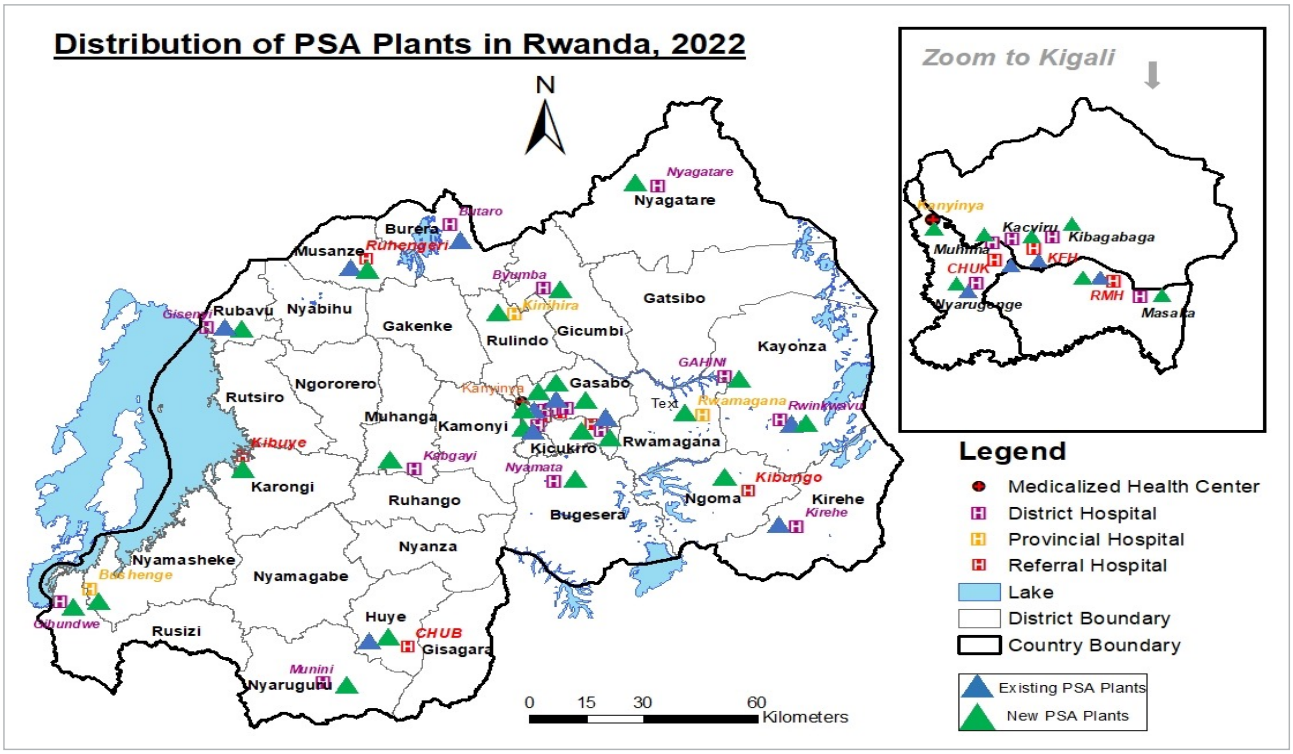
- Construction of Health centers (Gacaca in Musanze District, Kayumbu in Kamonyi District and Shagasha in Rusizi District)
- Construction of additional buildings in hospitals (Maternity block in Kigeme DH and maternity, neonatal and surgery blocks in Kibogora hospital)

Ongoing projects:

- Construction of IRCAD Africa Centre
- Construction of Cyinzuzi HC by Rulindo District
- Expansion of Mibilizi Hospital Phase 1- Maternity block
- Construction of maternity and neonatology building at Gakoma DH with 47 beds
- Construction of a maternity ward at Kibagabaga Hospital of 120 beds
- Masaka Hospital renovation and expansion with a bed capacity of 830 beds
- Construction of Nyamata Maternity block
- Renovation of 15 Secondary health Posts and neonatal intensive Units in 4 Referrals Hospitals
- Renovation, construction, and equipping of Kabgayi DH new maternity and surgical block
- King Faycal New Outpatient Building
- Expansion of Ngeruka to be Medicalized HC
- Expansion of Ngarama and Kirehe Hospitals

Supply of additional 22 oxygen plants for various hospitals.

Figure 48: Distribution of SPA Plan



5.3.3. Health facilities basic utilities

5.3.3.1. Water availability in Health Facilities

Only 12 Health centers do not have a permanent water supply system now compared to 44 Health centers in FY 2020-2021. This represents 2.3 % of total health centers (See the table below). At Health Posts, a total of 585 (52%) out of 1,222 Health Posts do not have access to a permanent water supply system.

Table 18: Health centers without permanent water supply system

District	Sector	Health center
Nyanza district	Ntyazo sector	Ruyenzi HC
	Kibilizi sector	Kibirizi HC
Rutsiro district	Boneza sector	IWAWA HC
	Murunda sector	Karumbi HC
Karongi disrict	Rugabano sector	Rufungo HC
	Rwankuba sector	Musango HC
Nyabihu disrict	Kabatwa sector	Kabatwa HC
Kirehe district	Nasho sector	Ntaruka HC
Kamonyi district	Rugalika sector	Kigese HC
Gakenke district	Mataba sector	Mataba HC
Muhanga district	Kabacuzi sector	Buramba HC
	Muhanga sector	Mata HC

5.3.3.2. Electricity availability in Health Facilities

At Hospitals levels, the access to electricity is 100%. There is currently one health center (Mukungu HC in Karongi District) without electricity supply.

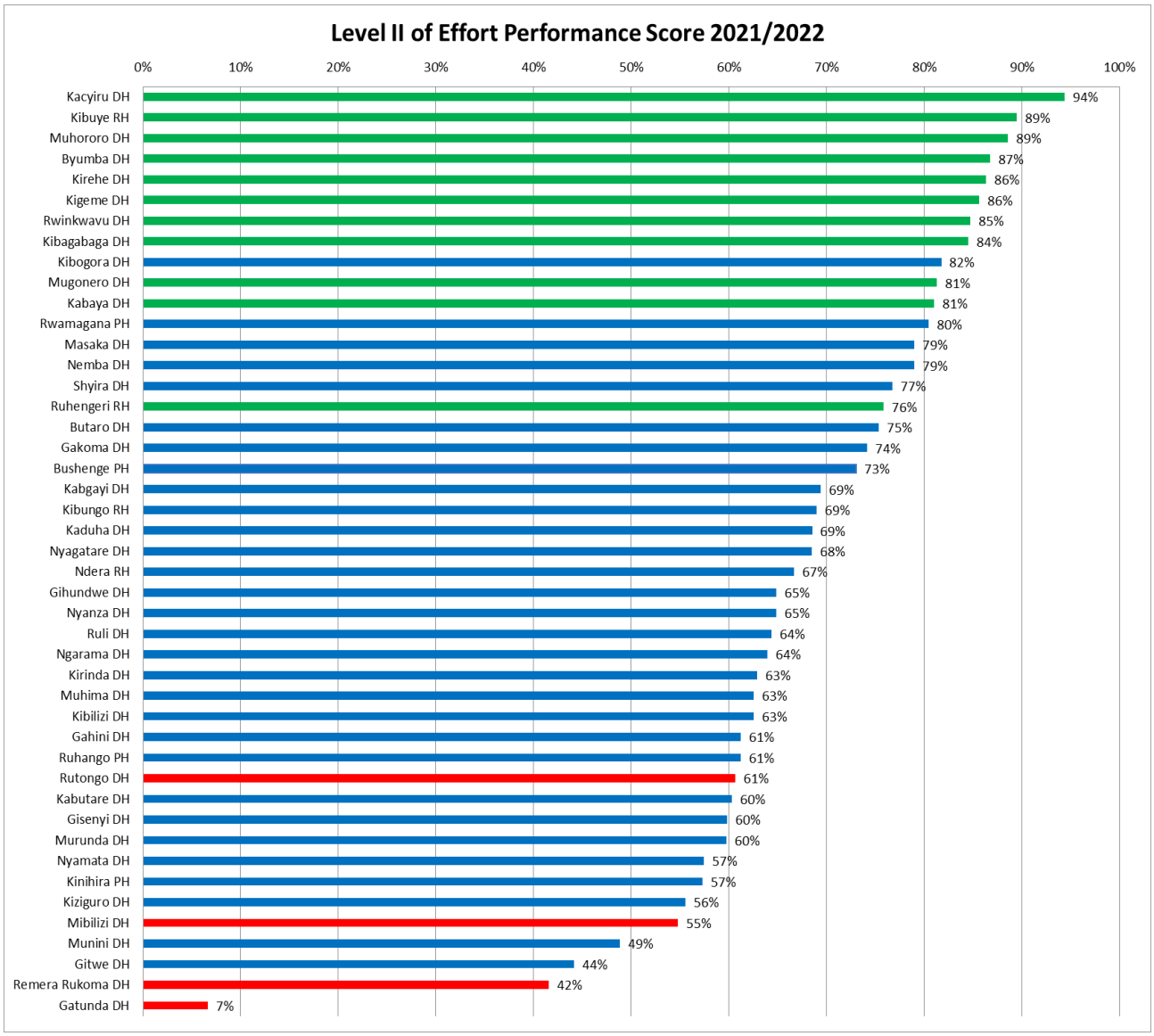
At the Health Post, the electricity is supplied in 918 out of 1,222 which represent 75.2% and 24.8% of HPs with no access to electricity.

5.3.4. Quality improvement

5.3.4.1. Accreditation for Public Hospitals

During this assessment, no hospital achieved level 3 of effort; however, 11 Hospitals achieved level 2 of effort, level 1 of effort was achieved by 30 hospitals and six hospitals did not achieve any level of effort. Kacyiru Hospital was the best performer with 94% and four Hospitals scored below 50%: Munini (49%), Gitwe (44%), Remera Rukoma (42%), and Gatunda (7%).

Figure 49: Level 2 performance score for hospitals for the year 2021/2022

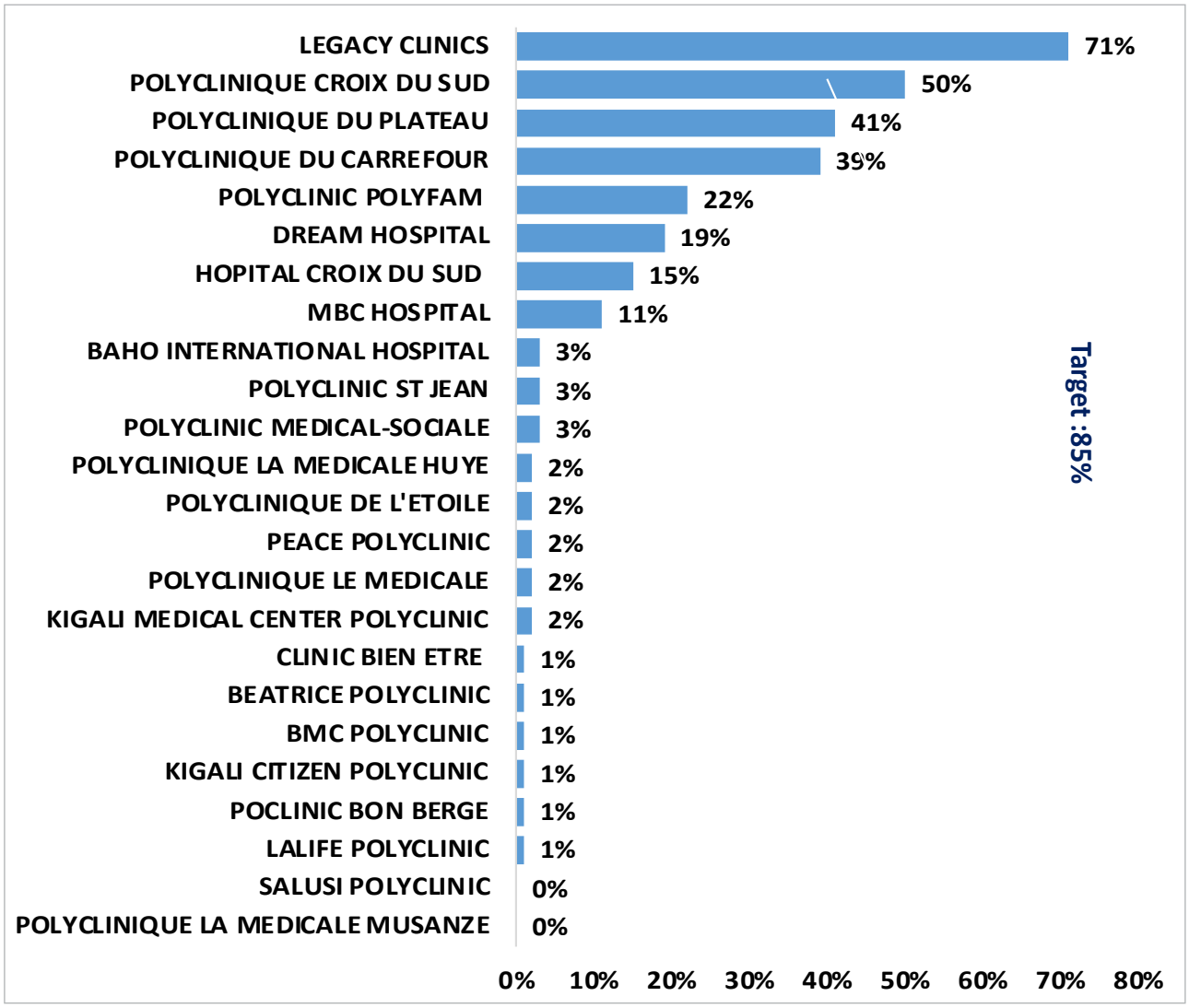


The Health Sector Strategic Plan 4 (HSSP4) target for 3 referral hospitals and 4 provincial hospitals to achieve level 3 of effort by 2024, but none have reached this target yet. Additionally, by 2024, 50% of district hospitals should achieve level 2 of national accreditation, and this year, 9 district hospitals and 2 referral hospitals have achieved both level 1 and level 2 effort for accreditation. During the survey, 30 hospitals achieved level 1 effort for accreditation, but not level 2 or 3, and six hospitals either lost one level or achieved a new level of effort.

5.3.4.2. Accreditation of Private Hospitals

According to Health Sector Strategic Plan 4 (HSSP4), over 95% of Private HFs (polyclinics and hospitals) should be enrolled and pursue level 1 of the accreditation process by 2024. This fiscal year, 24 Private hospitals and Polyclinics have been assessed for a baseline survey of accreditation. The survey showed that much must be done for private health facilities in the accreditation programs. However, only 2 health facilities scored more than 50% in this survey.

Figure 50:Accreditation Baseline scores for Private Health Facilities and Polyclinics



5.4. National Reference Laboratory (NRL)

5.4.1. Outbreak Rapid Response to EVD

The laboratory has developed testing capacity for Ebola and other epidemic prone diseases and has been working tirelessly to detect all suspected cases of COVID-19 in line with the national preparedness plan. The NRL has decentralized COVID-19 testing and activated 11 testing hubs at referral and district hospitals. The use of COVID-19 rapid diagnostic capacity has been approved and implemented in both public and private settings, and SOPs have been developed with staff trained on sample collection, reception, testing, and reporting. NRL has also conducted mentorship and supervision in 40 public health facilities and 40 private clinics to improve service delivery, and all COVID-19 items were procured and distributed timely.

Table 19: PCR Testing (NRL) statistics

Period	Negative	Positive	Total
May 2022	14,394	48	14,442
April 2022	18,857	28	18,885
March 2022	24,632	51	24,683
February 2022	19,592	162	19,754
January 2022	31,421	1,965	33,386
December 2021	37,067	1,601	38,668
November 2021	26,376	33	26,409
October 2021	22,028	88	22,116
September 2021	22,716	353	23,069
August 2021	22,440	656	23,096
July 2021	24,370	3,605	27,975
June 2021	19,114	1,052	20,166
Total	**283,007**	**9,642**	**292,649**

Sequencing testing was implemented, 20 staff were trained on the Sequencing method and high throughput sequencing machine (1 Nextseq 550) which can run minimal of 48 samples/week.

Table 20: Sequencing Report

Period	HIV VL
Jul-21	20
Aug-21	83
Sep-21	163
Oct-21	68
Nov-21	119
Dec-21	140
Jan-22	88
Feb-22	91
Mar-22	94
Apr-22	192
Total	**1177**

5.4.2. Establishment of the testing capacity for Diagnosis

The NRL has the capacity for full-scale HIV testing and is monitoring the new HIV testing algorithm with continuous quality improvement protocols to show the Progress of the country to meet HIV global 90-90-90 Targets.

HIV-1 recency testing was scaled up to all district hospitals in the country, and 90 lab staff were trained to provide these services. Additionally, the NRL assessed 7VL hubs and trained laboratory technologists on the use of Abbott m2000sp and m2000rt systems to improve and maintain the quality of molecular testing at viral load testing hubs.

Table 21: Testing statistics Sequencing Report

Period	HIV VL	HCV VL	HBV VL	HIV EID	HIV Recency	HIV DR	Flu	RVF	Measles and Rubella
Jul-21	4,519	268	116	525	101	11	17		40
Aug-21	4,889	476	161	703	188	25	89		54
Sep-21	2,883	1,655	368	581	594	8	67		110
Oct-21	4,970	808	246	798	165	6	111		75
Nov-21	5,720	829	316	753	238	12	101		107
Dec-21	5,055	479	187	933	199	9	35		131
Jan-22	5,123	450	373	700	407	16	21		63
Feb-22	5,236	387	346	719	352	12	91		66
Mar-22	4,401	516	442	708	365	20	62		122
Apr-22	547	393	322	635	315	8	152	104	85
May-22	4,919	595	345	584	273	12	150	218	80
Jun-22	0	0	0	0	0	0	0	0	0
Total	**48,262**	**6,856**	**3,222**	**7,639**	**3,197**	**139**	**896**	**322**	**933**

In the FY2021-2022, NRL conducted various tests on received specimens including SARS COV2 antibody titles, HbA1C, haematology, urine iodine, HPV, urine samples for the STEP study, and anti-TB TDM. To ensure quality, 61 public hospitals and private laboratories received PT samples for clinical chemistry and haematology on a quarterly basis, with feedback analysed and shared with participating laboratories.

5.4.3. Establishment of Molecular Lab (NAT) unit

The National Reference Laboratory (NRL) has expanded its testing capacity by purchasing a new fully automated molecular platform. This new molecular platform has the ability to detect various pathogens, including varicella zoster virus, cytomegalovirus, herpes virus, Listeria monocytogenes, meningococcal, and COVID-19 among many others. This new capacity will enhance the NRL's ability to diagnose and monitor these diseases.

5.4.4. Availability and Strengthening of Laboratory Information System

The NRL has implemented a Laboratory Information System (LIS) to address issues of turnaround time (TAT) and ensure timely delivery of results to health facilities. The LIS covers all sites referring samples to NRL, and 88154 samples were received, tested, and logged in the system from July 2021 to June 2022. In total 61 lab technicians were trained on web LIS to facilitate sample entry and result checking. TAT for viral load testing at NRL is now within an acceptable range of one to two weeks. Additionally, the NRL has implemented the Viral Load

Sample Management System (VLSMS) to monitor all 14 viral load testing hubs, improving testing efficacy and contributing to the NRL's accreditation process.

5.4.5. Accreditation Process

The National Reference Laboratory is a five-star laboratory according to the WHO checklist standards and is now ISO 15189:2012 accredited by Kenya Accreditation Service KENAS effective April 2020. Now NRL, Kanombe Military Hospital and Grand Legacy Hospital are accredited to COVID-19 and they are certified.

5.4.6. Research activity

NRL through clinical pathology unit is involved in SARS CoV-2 vaccine efficacy testing activity and SARS COV-2 sero-prevalence for the effectiveness of the COVID-19 vaccine

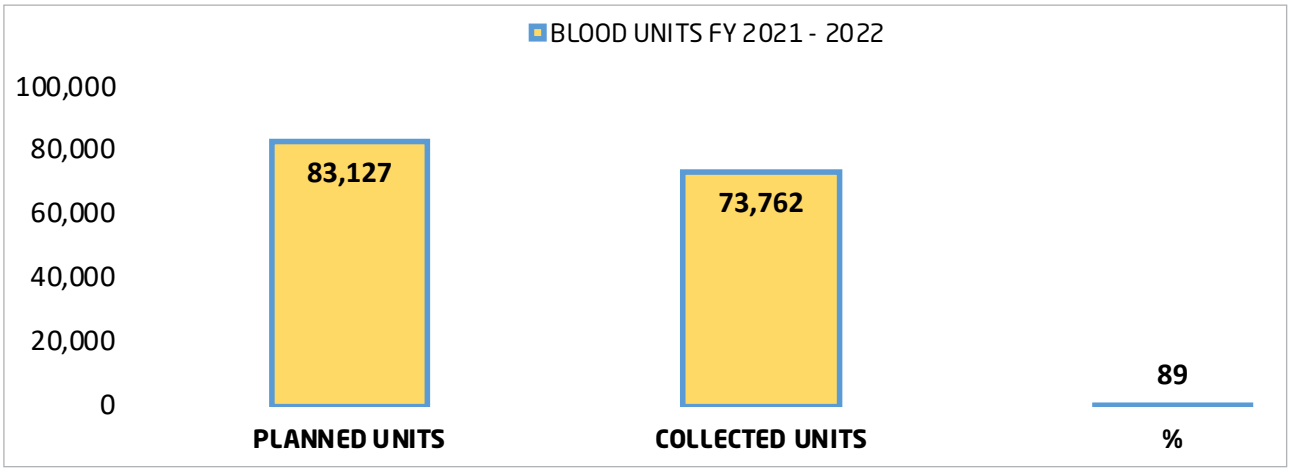
5.5. National Blood Transfusion

An effective blood transfusion service is one of the essential components of a good health care system). According to WHO, countries should collect blood units equivalent to 1% of their population to satisfy their need of blood products. This means that Rwanda with about 12 million people should collect 120,000 blood units per year.

5.5.1. Blood collections

In the fiscal year 2021-2022, BTD carried out 1,591 blood collection sessions and collected 73,762 blood units from 5 fixed and 662 mobile collection sites countrywide. The performance of the total blood units collected compared to the plan, which was 83,127 blood units, is 89% and it is less than the WHO recommendation.

Figure 51: Breakdown blood unit collected in 2021/2022 by source



Source: RBC/BTD e-Progesa database and quality data indicators 2021 - 2022

The BTD laboratory produced 114,452 blood component units from 73,762 whole blood units collected, which were distributed to 78 public and private health facilities providing transfusion services. This resulted in a 97% satisfaction rate for hospitals, despite a slightly lower supply compared to demand. The BTD aims to achieve 100% satisfaction by 2025 according to their strategic plan.

5.5.2. Blood delivery by drones in 2021

In 2021, there has been an increase in the units delivered by Zipline compared to the previous year but there was a decrease in the satisfactory rate by 1.44%. This increase could be due to further facilities on boarded onto the Zipline service. In total, Zipline has delivered 37,542 blood units to 44 transfusing facilities and 1 health center. Below is the summary.

Table 22: Satisfaction rate by components

Component	Quantity requested	Quantity delivered	Satisfaction rate
CRYO	1 9 3	180	93.26%
FFP	1,335	1,322	99.03%
PLT	9,965	9,668	97.02%
RBC-Adult	24,510	24,433	99.69%
RBC-Child	1,947	1,939	99.59%
Total	**37,950**	**37,542**	**97.72%**

For the future plans BTD will also scale up the heights of blood safety by strengthening its blood collection strategies, blood and blood products treatment, quality management system, customer care and other strategies towards adequate blood and blood product to all patients in need.

CHAPTER 6:
HEALTH SYSTEMS: OUTPUTS

CHAPTER 6. HEALTH SYSTEMS: OUTPUTS

6.1. Utilization of health services

The Ministry of Health, along with development partners, has made efforts to reduce barriers and improve service accessibility and quality of care to increase health service utilization, particularly for vulnerable populations. As a result, there has been an increase in outpatient visits and inpatient services during the reporting period compared to previous years.

6.1.1. Outpatient Services

A total of 20.6 million clients provided outpatient services in all health facilities, which is 1.59 outpatient visit per person per year (Table 22). The per capita outpatient utilization of the fiscal year 2021-2022 was the highest since the implementation of HSSP IV.

Table 23: Summary of the annual trends of OPD visits in all health facilities ((FY 2016-2017 to FY 2021-2022)

Facility Type	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total OPD visits	17,328,989	18,878,021	19,026,514	18,860,619	18,959,076	20,631,778
Total Population	11,671,371	11,949,508	12,232,059	12,518,758	12,955,768	12,955,736
Per Capita utilization	1.48	1.58	1.56	1.51	1.46	1.59

During the fiscal year 2021-2022, primary-level health facilities, including Health Centers and Health Posts, provided most of the outpatient services (86%) nationwide, with Health Centers contributing 64% of the total services. The trend of service delivery by Health Centers is decreasing while that of Health Posts is increasing due to basic health services being provided at a lower level. Secondary and tertiary care services are the referrals of the health system, with a total of 1.028 million patients served at the outpatient department in all public hospitals. Private health facilities are also part of the health system and contributed to improving service accessibility and quality of care, covering 9% of the total OPD cases nationwide, including community health services.

Table 24: Annual trends of OPD visits by the level of care (type of service delivery) from the FY 2016-2017 to FY 2021-2022

Facility Type	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
CHW Home-Based Care	2,475,802	2,446,200	2,398,468	1,558,153	919,213	1,524,422
Prison Clinic	131,520	141,545	147,662	175,223	217,435	216,142
Health Posts	71,212	86,634	1,445,119	3,824,343	4,425,855	4,613,904
Health Center	13,327,004	14,755,758	13,268,067	11,302,357	11,002,676	11,310,708
District Hospitals	506,793	581,838	647,909	670,347	700,976	773,283
Provincial Hospitals	43,842	55,568	61,515	56,465	59,753	70,929
Teaching and Referral Hospitals	177,829	194,022	207,200	208,706	215,540	236,142
Private Health Facilities	593,850	615,013	847,643	1,072,167	1,417,628	1,880,625

The majority of the facility-based outpatient services provided during the reporting period (Fiscal Year 2021-22) are by Health Centers (60%) followed by Health Posts 24.4%. Private facilities provided 10% of the total facility-based OPD services.

Table 25: The proportion of outpatient services in public and private health facilities by the level of service delivery (type of facility) in the year 2021-22

Health facilities	Total number of visits	Proportion out of the total visits
Health Posts	4,613,904	24.4%
Health Center	11,310,708	59.9%
District Hospital	773,283	4.1%
Provincial Hospital	70,929	0.4%
Teaching and Tertiary Hospital	236,142	1.3%
Private Health Facilities	1,880,625	10.0%
Total number of visits	**18,885,591**	**100.0%**

6.1.2. Inpatient services

Inpatient services are mainly provided in hospitals as per the country's legal framework. The key performance indicators for inpatient services have shown increased performance, with the number of beds increasing over the last six years. However, there has been no significant change in bed density per 1,000 populations. The total number of admitted patients has increased from 717,145 in 2016-17 to 883,936 in 2021-22 due to increased beds and other activities.

Table 26: Annual Trends of Key Performance Indicators of Inpatient Services from the FY 2016-2017 to FY 2021-2022 (All Health Facilities)

KEY KPIs	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Number of beds (excluding labour and delivery beds)	20596	20808	21448	21427	22151	22,014
Hospital Bed Density (Total number of hospital beds per 10,000 population)	18	17	18	17	17	17
Total patients admitted/ Inpatients	717145	746297	781553	762964	799294	883936
Total number of Deliveries	334322	321590	330523	326085	322109	344119
Number of deliveries by caesarean section	49882	53220	57972	64342	71448	81857
Total number of deaths (Institutional)	12310	12512	12942	12718	12795	13765
Maternal deaths (Institutional)	442	616	539	361	300	329
Neonatal deaths (Institutional)	4376	4087	4039	4151	4140	4294

There were a total of 883,936 admitted patients, the majority of whom were served in the District Hospitals (40%). In the same period, a total of 13,765 institutional deaths, 329 institutional maternal deaths, and 4,294 institutional neonatal deaths were reported from all health facilities providing inpatient services.

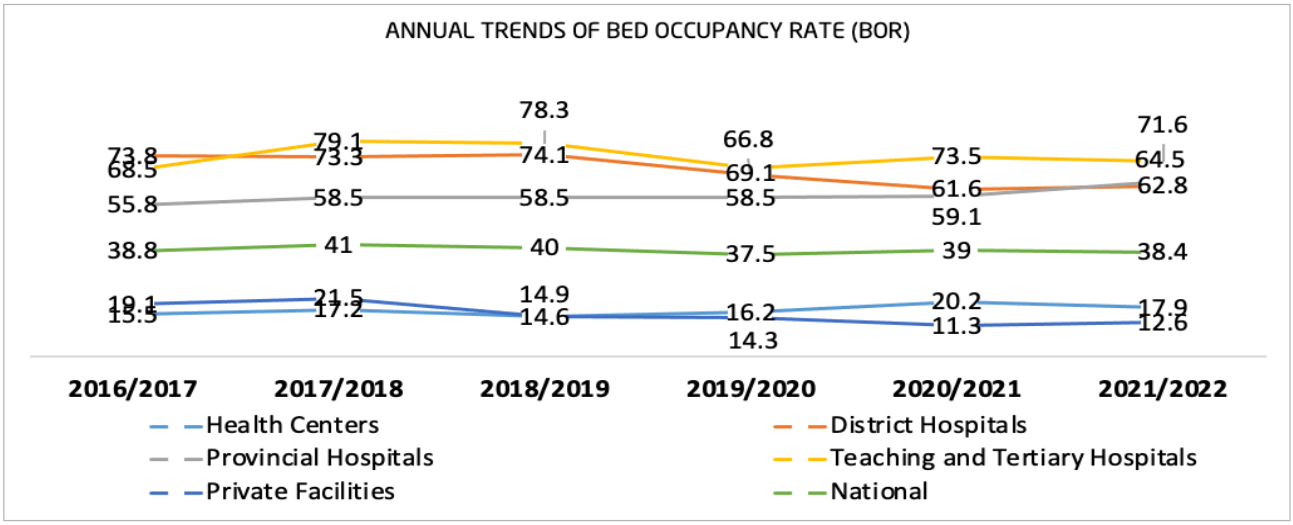
Table 27: Key Performance Indicators of Inpatient Services by Type of Health Facility (FY 2021-22)

KEY KPIs	Health Centers	District Hospitals	Provincial Hospital	Teaching & Referral Hospitals	Private Health Facilities	National
Number of beds (excluding labour and delivery beds)	10,992	6,644	755	2,557	1,066	22,014
Total patients admitted/ Inpatients	305,126	351,744	39,841	153,005	34,220	883,936
Total number of Deliveries	177,589	124,281	10,924	22,688	8,637	344,119
Number deliveries by caesarean section		59,212	5,181	12,106	5,358	81,857
Total number of deaths (Institutional)	492	8,036	860	4,361	16	13,765
Maternal deaths (Institutional)	9	117	16	184	3	329
Neonatal deaths (Institutional)	250	3,066	284	690	4	4,294

The analysis of key inpatient performance indicators shows a need for improvement in the quality of services to enhance performance. The National Bed Occupancy Rate (BOR) is low, and there is no significant change over the last six years.

The BOR of public hospitals is higher than the national average, but still not satisfactory, particularly in provincial hospitals. The Average Length of Stay (ALOS) is also higher than the standard, indicating a need to streamline and improve patient care pathways. Institutional mortality rates need to be reduced to ensure better quality of care.

Figure 52: Annual trend of bed occupancy 2016-2017 to 2021-2022



As a measure of the health facilities' operational efficiency, the average length of stay of patients over the last six years showed that Teaching and Tertiary hospitals has improved compared to other levels of care and the average normal ALOS (5 days).

As a measure of the health facilities' operational efficiency, the average length of stay of patients over the last six years showed that Teaching and Tertiary hospitals has improved compared to other levels of care and the average normal ALOS (5 days).

Figure 53: Annual trend of average length of stay 2016-2017 to 2021-2022

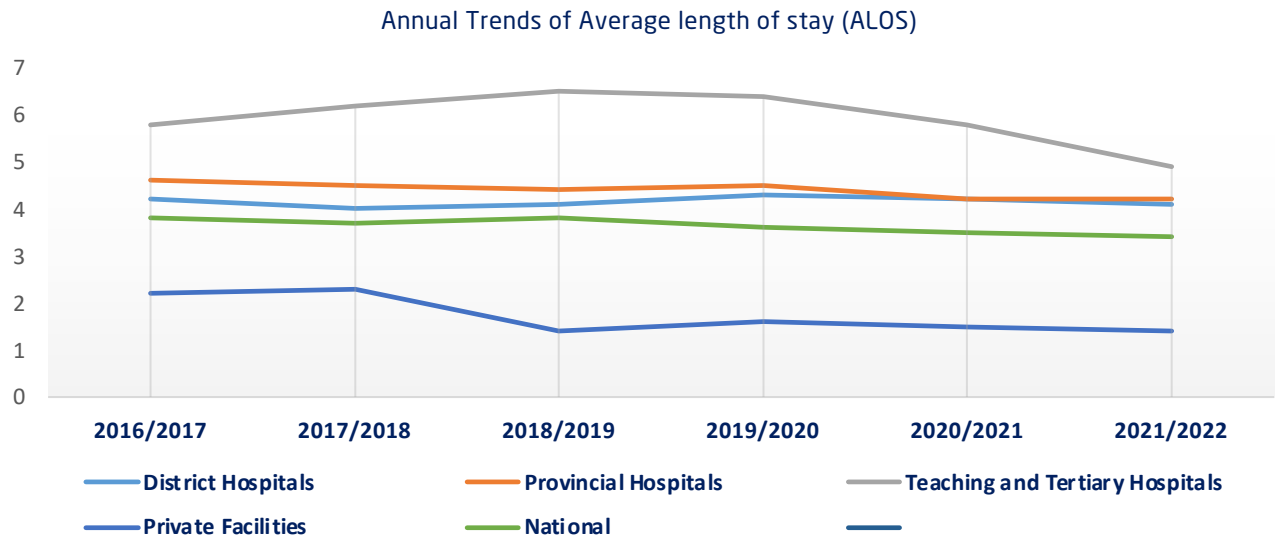
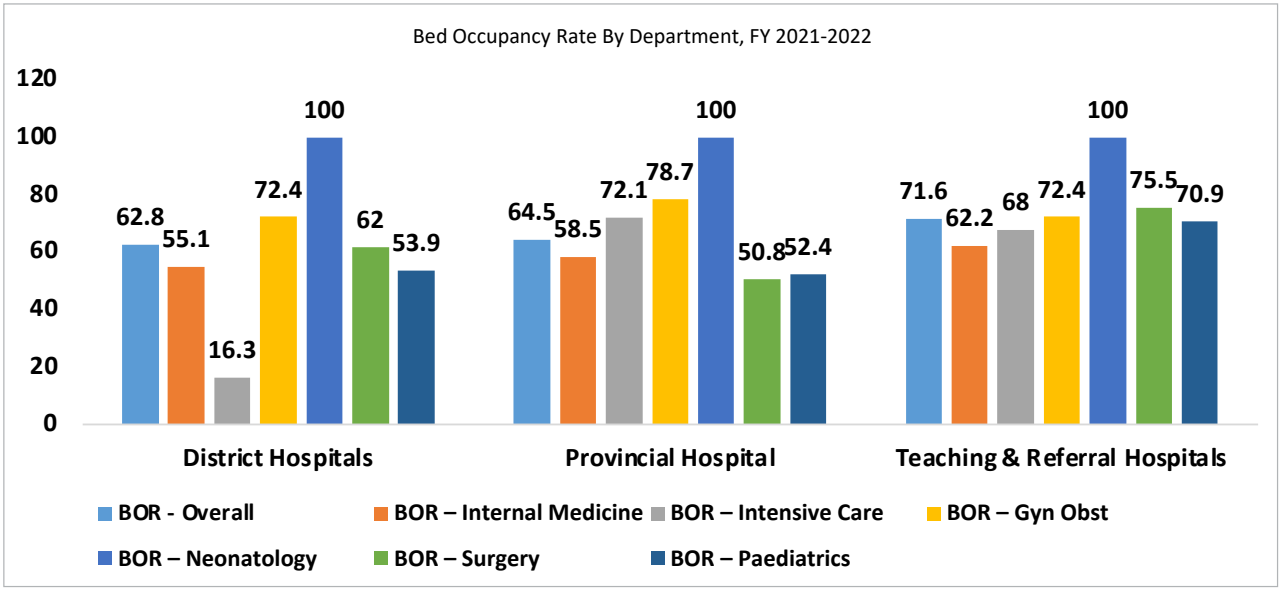


Figure 54: Bed Occupancy Rate by Department 2021-2022



Further analysis of the Bed Occupancy Rate and Average Length of Stay by each level of public health facilities showed that there is no big difference except the low BOR of Health Centres and the more ALOS of the Specialized Mental Health Facilities (See table below):

Table 28: BOR and ALOS by health facility type

Facility Type	BOR	ALOS
Health Centers	17.9	3.1
District Hospitals	60.5	4.0
Provincial Hospital	63.3	4.3
Referral Hospitals	62.2	4.2
Teaching University Hospitals	77.3	5.6
Specialized Mental Health	76.0	13.1
Specialized orthopedic Health Facility	50.1	0.0

The post-surgical infection rate was analysed as an indicator of the quality of health services, and the highest rate was observed at the District Hospital level, which was 1.27%. Patient referral is a process in which a healthcare provider seeks assistance due to the limitations of available skills, resources, and services offered locally. During the reporting period, the highest number of referrals were from Health centers (676,253 patients), followed by District Hospitals that referred 46,783 patients.

Figure 55: Patients Referrals by Level of Health Facilities

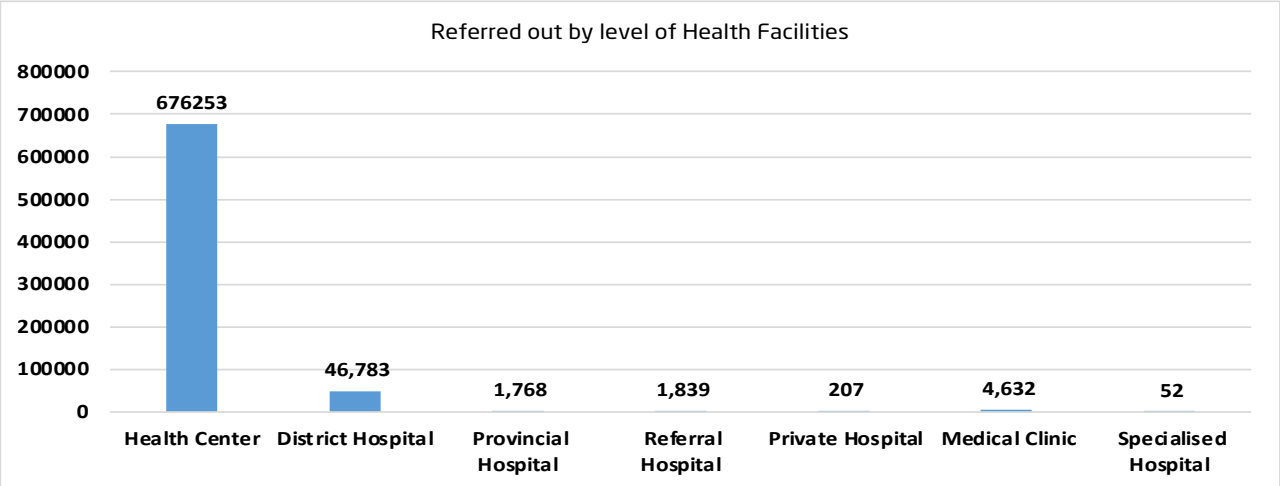


Table 29: Access to surgery and anaesthesia services Progress on NSOAP indicators

Indicators	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022
Surgical volume per 100,000 population	1,005	1,098	1,255	1,128	1,281	1,325.8
Perioperative mortality tracking rate	NA	76.2	100	100	100	100
Perioperative mortality rate	0,6	0,6	0,5	0,6	0,5	0.43
SAO provider density per 100,000 Population	NA	NA	11	12	13	1,313

6.1.3. Emergency Medical Services

During FY 2021-22, the SAMU dispatch and communication team received 11,651 genuine/valid calls, with 73% of them resulting in complete interventions. Of the complete interventions, 51% were trauma cases, mainly related to road traffic accidents, while internal medicine and obstetrics/gynaecology conditions accounted for 26% and 16%, respectively. Other cases were related to paediatrics and neonatal emergencies.

6.2. Health Financing

Since the implementation of the HSSP IV and its financing strategy, MOH has been mobilizing resources from all sources to finance the prioritized health interventions and has been implementing innovative and effective strategies to effectively pool available resources and implement strategic purchasing of services to maximize household financial protection and accelerate progress towards Universal Health Coverage.

6.2.1. Social Health Insurance

The overall coverage rate for social health insurance schemes is 93.3%, with CBHI covering 86.9%, RAMA covering 5%, and other schemes covering the rest. Activities to strengthen risk pooling have been carried out including:

- the establishment of CBHI benefits packages, restructuring the referral system in public health facilities, and revising tariffs.
- A technical workshop on health benefits packages was conducted, and a capitation model is being designed for primary level care.

Efforts to streamline billing and verification procedures include the rollout of electronic medical record systems and a digital platform for managing contracts with providers.

6.2.2. Performance-Based Financing

In the fiscal year 2021-2022, PBF continued to be implemented at all levels, with activities including counter-verification exercises, incorporating malaria indicators in the Community PBF framework, issuing procedure manuals and amending instructions for the use of CHW ticket moderateur, and conducting monthly and quarterly evaluations.

Table 30: Annual Top-up and PBF Budget Execution by packages for FY 2021-2022

Source of Funds	Packages	PBF budget used for FY 2021-2022
Ordinary Budget	Top Up to CHUK, CHUB & RMH	2 042 304 224
Ordinary Budget	PBF for CARAES Ndera Hospital	240 000 000
Ordinary Budget	CPA (Referral, Provincial & District Hospitals)	2 339 381 446
Ordinary Budget	MPA (Health Centers)	2 071 236 107
Ordinary Budget	District Steering Committee	200 654 100
GF SSF	HIV & TB (HFs & CHWs)	1 171 314 489
World Bank	SPRP (HFs & CHWs)	3 870 057 761
CDC COAG	HIV	1 480 432 722
Enabel	MCH indicators (HFs & CHWs)	679 255 738
Fred Follows Foundation	Eye care/HFs	385 650 644
Foundazione LDV	Eye care/HFs	196 088 885
OneSight	Eye care/Hospitals	72 000 000
Total Amount		**14 748 376 116**

In the FY 2021-2022, a total of RWF 14,748,376,115 was disbursed to stimulate qualitative and quantitative performance indicators across the entire Rwanda Health System, with 85% for Clinical PBF and 15% for Community PBF. This was done to provide health workers and their respective health facilities monetary incentives when they achieve specified qualitative and quantitative performance indicators.

Table 31: PBF Budget execution by Program FY 2020-2021

PBF Budget by Program	PBF Execution FY 2020-2021	Percentage
Clinical PBF	12 580 119 412	100%
Community PBF	2 168 256 703	100%
Total Amount	**14 748 376 115**	**100%**

6.2.3. Planning, Budgeting and Budget Execution 2021-2022

The table below describes the budget execution of the Ministry of Health, its affiliated agencies (RBC, Rwanda FDA, CHUK, CHUB, Ndera Hospital), and earmarked budget to 30 districts (for health workers' salaries, operation costs for health facilities and support to CHW cooperatives).

Table 32: Budget Execution 2021-2022

Program	Allocation (Frw)	2021/22 execution (Frw)	% execution
Administrative and Support Services	156,956,826,634	149,548,017,689	95%
Food and Drugs Registration & Inspection	350,443,674	263,476,071	75%
Health Human Resources	6,307,988,750	5,691,224,076	90%
Health Sector Planning, Monitoring and Evaluation	48,929,141,883	47,889,779,709	98%
Health Service Delivery and Quality Improvement	43,031,330,459	38,665,687,883	90%
Infectious Diseases Prevention and Control	75,917,910,804	82,127,944,022	108%
Maternal, Child and Adolescent Health	104,017,547,307	84,389,419,369	81%
Non-Communicable Diseases and Mental Health Prevention and Control	2,015,346,987	1,336,596,306	66%
Specialized Health Services	732,288,127	705,126,958	96%
TOTAL	**438,258,824,625**	**410,617,272,083**	**94%**

CHAPTER 7:
MONITORING AND EVALUATION

CHAPTER 7. MONITORING AND EVALUATION

During the fiscal year, several monitoring and evaluation activities were conducted in the health sector. The Mid-Term Review (MTR) of the HSSP IV was one of the major activities that was conducted and disseminated, showing the performance of several health indicators for both infectious and non-communicable diseases. Recommendations were made for indicators that did not perform well, and a plan to implement these recommendations has been developed for the remaining half of the strategic plan(https://www.moh.gov.rw/index.php?eID=dumpFile&t=f&f=54437&token=b89540f53e68b5cd78981691cdc9b81b0bc8bd51).

Also in the fiscal year 2021-2022, the coordination of World Sight Day, comprehensive review of reporting forms of reference hospitals, and the development and approval of a Monitoring and Evaluation framework for the implementation of capitation model. The Ministry of Health also conducted both Backward and Forward Joint Health Sector Review meetings to strengthen policy dialogue amongst stakeholders and enhance accountability. The Forward Looking Joint Sector Review was conducted in Nyagatare District in August 2022, with the objective of discussing and validating sector targets, policy actions, and assessing progress towards implementation of fiscal year 2021/22 policy actions.

As the outcome of the FLJSR, a number of Policy Actions was developed including (but not limited) the reduction of maternal mortality with a moto "No woman should die while giving life" (https://www.moh.gov.rw/index.php?eID=dumpFile&t=f&f=52286&token=5042d2ce04e9a0336fa71ad70ae5a419d422b915).

During the 2021-2022 fiscal year, data analysis and data use were key activities that were conducted to improve service delivery at health facilities. These activities included the analysis of Analysis of NST1 and HSSP IV indicators using the Rwanda Health Analytics Platforms where These analyses were providing evidence for the field visits conducted by MOH Leadership in different Districts countrywide with overall objective of accelerating the achievement of NST1, training of data managers and DGs of hospitals and vice-mayors of districts, conducting data triangulation, and data analysis, on the use and interpretation of dashboards for different health indicators including but not limited to NST1, HSSP4, GBV, HIV, etc. and sharing of maternal deaths with MOH leadership. These activities aimed to provide evidence for field visits, develop dashboards, investigate data variances, and improve maternal health.

It is worthy to note that since with have introduced these trainings in May 2022, and with a continuous provision of management letters to health facilities, we are observing a decrease of number of service delivery inconsistencies and data quality gaps in health facilities.

8

CHAPTER 8:
CHALLENGES

CHAPTER 8. **CHALLENGES**

Some of the major challenges encountered during the implementation of the FY 2021-2022 include:

- Shortage of human resources in terms of number, capacity, and professional skills;
- Gaps in key health workforce such as midwives, doctors and non physicians anesthetists for provision of BEmONC and CEmONC services;
- Limited utilities (sanitation facility, permanent water,electricity etc...) in the primary health care facilities, especially in HCs and HPs;
- Limited capacity to provide on time supportive supervision and monitoring at each level;
- Limited capacity in data collection and analysis and in information use for decision making purposes; especially at lower level of the health tier system;
- Lack of standard medical equipment management system
- Limited capacity to maintain the effective supply chain system

There has been a remarkable improvement in health status in over the past years during HSSP IV.

While struggling for development and better health, is an example that low-income countries can achieve better health and improved service coverage if policies, programs and strategies are supported by political will, community involvement, and commitment at all levels with harmonized efforts of all stakeholders.

However, despite the progress achieved so far, there is the unfinished Sustainable Development Goals (SDG) agenda around mortality reduction, particularly maternal and newborn mortality, and challenges are still to be addressed in improving the health of the population across the life course, in improving quality of care, and in addressing health inequalities.

Learning from the past, the future development agenda recognizes the monitoring and reduction of inequalities as a priority. It is for this reason that improving quality and addressing inequalities are the organizing principles around the next reamaining implementation process of the HSSP IV built in the framework of the vision of the health sector in Vision 2050.

Hence, Universal Health Coverage (UHC) is a key approach to address the health gap in reduction of inequalities and improving quality. Strengthening primary health care and bringing health services physically accessible, financially affordable and acceptable to patients is the core agenda to attain UHC. To this end, according to the context of plan, it is high time to address the current limitations of health equity and quality.

ANNEXES

Annex1: List of contributors

No	Name	Function	Organization
1	Dr Parfait UWALIRAYE	Head of Planning, M&E and Health Financing Department	MOH
2	Donatien NTAGARA NGABO	Director of Monitoring and Evaluation	MOH
3	Kahsu BEKURETSION	Technical Advisor	MOH
4	Theoneste MUSTINDASHYAKA	Sector M&E and Reporting Specialist	MOH
5	Jean Bosco NDAYAMABAJE	Sector M&E and Reporting Specialist	MOH
6	Robert KABANDA	Sector M&E and Reporting Specialist	MOH
7	Daniel NTABANGANYIMANA	Sector M&E and Reporting Specialist	MOH
8	Jean de Dieu NDAGIJIMAMA	Health Information Systems and Data Management Specialist	MOH
9	Emmanuel TUBANE	Health Information Systems and Data Management Specialist	MOH

Annex2: List of Implementing Development Partners

Domain	Sub-domain	Name of the organisation
Food and drugs regulation		
	Food and drugs regulation	
		Management Science For Health (MSH)/MTAP
Health Service Delivery and Quality Improvement		
	Health Service Delivery and Quality Improvement	
		Abbott (Gmbh) Diagnostics
		AMERICAN SOCIETY FOR CLINICAL PATHOLOGY
		Babyl Rwanda Limited
		Chemonics international
		ENI Foundation
		Fuel Limited SRL
		Health Builders
		Helping Hands for Rwanda International
		One Family Health (OFH)
		Partners In Health
		Rwanda Legacy of Hope
		Rwanda Private Medical Facilities Association (RPMFA)
		Society For Family Health (SFH)
		Zipline
	Research and knowledge management	
		Center for Family Health Research
		Projet San Francisco
		Rinda Ubuzima
	Health Promotion and Communication	
		Care International
		ShootingTouch Rwanda
		Umurage Communication for Development (UMC)
HRH		
	HRH	
		African Field Epidemiology Network (AFENET Rwanda)
		ALL M LLC
		Center for International Reproductive Health Training- CIRHT Africa
		Chaine de l'Espoir Belgique (CDEB)
		Global Health Corps - GHC
		Health[E] Foundation
		Martina Children hospital
		Operation Smile Inc
		Research Academic and High Learning Institution (ARES)

Infectious Diseases Prevention and Control		
	Diseases prevention and control	
		Abt Associates
		Aids Healthcare Foundation (AHF)
		Charis Unmanned Aerial Solutions (Charis UAS)
		Elizabeth Glaser Pediatric Aids Foundation (EGPAF)
		Global Humanitarian and Development Foundation (GHDF)
		Ihangane Project
		Innovative Research And Development Corporation (InRaD)
		Integrated Health Organisation -Rwanda
		IOM
		IVCC
		Jhpiego (Affiliate of John Hopkins University)
		Trustees of Columbia University in the City of New York and Mailman School of Public Health (MPH)
		UNAIDS
		University of Maryland /Maryland Global Initiatives Corporation - MGIC
		WE-ACTX for Hope
Maternal, Child and Adolescent Health		
	MCH and nutrition	
		Africa Improved Foods Rwanda Ltd
		Catholic Relief Services (CRS)
		Gardens for Health International
		Solid'Africa
		Swiss Development Cooperation
		UNICEF
		Water Aid
		World Food Program Rwanda (WFP)
	FP and ASRH	
		Centre Marembo
		Imbuto Foundation
		Peace Corps Rwanda (United States)
		Plan International Rwanda
		UNFPA
		VSO
		Willows International Rwanda
		Youth Developemt Labs (YLabs) Studios Ltd
	MNCH	
		Access to Health
		ADRA

	Better World (BWR)
	Caritas Rwanda
	Intrahealth International
	IOWD
	Medicus Mundi
	Rotary International
	UN WOMEN
	World Relief Rwanda
	World Vision
Non-Communicable Diseases and Mental Health Prevention and Control	
NCD	
	Africa Healthcare Network (AHN)
	Breast Cancer Initiative East Africa
	City Cancer Challenge Foundation
	Health Alert Volunteers (HAV)
	Medtronics Lab
	Palliative Care Association of Rwanda (PCAR)
	Rwanda Care and Hospice Organization (RPCHO)
	Rwanda NCD Alliance
	Team Heart Inc. Boston, MA
Eye health	
	Christian Blind Mission (CBM)
	Fondazione Leonardo Del Vecchio Rwanda (FLDVR)
	Fred Hollows Foundation
	OneSight
	Rwanda International Institute of Ophthalmology (RIIO)
Mental Health	
	Federation Handicap International
	Global Epileptic Connection
Oral health	
	His Hands on Africa
	Oral health Foundation
	Oral Health Solutions Organization (OHSO)
Eye, Ear and Hearing Care	
	Heron Foundation
Club foot correction	
	Hope Walks
Health Sector Planning, Monitoring and Evaluation	
Health Information and Technologies	

	Algorithm Inc. Ltd
	University of Oslo
	Vital Strategies Inc.
	Zaka Group Ltd.
Planning, Health Financing, Monitoring and Evaluation	
	Clinton Health Access Initiative inc.
	WHO

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