



Republic of Rwanda

Ministry of Health

Rwanda Health Sector Performance Report 2017-2019

FOREWORD

The Rwanda Health Sector Performance Report 2017-2019 summarizes the Rwanda Health Sector achievements at the end of the Health Sector Strategic Plan 2012-2018 (HSSP III) and touches on the first year of the new Health Sector Strategic Plan 2018-2024(HSS IV).

In fact, since the emergency and recovery period that followed the Genocide against Tutsi in 1994, Rwanda has implemented three Health Sector Strategic Plans, and tremendous achievements have been registered on almost all health indicators. Important investments that were put in the reorganization of the Health System have largely contributed to the impressive improvement of the Universal Health Coverage of the primary healthcare in Rwanda. Life expectancy has increased from 49 in 2000 to 67 years in 2018. Maternal and child health has improved significantly over the last two decades and exceeded Millennium Development Goals ambitions. Maternal mortality reduced by 80% between 2000 and 2014 while infant and child mortality decreased by over 70% in the same period.

The key drivers of these achievements include a visionary leadership, community participation and self-belief, hard work of citizens, and support of development partners. Rwanda's recent experience in the socioeconomic development in many sectors shows that the Country can no longer afford to be ranked among undeveloped and low income countries. This aspiration is well expressed in the Rwanda Vision 2050 which sets the roads to taking Rwandans to high living standards and high quality livelihoods by the middle of the 21st century.

For aspirations of the Rwanda Vision 2050 to materialize, important transformations will need to be implemented across all sectors and areas. To this effect, a National Strategy for Transformation (NST1) has been designed to inspire and drive all sectors till 2024, as well as to provide the foundation and vehicle towards Vision 2050 Goals. Drawing on lessons learnt from the implementation of HSSP III, the Ministry of Health developed the Health Sector Strategic Plan 2018-2024, in full alignment with the Vision 2050 aspirations and the NST1 Pillars. HSSP IV has been informed by global and regional development agendas Rwanda has committed to, especially the Sustainable Development Goals (SDGs).

The development of HSSP IV also considered the overall objective of the Rwanda Health Sector Policy and lays down priority areas that will be key to ensuring universal access to equitable and affordable quality health services. All proposed interventions stress the importance of people-centred, integrated and sustainable services. For the implementation of HSSP 4 and its sub-strategies to be successful, combined efforts from different stakeholders will be needed. I once again call upon all stakeholders from both Government and non-state actors involved to also align their interventions to the HSSP IV and its sub-strategies.

On this note, I would like to reiterate my special thanks to all health sector development partners and stakeholders for their support and contribution to the advancements welfare and wellbeing.

Dr. NGAMIJE M. Daniel
Minister of Health



TABLE OF CONTENT

FOREWORD	i
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF ACRONYMS	vii
INTRODUCTION	1
1. HEALTH SYSTEM STRENGTHENING	1
1.1. Health Service Delivery	1
1.1.1. Geographical accessibility to health care services	2
1.1.2. Laboratory services	8
1.1.3. Blood Transfusion	11
1.1.4. Quality improvement standards for service delivery across the health facilities	11
1.1.4.1. Accreditation program,	11
1.1.4.2. Patient Voice Program “Ijwi ry’umurwayi” (PVP)	12
1.1.5. Emergency Medical Services	12
a. Calls and time response in 2018-2019	13
b. Types of interventions completed	14
c. Receiving health facilities	14
1.1.6. Contribution of the Private Sector to Health Services Delivery	15
1.2. Human Resources for Health	17
1.3. Health Information Systems	19
1.4. Access to Essential Medicines	21
1.5. Health systems financing	22
2. DISEASES PREVENTION AND CONTROL	23
2.1. Non-communicable Diseases (NCDs)	23
2.1.1. Cardiovascular diseases, cancer, diabetes and chronic respiratory diseases	23
2.1.1.1. NCDs Awareness Raising, Prevention and Early Detection	24
a. Rwanda Car Free Day for NCDs Awareness Raising and Early Detection	24
b. NCDs Early Detection at Primary Health Care level	24
c. Home Based Care Practitioners (HBCPs) Program	25
d. Facility based breast and cervical cancer screening	27
2.1.1.2. Non Communicable Diseases Care and Treatment	27
2.1.1.2.1. Decentralization of the management of CVDs, Diabetes, Asthma and Chronic respiratory diseases at primary health care level.	27
2.1.1.2.2. Open Heart Surgery	28
2.1.1.2.3. Cancer Care and treatment	28
2.1.1.2.4. Injury and Disabilities	29
2.1.1.2.5. Palliative care.	31
2.1.1.3. NCDs Monitoring, Evaluation and Research	32
2.1.1.3.1. NCDs Registries	32
2.1.1.3.2. Medical certificate causes of death and ICD-10 coding	36
<i>Source: HMIS 2019 (N=6843 in males and 5492 in females)</i>	36
2.1.2. Mental Health Services	37

2.1.2.1.	Achievements in the Fiscal Year 2017-2018.....	37
2.1.2.2.	Achievements in the Fiscal Year 2018-2019.....	39
2.1.3.	Oral Health.....	42
2.1.4.	Eye Care	43
2.1.5.	Ear and Hearing Care Services	47
2.2.	Communicable Diseases.....	48
2.2.1.	Malaria control	48
2.2.1.1.	Countrywide mass distribution of LLINs to reach universal coverage	49
2.2.1.1.1.	Achievements in the Fiscal Year 2017-2018	49
2.2.1.1.2.	Achievements in the Fiscal Year 2018-2019	49
2.2.1.2.	Indoor residual spraying (IRS).....	50
2.2.1.3.	Malaria case management.....	50
2.2.1.3.1.	Achievements in the Fiscal Year 2017-2018	51
2.2.1.3.2.	Achievements in the Fiscal Year 2018-2019	53
2.2.1.4.	Population knowledge attitudes and practices towards malaria control	54
2.2.2.	Neglected Tropical Diseases & Other Parasitic Diseases.....	55
2.2.3.	HIV and Other Blood Borne Infections Division.....	56
2.2.3.1.	Background	56
2.2.3.2.	Policy responses to HIV-AIDS epidemic	57
2.2.3.3.	HIV Prevention	57
2.2.3.4.	HIV care and treatment	58
2.2.3.5.	HIV prevention innovations: index testing and partner notifications	59
2.2.3.6.	Hepatitis Control.....	59
2.2.4.	Tuberculosis and Other Respiratory Diseases.....	60
2.2.4.1.	TB screening and diagnosis	60
2.2.4.2.	TB management and treatment outcomes	61
2.2.4.3.	TB prevention.....	61
2.2.4.4.	Leprosy control	62
2.3.	Maternal Health and Child Health Services	62
2.3.1.	Delivery in health facilities among pregnant women	62
2.3.2.	Antenatal Care	63
2.3.3.	Family Planning	64
2.3.4.	Immunization among children.....	65
2.3.5.	Fight against malnutrition among children under 5 years	65
2.3.6.	Adolescent sexual and reproductive health.....	66
2.3.7.	Sexual and gender-based violence (SGBV) cases received at Health Facilities.....	66
2.4.	Epidemiology and Disease Surveillance.....	67
3.	RESEARCH, KNOWLEDGE MANAGEMENT AND CONFERENCE.....	69
3.1.	Capacity development workshop in clinical trials development.....	69
3.2.	Rwanda Population-Based HIV Impact Assessment (RPHIA).....	69
3.3.	The 7th Conference of the College of Surgeons of East, Central and Southern Africa (COSECSA).....	70

3.4.	The 7 th Scientific Conference of the College of Ophthalmology of Eastern, Central and Southern Africa 2019 in Kigali, Rwanda.....	70
3.5.	Dissemination of the Health Sector Strategic Plan (HSSP IV) 2018-2024 and Sub-Strategic Plans.....	71
3.6.	The 20 th International Conference on AIDS and STIs in Africa	72
3.7.	International Research Conferences	72
3.8.	Other Health Sector Related MICE organized in 2017-2020.....	73
ANNEXES: Other Health Sectors Statistics 2017-2019 As Published in the Rwanda Statistical Yearbook 2019		76
A.	Infant and Maternal Health Indicators	77
Table a.1.: Caesarian sections in District Hospitals and referral Hospitals		77
Table a.2: Births and prenatal deaths in public health centers, referral hospitals and district hospitals		77
B.	HIV Prevalence.....	78
Table b.1: HIV prevalence rate by some characteristics in VCT.....		78
Table b.2: HIV prevalence rate among VCT		78
Table b.3: HIV+ prevalence among pregnant women by province.....		79
Table b.4: HIV+ pregnant women who received Anti-retroviral therapy (ART) to reduce the risk of MTCT/PMTCT (15-49)		79
Table b.5: Percentage of ARV (Anti-Retroviral) Distribution and Children on ARV		80
Table b.6: Percentage of ARV (Anti-Retroviral) distribution by type of health facility		80
Table b.7: Number of couples tested for HIV		80
Table b.8: Voluntary HIV /AIDS testing by age group.....		81
C.	Family Planning.....	82
Table c.1: Family Planning Users by method and units distributed in health facilities		82
D.	Malaria.....	82
Table d.1: Malaria proportional Mortality 2012-2018.....		82
E.	Tuberculosis.....	83
Table e.1: Incidence of tuberculosis.....		83
Table e.2: Community Health Workers (CHWs) participation in community DOTS		83
F.	Nutrition	84
Table f.1: Growth monitoring for less than 5 years by community health workers.....		84
Table f.2: Hospitalization for childhood malnutrition and health outcomes		84
Table f.3: Outpatient treatment of malnutrition and health outcomes		85
G.	Gender Based Violence	86
Table g.1: Gender Based Violence		86

LIST OF TABLES

Table 1: Trends of numbers of Public Health Facilities in Rwanda in 2016-2019	3
Table 2: Number of New Cases Among Outpatient Visit in Health Facilities 2016-2019	5
Table 3: Table: Number and type of surgery performed, 2017 and 2019	6
Table 4: Surgery quality indicators.....	6
Table 5: Health Facilities with permanent electricity	7
Table 6: Trends of laboratory tests performed nationally: 2017, 2018, 2019	10
Table 7: Number of Ambulance by Hospital, 2019	12
Table 8: EMS Calls and time 2018-2019.....	13
Table 9: Types of interventions carried out	14
Table 10: EMS receiving health facilities.....	14
Table 11: Contribution of the Private Sector to the Health Sector	16
Table 12: Health Professionals per population in Rwanda in 2019.	18
Table 13: Number of people screened and suspected for NCDs during community checkup 2017-2019.....	25
Table 14: Number of women screened for cervical and breast cancer	27
Table 15: Trends of mental healthcare services by types of disease.....	40
Table 16: Outpatients visits for oral health diseases.....	43
Table 17: Summary achievements 2017-2019 in eye care program	45
Table 18: Percentage of GBV cases received by facility type, 2016-2019.....	66
Table 19: Top ten causes of morbidity in Health Facilities, 2017	68
Table 20: Top ten causes of morbidity in Health Facilities, 2018	68
Table 21: Top ten causes of morbidity in Health Facilities, 2019	69
Table 22: Other Health Sector Related Meetings and Conference Organized in 2017, 2018 and 2019	74
Table 23: Health Sector Budget Execution: July 2017-June 30, 2018	76
Table 24: Health Sector Budget Execution: July 2018-June 30, 2019	76

LIST OF FIGURES

Figure 1: Source of power for health facility without electricity.....	7
Figure 2: Sources of water in health facilities, 2019.....	8
Figure 25: Graduation of medical specialist 2002-2019.....	19
Figure 3: Proportion of Health Facilities with Internet connection	19
Figure 4: Use of the National Medical Equipment Maintenance & Management System	21
Figure 5: NCDs screening during the celebrations of World Heart Day and World Diabetes Day	25
Figure 6: People reached with educational NCDs prevention messages during UMUGANDA from July 2017 – Dec. 2019.....	26
Figure 7: Total palliative care patients, NCDs stable patients and suspected cases of NCDs in the community from July 2017- Dec 2019.....	26
Figure 8 : A team operating on a patient with Rheumatic heart disease in Rwanda 2019.....	28
Figure 9: Rwanda Cancer Center.....	29
Figure 10: Patients screened and Devices provided at HVP Gatagara 2017-2019	30
Figure 11: New Gahini Rehabilitation Center was officially inaugurated on 18 April 2019.....	30
Figure 12: Top 10 cancers in males in 2018.....	33
Figure 13: Top 10 cancers in females in 2018.....	33
Figure 14: Mechanisms of Injuries among diseases patients	35
Figure 15: Male top 20 leading cause of death, 2019	36
Figure 16: Female top 20 leading cause of death, 2019.....	37
Figure 17: Trends of malaria cases 2014-2018.....	54
Figure 18 Patients on ART vs Health Facilities ART Services Provision 2005-2019.....	59
Figure 19: Trends of assisted delivery in Health Facilities 2013-2019.....	63
Figure 20: Utilization rate of Antenatal Care(ANC) in the Fiscal Year 2018 2019	63
Figure 21: Trends of ANC 1 st vs ANC 4 Standard Visits 2013-2019.....	64
Figure 22: Prevalence of modern contraceptive rate per Districts by June 30, 2019.....	64
Figure 23: Immunization coverage in the Fiscal Year 2018-2019.....	65
Figure 24: SGBV Cases received at Health Facility, 2016-2019.....	66

LIST OF ACRONYMS

AIDS	Acquired Immuno-Deficiency Syndrome
ANC	Ante Natal Care
ART	Anti-Retroviral Treatment
BCC	Behavioral 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
EMR	Electronic Medical Records
EMTCT	Elimination of Mother to Child Transmission
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 Counseling and Testing
WHO	World Health Organization

INTRODUCTION

The period 2017-2019 for the Rwanda Health Sector covers the end of HSS III and the launch of the HSSP IV. The design of both strategic plans have been guided by the need to implement actions and interventions meant to achieve Universal Health Coverage for the Rwandan population, through the improvement on the availability and accessibility to quality healthcare services; as well as the improvements on health outcomes for the Rwandan Population. This performance report highlights key achievements registered by the Rwanda Health Sector for the period 2017-2019 in areas of diseases prevention and control, health systems strengthening and healthcare services delivery.

1. HEALTH SYSTEM STRENGTHENING

The mission of the Rwanda Health Sector is *to provide and continually improve affordable promotive, preventive, curative and rehabilitative health care services of the highest quality, thereby contributing to the reduction of poverty and enhancing the general well-being of the population*. To be able to fulfil this mission, the Rwanda Ministry of Health (MoH) emphasizes on the strengthening of the Health System in all its components: health service delivery, health workforce, health information systems, access to essential medicines, health systems financing leadership and governance. This section highlight selected achievement registered from 2017 to December 2019, in the areas of health service delivery, health workforce, health information systems, access to essential medicines, and health systems financing.

1.1. Health Service Delivery

Rwanda has managed to create a well-established network of health facilities with good geographical coverage, supported by an adequate fleet of ambulances for the pre-hospital and emergencies services. The healthcare packages have been defined for each level, down from the community level up to the referral level. Accreditation standards developed, disseminated and implemented in all public hospitals; and quality assurance teams established in each health facility. Future efforts will be focused on addressing further expansion of the health infrastructure to Administrative Sectors without health centres or Administrative Cells without Health Posts; improving IT infrastructure in health facilities; provision of specialized services at secondary and tertiary levels; strengthening emergency and pre-hospital services.

For this reporting period, several achievements were registered regarding the promotion of s Universal Health Coverage of essential healthcare services. In this report, achievements described in healthcare services delivery are related to:

- Geographical accessibility to healthcare services
- Laboratory services
- Blood Transfusion
- Quality improvement standards for service delivery across the health facilities in the accreditation program, and community participation through the patient Voice Program “Ijwi ry’umurwayi” (PVP) and the Use of technology to support healthcare services delivery.
- The contribution of the private sector in healthcare services delivery.

1.1.1. Geographical accessibility to health care services

Efforts to continue improving geographical accessibility to medical infrastructure were sustained and the number of public and private health facilities (i.e. hospitals, health centers, health posts, clinics, dispensaries, polyclinics and specialized clinics) increased from 1285 to 1735 (See table below). From 2016 to December 2019, the following achievements were registered regarding construction, upgrading and renovation of Health Facilities:

- Five projects for the construction of new District Hospitals (Gatonde, Gatunda, and Nyabikenke), upgrading and renovation of existing District Hospitals (Munini and Nyarugenge) have started are at an advanced level of completion. Once the construction, upgrading and renovation of these health facilities will be completed, they will all be equipped with modern medical infrastructure and equipment.
- The upgrading, renovation and rehabilitation of phase one of Byumba Hospital were completed.
- A national rehabilitation centre for people with disabilities was completed and inaugurated at Gahini in Kayonza District. The centre will provide physiotherapy services, prosthesis and orthosis to patients.

- Till 2014, there were 43 District Hospitals in Rwanda. In May 2014, the Cabinet to upgrade 4 District Hospitals to the level of Provincial Hospital (Rwamagana, Bushenge, Ruhango, and Kinyihira) and 3 other District Hospitals to the level of Referral Hospitals (Kibuye, Kibungo, and Ruhengeri). For the last five years, the Government of Rwanda has decided to further decentralize the healthcare services and improve geographical accessibility to health facilities. The plan is to strengthening the primary healthcare system by constricting more health posts ensure that each Administrative Cell without a health center. That decision has allowed to increase the number of health posts from 471 in 2016 to 885 in 2019.

Table 1: Trends of numbers of Public Health Facilities in Rwanda in 2016-2019

Heath Facility type	2016	2017	2018	2019
National Referral Hospital	8	8	8	8
Provincial Hospital	4	4	4	4
District Hospital	36	36	36	36
Health Center	499	503	504	509
Prison Clinic	14	13	13	13
Health Post	471	505	703	885
Private Dispensary	125	130	130	123
Private Clinics and polyclinic	123	128	128	149
Private Hospital	5	5	8	8
Total	1285	1332	1534	1735

- Building and/or partnering with the private sector to establish new health facilities have improved the geographic accessibility to health care and contributed to the reduction of the average time used by a Rwandan citizen to reach a health facility. The average time (in minutes) used to reach the nearest health facility reduced from **95.1 minutes in 2010 to 49.9 minutes in 2017** (EICV 2016/2017). The sustained improvement in geographical accessibility to healthcare services has equally contributed to the increase of the number of outpatient visits in health facilities.

- Between 2016 and 2019, the Government of Rwanda doubled the number of Health Posts. That resulted in the increase of outpatient visits in health posts and the decrease of outpatient visits in Health Centres. In 2019, the number of outpatient visits in health was at 16.4% while it was less than 1 percent in previous years.

Table 2: Number of New Cases Among Outpatient Visit in Health Facilities 2016-2019

Facility Type	2016		2017		2018		2019	
	# of cases	Percentage(%)	# of cases	Percentage(%)	# of cases	Percentage(%)	# of cases	Percentage(%)
Health post	71,927	0.4	37,120	0.2	106,081	0.6	3,232,422	16.4
Private Health Facilities	601,483	3.6	632,408	3.5	679,958	3.6	1,059,694	5.4
Health Center	13,957,396	82.6	13,781,240	76.3	14,801,030	78.3	12,133,255	61.4
Prison Clinic	138,940	0.8	133,377	0.7	141,265	0.7	158,137	0.8
CHW Home-based care	1,426,442	8.4	2,692,570	14.9	2,276,521	12.0	2,210,825	11.2
District Hospital	496,462	2.9	544,918	3.0	631,770	3.3	672,118	3.4
Provincial Hospital	42,946	0.3	47,657	0.3	62,645	0.3	58,524	0.3
Specialized hospital (Orthopedic rehabilitation center)	1,323	0.0	1,141	0.0	2,470	0.0	2,749	0.0
Referral Hospitals	170,240	1.0	191,960	1.1	204,822	1.1	217,423	1.1
Grand total	16,905,836	100.0	18,062,391	100.0	18,906,562		19,745,147	100.0
Total Population	11,533,446		11,809,295		12,089,720		12,374,398	
Per Capita utilization rate	1.47		1.53		1.56		1.6	

Table 3: Table: Number and type of surgery performed, 2017 and 2019

Type	2017	2018	2019
Major surgery	72179	78522	95627
Minor surgery	51043	54795	62583
Grand Total	123222	133317	158210

Table 4: Surgery quality indicators

Indicators	2016	2017	2018	2019
Surgical Volume Per 100000 Population	998	1060	1122	1294
Perioperative Mortality Rate	0.64	0.6	0.61	0.51
Cataract Surgical Rate	270.5	316.2	387.8	504.8
Surgical, anesthesia and Obstetrics-Gynecology (SAO) provider density				4.2

- To be able to function adequately, Health facilities need to be equipped with permanent electricity and water. As of December 2019, close to nine in ten (89%) public health facilities in Rwanda had permanent electricity (i.e. being connected to the national grid). Fifty-seven percent (57%) of Health without a permanent sources of electricity (i.e. not connected to the national grid) were using a generator as a source of electricity. Twenty-nine percent were using solar panel as a source of electricity. The target in HSSP IV is to have all public health facilities connected to the national grid by 2024.

Table 5: Health Facilities with permanent electricity

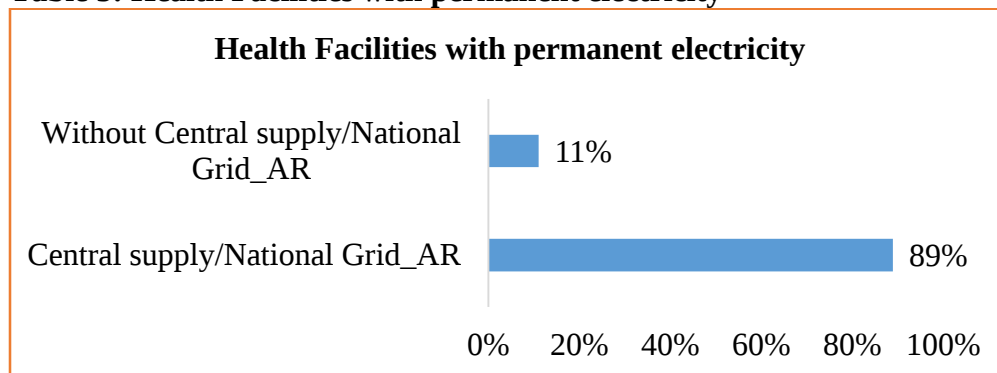
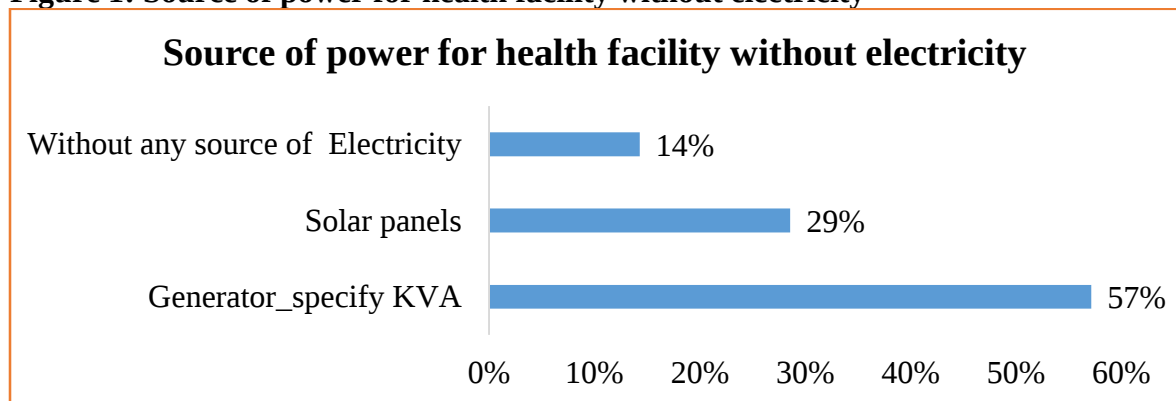
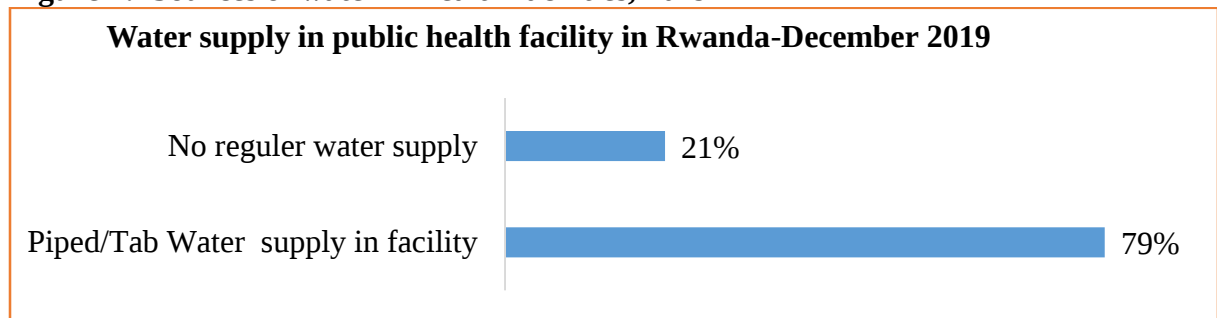


Figure 1: Source of power for health facility without electricity



- As regards to water, by December 2019, close 8 in in ten public health facilities in Rwanda had permanent source of water (connected to the national water network).

Figure 2: Sources of water in health facilities, 2019



1.1.2. Laboratory services

To strengthening access to quality healthcare services, the Rwanda Health Sector continued to invest in laboratory services improvement, collection and distribution of blood and blood to those who need it in Hospitals, construction of new Hospitals, renovation and upgrading of health facilities, promotion of community participation in quality assurance in healthcare settings, use of information communication technology to facilitate healthcare services delivery, training and capacity building of human resources for health, availing and distribution medical products, strengthening the pre-hospital care services, and research and knowledge management.

- In the context of Ebola virus disease (EVD) in the Democratic Republic of Congo (DRC), a strong rapid response team to Haemorrhagic Fever Viruses' outbreak and other potential pathogens to cause outbreak was established by the National Reference Laboratory. A total of 86 staff from the laboratory network in Rwanda was trained on EVD sample collection, packaging, transport and waste management. Fifty (50) of them followed a training of trainers(ToT) on EVD laboratory preparedness and bio-risk management.
- The testing capacity for the diagnosis of HIV has been strengthened, and the routine testing of people living with HIV (PLHIV) was maintained in National Laboratory Network. A total of 22 sites with the capacity of performing Early Infant HIV Diagnosis (EID) at the point of care to deliver the result on the same day were established.
- The National Reference Laboratory established the capacity of determining circulation Measles and Rubella strains by Sequencing method.

- Several trainings, mentorship, supervisions sessions were conducted for the National Laboratory Network (LNU) staff to build their capacity and ensure quality improvement in laboratory services. The target was to train and supervise 450 cadres of 49 sites that were enrolled in the accreditation process.
 - 110 LNU staff were trained on malaria species identification;
 - 46 dispensaries and 30 private clinics were supervised/mentored for quality improvement; 7 National Reference Laboratory Staff were trained as Trainers on recency testing and 46 LNU staff were trained on recency sample management;
 - 60 staff were trained on Biosafety and waste management, just to name a few. new algorithms for HIV & Hepatitis was performed. The National Reference Laboratory obtained Proficiency Testing Certificates from CDC Atlanta in HIV EID, VL certified, Influenza, Measles and Rubella.
 - With the aim to enhance laboratory services, a Nucleic Acid Testing Unit was launched. The new unit will help in toxicology, pathogen identification tests for gene mutations, among other tests. The new unit will improve testing capacity with an additional package to include various Molecular biology technics, it will involve molecular biology tools to diagnose various diseases of public health importance including viruses, bacteria, parasites and fungi.
 - Key tests that will be done include: detection of cancer markers, drug resistance markers, toxins from heavy metals from food and water sources among others. The facility will contribute towards research and development of new ideas in the health sector to control disease mobility and mortality rate in Rwanda. Meanwhile the turn-around time of giving patient results will reduce since the technology is automatic with reliable results in real time.
- The capacity for routine laboratory tests continue to increase of the last years.

Table 6: Trends of laboratory tests performed nationally: 2017, 2018, 2019

Years	2017		2018		2019	
Types of tests	# of tests	Percentage(%)	# of tests	# of tests	# of tests	Percentage(%)
Thick Blood smears	5432423	29.07	5781551	27.63	4574320	19.80
RDT	1023565	5.48	761164	3.64	1134987	4.91
Stools	1859815	9.95	1978266	9.45	2234284	9.67
Urine	1312515	7.02	1702511	8.14	2080876	9.01
Bacteriology	47383	0.25	55127	0.26	760298	3.29
Blood	5937035	31.77	6507990.9	31.10	7086070	30.68
Cerebrospinal fluid	4571	0.02	8607	0.04	11670	0.05
Other	3067827	16.42	4132302	19.75	5216275	22.58
Total	18685134	100.00	20927518.9	100.00	23098780	100.00

1.1.3. Blood Transfusion

- An effective blood transfusion service is one of the essential components of a good healthcare system. The National Centre for Blood Transfusion (NCBT) sustained its mission of “Providing safe, effective and adequate blood” to all patients in need. For this reporting period, important achievements were registered, in terms of both hospital satisfaction demand (against the supply) and quality of blood.
- The rate of hospital satisfaction (Demand Vs Supply) for all blood components increased by 22.1%, down from 70.5% in the fiscal year 2016-2017 to 92.6% in the year 2017-2018 (91,728 units of blood components demanded by hospitals Vs 83,134 blood component units supplied by the NCBT to the hospitals).
- The NCBT managed to carry out hospital mentorship programs to train medical doctors on the rational use of blood. This was meant to discourage hospital over-demanding of blood that had contributed to the hospital satisfaction not mirroring what was really needed by the hospitals in 2016. As a result, demands from hospitals in 2017 were 7,361 units less compared to those in 2016 and the supply was 12,299 units more in 2017 than what was supplied in 2016 leading to the hospital satisfaction of 92.6% as mentioned above.
- This remarkable increase in hospital satisfaction was due to several strategies that were put in place to improve donor mobilization, recruitment, retention, and rational use of blood and blood components within transfusing facilities. All healthcare providers were trained on best transfusion practices followed by on-site mentorship sessions that were done by the NCBT.
- Hemovigilance was closely implemented by the NCBT through partnership with transfusing facilities where on-bed transfusion forms for all transfusion cases were returned to the NCBT regional centres.

1.1.4. Quality improvement standards for service delivery across the health facilities

1.1.4.1. Accreditation program,

The following have been done between 2017-2019:

- The national policy and strategy for quality healthcare services have been developed
- The autonomous accreditation body (private company) has been recruited in order to strengthen the link between purchasing of services and quality improvement evaluation (separation functions and roles for purchaser versus payer).

- Rwanda Primary Healthcare Accreditation Standards have been developed and all health centers are implementing the standards

1.1.4.2. Patient Voice Program “Ijwi ry’umurwayi” (PVP)

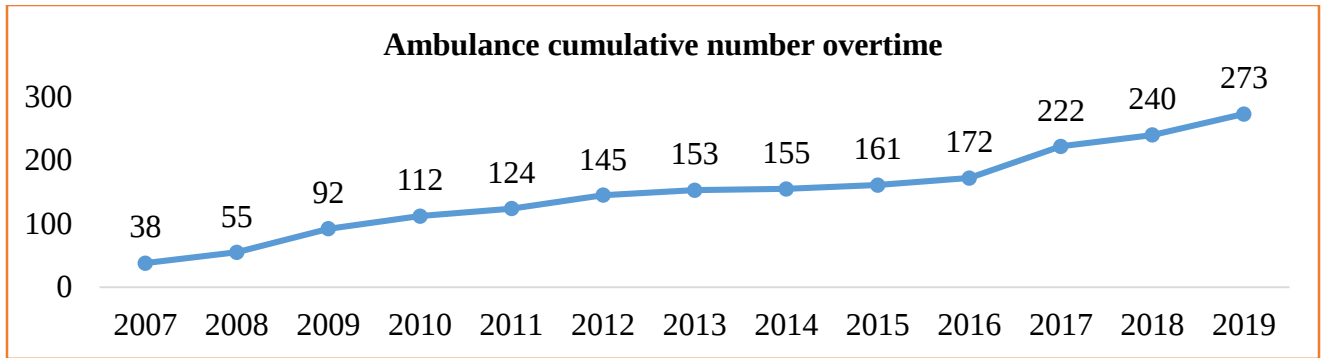
This program has been introduced in September 2018 in all 416 Administrative Sectors in Rwanda and is implemented in all Health Centres to promote interaction between healthcare givers and patients, and ensure continuous quality improvement and safety of care. PVP orientations meetings with key stakeholders were conducted in 20 districts, and PVP trainings of PVP facilitators for interface meetings (Inteko y’Abaturage) were done in 82 Health Centres.

1.1.5. Emergency Medical Services

- An Emergency Medical Services (EMS) was created in 2007 with the main purpose of managing various sets of life threatening emergency conditions in the out of hospital environment during primary medical evacuation and inter-health facilities transfers. It started with a communication facility (912-communication center) which is the backbone of emergency interventions connecting Emergency and Resuscitation Mobile Teams (ERMTs) to communities seeking emergency medical support. The communication center’ operations range from receiving calls and dispatching ERMTs at the emergency scene, to providing health information/guidance to those who are not necessarily requesting ambulance services.
- Since its creation, EMS has grown its staff to better manage emergency conditions. It has increased from a team of 12 staff and 4 ambulances to a larger team of 70 staff and 12 fully equipped ambulances, including one boat ambulance in Lake Kivu.

Table 7: Number of Ambulance by Hospital, 2019

Facility Type	Total Number	Percentage (%)	Average	Minimum	Maximum
District Hospital	207	76	6	2	11
Provincial Hospital	17	6	4	3	5
Referral Hospitals	39	14	5	1	13
National Level	10	4			
Grand Total	273	100	6	1	13
Total Population	12374398				
Population ratio per one ambulance	45,327				



Data from SAMU Division-December 2019

- In fiscal year 2018-2019, the average response time was 61 minutes for primary transfers and 53 minutes for secondary transfers. This is within the Golden Hour (time period lasting for one hour, or less, following an emergency) target for the secondary interventions but need to be improved with the primary ones.

a. Calls and time response in 2018-2019

- In the fiscal year 2018-2019, a total of 26,775 calls were received, including 20,883 calls classified as “**disturbing calls**”.

Table 8: EMS Calls and time 2018-2019

Calls	
Total calls	26,775
Average calls per day	74
Disturbing calls	20,883
Time response	Duration
Primary interventions	61 minutes
Secondary transfers	53 minutes

Data from SAMU Division-December 2019

Interventions	
Total Interventions	5,802
Primary interventions	4,844
Secondary interventions	886
Missed interventions	72

Data from SAMU Division-December 2019

b. Types of interventions completed

A total of 5,363 interventions were completed by EMTs during 2018/2019 as per the table below:

Table 9: Types of interventions carried out

Completed interventions	Types	Number
Trauma	Road traffic accidents	2863
	Falls	225
	Assaults	279
Internal Medicine	Non communicable diseases	448
	Infections	254
	Mental Health	169
Obstetrics/Gynecology	Normal Deliveries	128
	Abnormal Deliveries	198
	Gynecological problems	609
Pediatrics Emergencies		81
Neonatal		109

Data from SAMU Division-December 2019

c. Receiving health facilities

Kibagabaga District Hospital(DH) and Kigali University Teaching Hospital(CHUK) were the top two health facilities to have received many patients transported by EMS Division as per the table below.

Table 10: EMS receiving health facilities

Health Facilities	Number of cases received
Kibagabaga DH	1962
Kigali University Teaching Hospital	1178
Rwanda Military Hospital	264
Masaka DH	194
Muhima DH	224
King Faisal Hospital	181
Health Centers	540
Kacyiru DH	43
Others	359

Data from SAMU Division-December 2019

1.1.6. Contribution of the Private Sector to Health Services Delivery

The contribution of the private sector in the health sector has been important especially to support health systems development and expand specialized care and service provision such as: availing specialized services (lab and diagnostic services, fertility, comprehensive cancer treatment, eye care, dialysis, surgery especially cardiac and minimally invasive surgery, etc...), running Health posts, increasing availability of medical products through social marketing,; malaria control and local production of medicines and medical products coming soon.

Table 11: Contribution of the Private Sector to the Health Sector

OPD new cases	2012	2013	2014	2015	2016	2017	2018	2019
Public HFs	8,221,803	9,551,299	10,842,619	13,388,061	14,829,015	14,650,426	15,819,040	8,884,157
Private HFs		231,425		552,711	602,491	582,779	679,477	536,099
Total	8,307,274	9,782,724	11,359,974	13,940,772	15,431,506	15,233,205	16,498,517	9,420,256
Coverage rate	2012	2013	2014	2015	2016	2017	2018	2019
Public HFs(Percentage)	99%	98%	95%	96%	96%	96%	96%	94%
Private HFs(Percentage)	1%	2%	5%	4%	4%	4%	4%	6%

Table 6: Percentages of Hospitalization by Facility Type

	2016		2017		2018		2019	
Facility Type	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Private	14882	2%	20350	3%	23023	3%	30375	4%
Health center	292401	40%	256528	35%	251133	33%	259869	33%
Hospital	415433	57%	445844	62%	490478	64%	487542	63%
Total	722716	100%	722722	100%	764634	100%	777786	100%

1.2. Human Resources for Health

- The Health Sector has attained several HSSP3 targets pertaining to health professionals' population ratio, expansion of health professional training, instituted retention strategies and established a mandatory continuous professional development program for health professionals. Outstanding challenges remain the gaps in skills mix; a high staff turnover and limited career development opportunities for health professionals at different levels of the health sector.
- The health sector is continuously increasing the number of qualified health Professionals. As of end of end of 2019, there are 1,492 physicians working in both private and public health facilities including 642 specialists and 850 general practitioners. This translates to one doctor per 8,294 people nationally (on the population of 12,374,397 in 2019 according to the NISR projections), which remains higher than the national target of one doctor per 7,000 people by the year 2024 as set in HSSP IV.
- The number of HRH has dramatically increased during the last 10 years as follows:
 - Doctors per population ratio has increased from one doctor/16,001 people in 2010 to 1/8,294 in 2019.
 - Nurses per population ratio has increased from one nurse/1,291 people in 2010 to 1/1,420 in 2019.
 - Midwives per population ratio has increased from 1 midwife/66,749 Women in Reproductive age people in 2010 to 1/2,889 in 2019.
- Since 2002, the number of doctors (GPs and specialists) keep increasing as we have started training specialists in country. According to WHO recommendation, at least one doctor should serve 1000 population with (doctor-population ratio of 1:1000) (WHO, 2016). Currently, Rwanda has one doctor serving about 8,294 of population with (doctor-population ratio of 1:8294). Considering WHO recommendation, the total number of Doctors should be 1/1000, equal to 12,374 while we only have 1,492 currently providing service in health services, the gap is 10,882 Doctors.

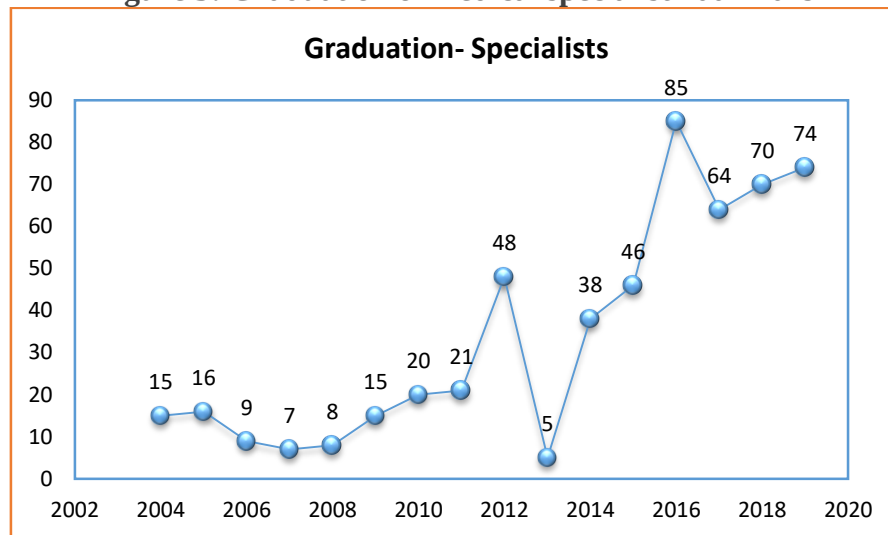
- The number biomedical engineers or technicians trained in Rwanda keeps increasing due to the training efforts of the Integrated Polytechnic Regional Centre (IPRC) and Centre of Excellence in Biomedical Engineering and eHealth (CEBE) institute, and support from other institutions. There are now 139 biomedical technicians with A1 level, and 286 biomedical technicians are pursuing A1 level in Biomedical Engineering in Rwanda.

Table 12: Health Professionals per population in Rwanda in 2019.

Staff per population ratio	Current number	Ratio Per Population	Ratio/1000 Population
Population	12,374,398		
Doctor	1,492	8,294	
Nurse	10,409	1,420	
Midwife per Women in Reproductive age	1,561	2,889	
Total	13,462		1.09

- The current health worker density in Rwanda is 1.09 skilled health workers (physicians, nurses and midwives) per 1000 population, while WHO health workforce density used to recommend a minimum of 4.45/1000 to achieve the SDGs. Rwanda has less than half of Medical Doctors we should have.
- In 2016, in their "Global strategy on human resources for health report; workforce 2030" WHO analyzed the health workforce requirements for Universal Health Coverage (UHC) and the SDGs. The report identified a higher threshold of minimum health workforce required to attain the SDGs. The new SDG index threshold of 4.45 physicians, nurses and midwives per 1000 population represent almost a doubling of the recommended. The Government of Rwanda continued to invest in the training and specialization of Human Resources for Health:
 - 24 Associate Deans (24 for medical doctors and 4 dental surgeons) in have been appointed in 23 training sites to improve medical education;
 - A new National Strategy for Health Professions Development 2030 has been developed. The new strategy at ensuring that all trainings of medical specialties are done in Rwanda. The strategy will also contribute to the improvement of specialized healthcare services provided in Rwanda.
 - In 2019, a total of 69 medical specialists and 72 General Practitioners were deployed in hospitals across the country.
 - The graph below shows the evolution the medical specialists graduation over the last years in Rwanda.

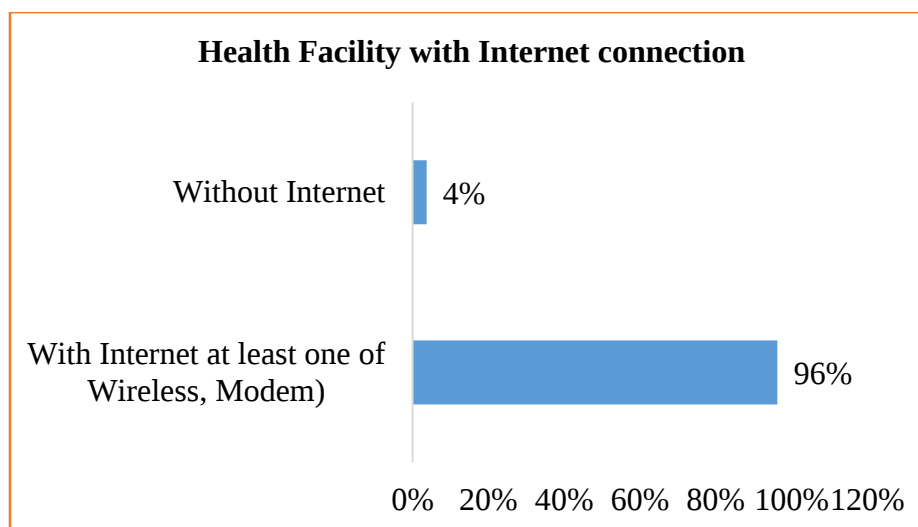
Figure 3: Graduation of medical specialist 2002-2019



1.3. Health Information Systems

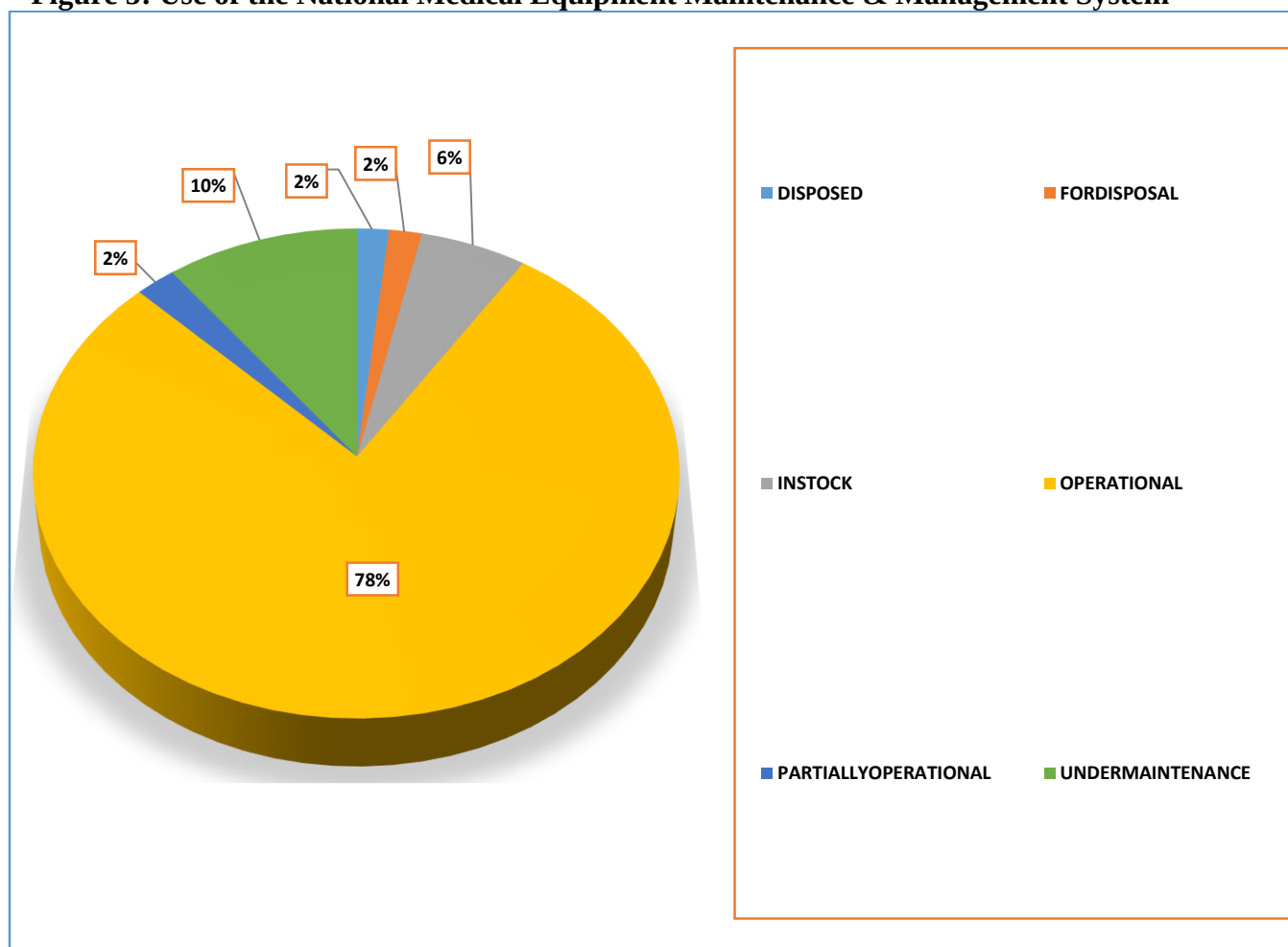
- Over 95 % of Public Health Facilities in Rwanda have internet connection. An e-based, comprehensive and well integrated Health Management Information System (HMIS) collects all routine data from health facilities. Programmatic quarterly coordination meetings with the heads of health facilities have been institutionalised and are held regularly. The next steps include improving data management and use at all levels; improving reporting rate from private health facilities; linking and ensuring interoperability of all information systems as well as strengthening the health research systems for evidence based policy and decision making.

Figure 4: Proportion of Health Facilities with Internet connection



- The Ministry of Health introduced a cost-effective alternative to turn the traditional training into e-training: online distance learning commonly referred to as eLearning. A total of 56 Public and Private Hospitals across the country benefited from the e-learning on the Data Quality Course; and 36 hospitals were connected with Video Conferencing facilities to facilitate e-learning and telemedicine.
- The Ministry of Health expanded the use of an Electronic Medical Record (EMR) System for primary health care services in public Hospitals. The total of public hospitals implementing was 39 Hospitals in 2019.
- An SMS-based platform (RapidSMS) for communication between community based health workers (CHWs) at community level, and the rest of the health system (ambulance, health facility staff, and District Hospital and Central level) through mobile phones has been upgraded to integrated modules on Integrated Severe Malaria and Malaria stock management notifications.
- The National Medical Equipment Maintenance and Management System (MEMMS) has been upgraded, and medical equipment have been recorded in the system. The inventory collection completed at the end of November 2019. The maintenance module is presently open to be used, where by Hospital equipment end-users will generate work orders, and have the hospital technicians, then the Provincial Workshops' technicians and RBC Biomedical Engineers respond to progressively as to provide solutions to maintenance and repairs demands.
- Smart IFMIS (Integrated Financial Management Information System (IFMIS) for the Planning, budgeting and financial management for Public Financial Management in health facilities
- Pharmaceutical Regulatory Information Management System (PRIMS) for the Provision of pharmaceutical regulatory services. This is linked to single window (Rwanda Revenue Authority) for import and clearance service for health commodities and accessible to public.

Figure 5: Use of the National Medical Equipment Maintenance & Management System



1.4. Access to Essential Medicines

- Quality and cost effective drugs and medical equipment are very critical for a better clinical and healthcare service delivery. In this regard, a national institution, the Rwanda Food and Drugs Authority (Rwanda FDA), has been established in February 2018 with the mandate to protect public health, Human and Veterinary medicines, vaccines and other biological products, processed foods, poisons, medicated cosmetics, medical devices, household chemical substances, tobacco & tobacco products and conduct of clinical trials. The authority has more than 129 staff.
- The Rwanda Biomedical Centre continued to ensure equitable access to quality and cost effective drugs and medical equipment, to procure excellent quality pharmaceutical products, and to improve storage and distribution of medical commodities through a computerized management system.

- Rwanda has been transporting blood products using drones to different health facilities especially in remote areas since October 2016. In 2018-2019 fiscal year, the scope was increased to include other medical products in addition to blood. From April 2019, hospitals across the country started ordering and receiving other medical products in addition to blood including those that require urgency such as anti-rabies vaccines. By December 2019, a total of 25 health facilities (mainly district hospitals) had access to these services. The planning process for health centers to start using drone services took place and soon drones will be delivering medical products to health centers across the country.
- In addition, the drone services coverage has expanded to serve more health facilities by setting up a new drone distribution center at Kayonza District, in the Eastern Province. It will cover health facilities in Eastern Province and some in the Northern Province. The other distribution center is located in Muhanga District and covers the Southern Province, Western Province and a small part of Northern Province.
- Another important achievement for this reporting period is the completion of the installation of the firefighting and suppression system at Kacyiru warehouse for continuous improvements of the storage conditions. A new strategy about anticipation in procurement was introduced. This was done by changing the time for planning (Quantification) moved from May to November. This allowed the anticipated procurement and contributed to timely availability of products.
- Now there is ongoing reform toward establishment a semi private company “**Rwanda Medical Supplies (RMS)**” to address the issue of availability of drugs, commodities and medical equipment in the country.

1.5. Health systems financing

- The Government spending on health has surpassed the 15% required under the 2001 Abuja Declaration (with **15.8% as of end of Fiscal year 2018/19**) showing the country high commitment and support to the development of the health sector financing.
- Risk pooling has been greatly improved because of the extension of Community-Based Health Insurance (CBHI) scheme, which allow the majority of the population access to healthcare services and reduce significantly out-of-pocket expenditures in particular for the poor and most vulnerable people. The CBHI coverage was 79% as of end of Fiscal year 2018/19.

- Following the resolution of the 16th National Leadership Retreat to: “Expedite new strategies for ensuring the financial sustainability of the Community Based Health Insurance”. The Community Based Health Insurance (CBHI) sustainability plan is under development and its overall objective is: (1) to forecast resources for CBHI and health service costs, (2) to propose cost containment strategies and (3) to describe the Financing gap and the quantified strategies that can be implemented to close this gap.
- The Health Financing Strategic Plan (2018-2024) has been developed, validated and disseminated for further use. This strategy provides guidance for key health financing strategies and a results framework which will be used to both monitor progress toward achieving results and evaluate the impact of the various health sector financing interventions, towards UHC and health related SDGs.

2. DISEASES PREVENTION AND CONTROL

2.1. Non-communicable Diseases (NCDs)

2.1.1. Cardiovascular diseases, cancer, diabetes and chronic respiratory diseases

The largest portion of the NCDs burden in low and middle income countries is represented by cardiovascular diseases (CVD), followed by cancer, diabetes and chronic respiratory disease (World Health Organization, 2016). The Rwanda Non Communicable Disease (NCD) policy aims at protecting Rwandans from premature morbidity and mortality related to NCDs and injuries, with a target to decrease mortality in those younger than 40 years old by 80% and to save 8,300 lives per year. To achieve this target, a combination of strategies is implemented, including awareness on NCDs risk factors and strategies for early detection and management of NCDs.

One of lessons learnt from the implementation of HSSP III is that Rwanda has started going through an epidemiological transition. In the development of HSSP IV in 2018, the Rwanda Health Sector anticipated the increase in population and life expectancy and the increase of the health needs of the elderly, notably in Non-Communicable Diseases (NCDs); and committed to invest in building secure and resilient health systems to accommodate the ongoing epidemiological transition. The Rwanda Health Sector also committed to continue scaling up the proportion of health facilities with the capacity to manage non-communicable diseases (NCDs). The following section describes major achievement in NCDs prevention and control over the last 3 years.

2.1.1.1. NCDs Awareness Raising, Prevention and Early Detection

Non-Communicable Diseases can be largely prevented through implementing WHO best buys in NCDs prevention by avoiding risk factors. Major modifiable NCDs risk factors include tobacco smoking, alcohol abuse, poor diets (high consumption of sugar, salt, saturated fats, and Trans fatty acids) and physical inactivity. Various studies have demonstrated that early detection of NCDs and timely initiation of management are linked with better treatment outcomes. The Ministry of Health in collaboration with partners has put much effort in raising awareness of the community on NCDs risk factors, signs and symptoms as well as the benefits of early detection. Patients screened positive are linked to health facilities for enrolment into NCDs care and treatment programs. To maximize the impact, we have used combined awareness and early detection strategies to reach out to a bigger number of people from different communities.

a. Rwanda Car Free Day for NCDs Awareness Raising and Early Detection

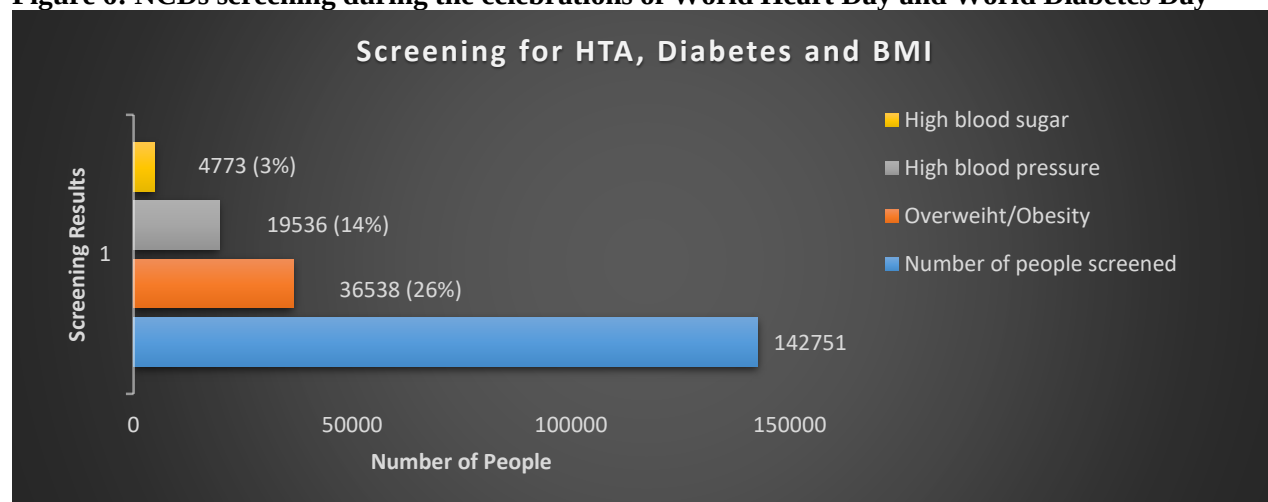
In May 2016, the Ministry of Health through Rwanda Biomedical Centre in collaboration with the City of Kigali launched the Car Free Day initiative intended to encourage people to do regular physical activities to prevent NCDs. It started once a month, now, it has become twice a month and has been extended to other districts all over the country. On top of doing physical activity, it also serves as a platform for NCDs awareness and diseases screening. During the Third High-level meeting of the UN General Assembly, 2017, the UN Interagency Task Force in recognition of its outstanding contribution to achieving NCD-related Sustainable Development Goals gave the Rwanda Ministry of Health an award. Since the beginning of the initiative in 2016, 48782 people have been screened for NCDs where, high blood pressure was at 23.7%, high blood sugar at 9.4% and obesity at 11%.

b. NCDs Early Detection at Primary Health Care level

In order to promote NCDs early detection in the community, since March 2014, the Ministry of Health initiated NCDs community check-up at primary health care level using a simple checklist containing major NCDs signs and symptoms, people screened positive undergo laboratory investigations to confirm or exclude the diagnosis. The initiative targets women above 35 years and men aged 40 and above.

Results below show that a combination of different intervention can help in increasing access to NCDs services, especially the screening for early detection. The graph and table below show achievements registered from different NCDs prevention and early detection interventions over the last three years (2017-2019).

Figure 6: NCDs screening during the celebrations of World Heart Day and World Diabetes Day



Source: RBC Activity Reports (NCDs Division)

Table 13: Number of people screened and suspected for NCDs during community checkup 2017-2019

Year	Total screened	Diabetes	Cancer	CVDs*	Disability	CRD*
2017	189696	9885 (5%)	2048 (1.1%)	20896 (11%)	1259 (0.7%)	7256 (4%)
2018	155095	6495 (4%)	1221 (0.8)	20901 (13%)	1100 (0.7%)	5356 (3%)
2019	234904	4982 (2%)	530 (0.2%)	24841 (11%)	130 (0.1%)	4146 (2%)

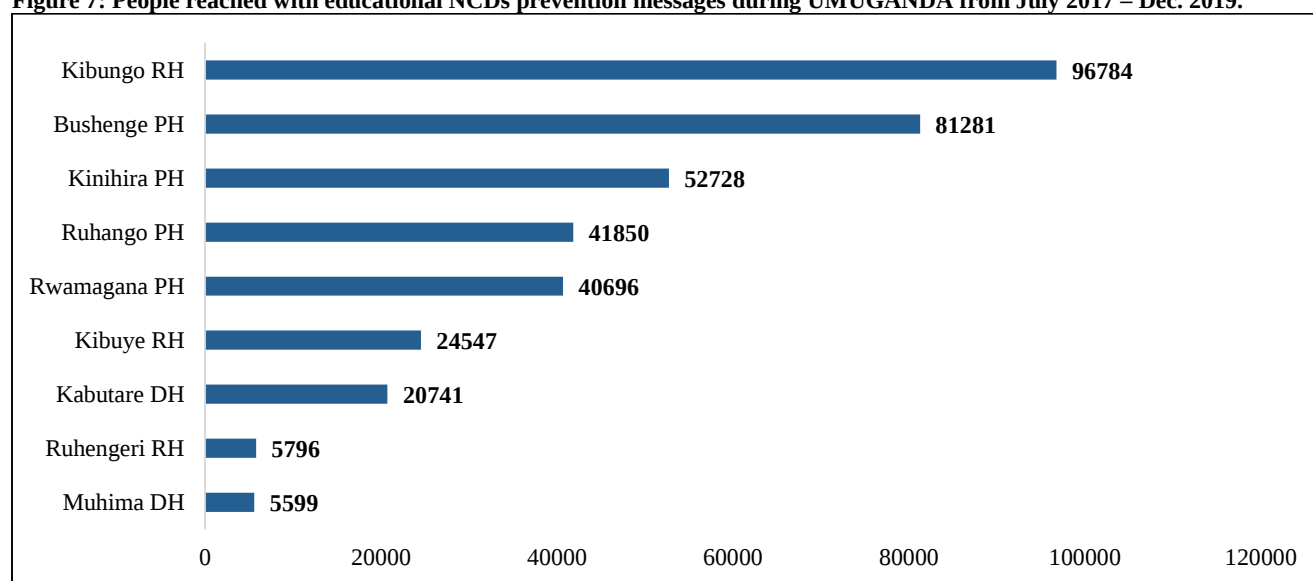
*CVDs: Cardiovascular Diseases, CRD: Chronic Respiratory Diseases. (Source: HMIS, 2019)

c. Home Based Care Practitioners (HBCPs) Program

Home based Care Practitioners Program was launched in March 2017 in the framework of enhancing NCDs awareness in the community, providing palliative care at home, follow up of NCDs stable patients, screening of NCDs, and conduct verbal autopsy to determine probable causes of deaths that occur outside of the health facilities. The pilot program started with 105 cells (5%) with an average population of 5,000 per Cell. From July 2017 to December 2019, they reached out to 370,022 people providing awareness messages on prevention of NCDs risk factors.

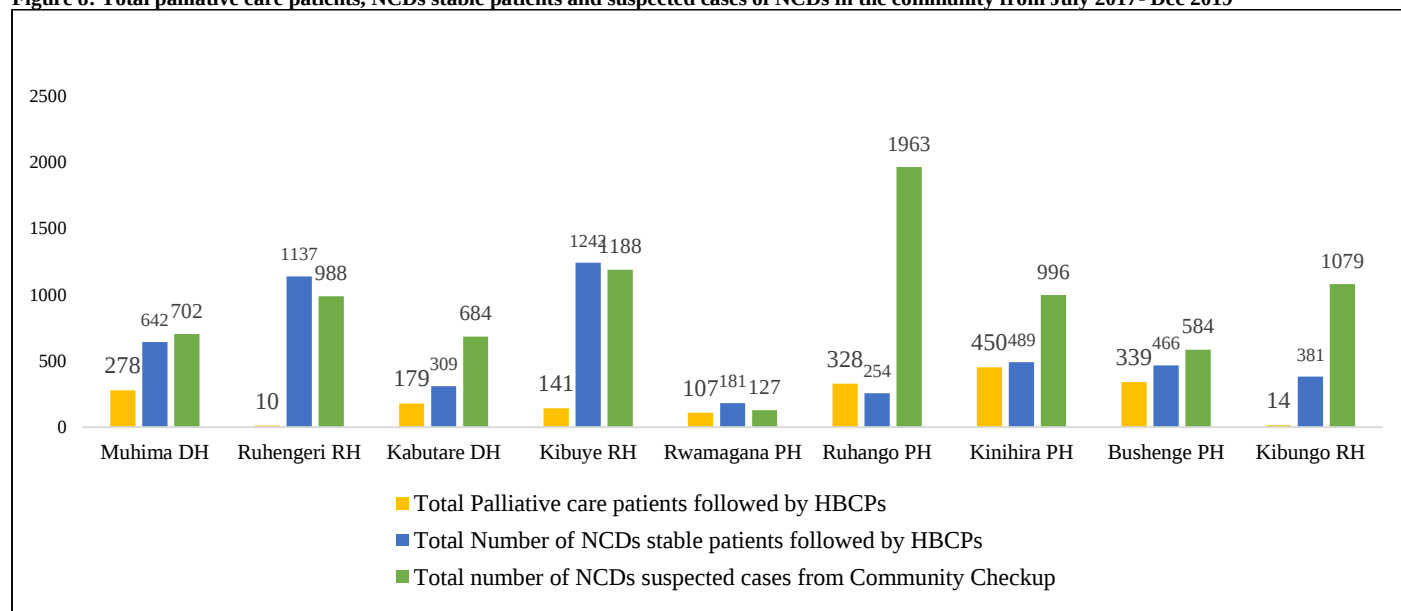
The HBCP Program has proved to be a model through which basic, holistic home-based care can be delivered. The results imply an increase in quality of life, a significant reduction in the caregiver's burden of care, and a decreasing financial impact on hospital admissions, as patients are able to remain home with controlled symptoms. The figures beneath show the results of HBCP program.

Figure 7: People reached with educational NCDs prevention messages during UMUGANDA from July 2017 – Dec. 2019.



Source: HMIS, 2019

Figure 8: Total palliative care patients, NCDs stable patients and suspected cases of NCDs in the community from July 2017- Dec 2019



Source: HMIS, 2019

d. Facility based breast and cervical cancer screening

Breast and cervical cancer are the top two cancers in Rwanda in terms of prevalence/incidence and mortality and yet cervical cancer can be prevented through screening and treatment of cancerous lesions. In addition, both cancers can be successfully treated if detected at an early stage. The table below shows the number of women (30-49 years old) screened for cervical cancer screening through Vision inspection with acetic acid and breast cancer using the Clinical breast exam at primary health care level (19 DHs and 249 HCs) from 2017 to 2019.

Table 14: Number of women screened for cervical and breast cancer

Disease	Number screened	Screened positive/suspected	Percent
Breast cancer	92421	2902	3.1
Cervical Cancer	69422	974	1.4

2.1.1.2. Non Communicable Diseases Care and Treatment

In this section, we will describe achievements in decentralization of CVDs, Diabetes and Chronic respiratory diseases management, control of injuries and disabilities, Cancer diagnosis as well as in Palliative care.

2.1.1.2.1. Decentralization of the management of CVDs, Diabetes, Asthma and Chronic respiratory diseases at primary health care level.

In order to increase the geographical and financial access to NCDs care and treatment services, we have established NCDs clinics in hospitals and health centres. The clinics are run by trained nurses that take care patients with CVDs, diabetes, Asthma and Chronic respiratory diseases in close collaboration with medical doctors. In the process of establishment of NCDs clinics in health centres, since 2016, we have trained 977 on NCDs management; the training also included palliative care, cancer early detection and basic life support. As of December 2019, all health district hospitals and health centres in the county have been trained on NCDs management and had established functional NCDs clinics. In order to improve the quality of care provided to patients, a mentorship program has been established where mentors from central level visit each hospital at least twice a year, health centres are also mentored by district hospitals. Due to the increased of number of health facilities with NCDs clinics, the number of enrolled patients has increase 4-folds from 22,475 in January 2017 to 90,181 cases by December 2019.

2.1.1.2.2. Open Heart Surgery

Every year, the Ministry of Health in collaboration with humanitarian organizations conduct open heart surgeries at King Faisal Hospital. In the last 3 years among 398 patients that were eligible for surgery, 150 (38%) have been operated on. The shortcoming in this program is that there are many patients still waiting for heart surgery. The capacity of local team is being built so that local teams can do operations independently; a Rwandan Cardiac Surgeon has done recent operations.

Figure 9 : A team operating on a patient with Rheumatic heart disease in Rwanda 2019.



Source: www.rba.co.rw

2.1.1.2.3. Cancer Care and treatment

a. Increased capacity of pathology laboratories

Pathology laboratories have been upgraded to reduce delay between sampling and results through acquisition of automated histopathology processing machines at Butaro Cancer center and Rwanda Military Hospital in 2016. This has led to reduce the time between sample collection and results to delivery from 2-4weeks (with manual processing) to 3-5 days with automated samples processing machines. Telepathology systems installed at BCCOE in 2016 and RMH 2018 respectively allowing skills exchange between Rwandan pathologists and experts towards high standard cancer diagnosis. It is worth mentioning that the number of pathologists has increase to 16 from 5 people in 2017.

b. Establishment of Rwanda Cancer Center

Rwanda cancer center closer to Rwanda Military hospitals started to operate in March 2019. It has the specialty to provide cancer treatment with Radiotherapy. It has been equipped with 2 Linear accelerator machines. This enabled to deliver the final link to cancer treatment. This has increased accessibility of the general population in quality cancer treatment with radiotherapy and reduced dramatically the number of patients who were referred abroad to receive those services. The Center has treated more than 500 patients in 2019. The number of oncologists has also increased significantly, while we had only one oncologist in 2017, now we are counting 6 Rwandan oncologists and others still on studies will graduated soon. In addition, the University of Rwanda has started graduating nurse oncologist.

Figure 10: Rwanda Cancer Center



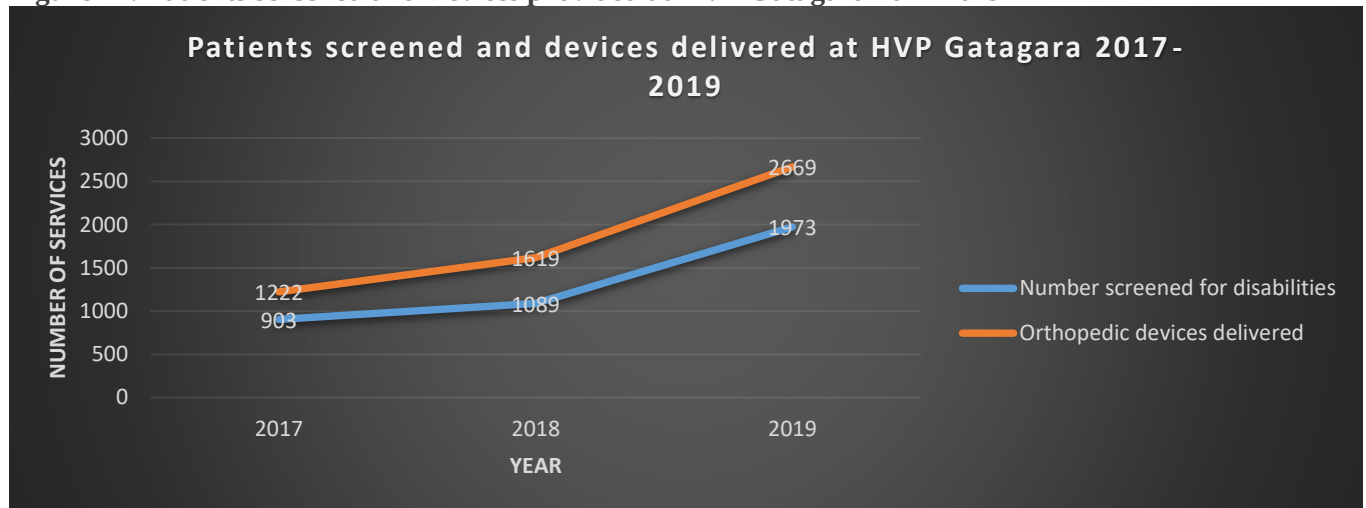
source: <https://rwandamilitaryhospital.rw/>

2.1.1.2.4. Injury and Disabilities

a. HVP Gatagara Orthopaedic and Rehabilitation Hospital

Since 2018, HVP Gatagara got a status to operate as a specialized hospital in orthopedics and rehabilitation services and CBHI is covering those services that has increased the number of patients and services provided.

Figure 11: Patients screened and Devices provided at HVP Gatagara 2017-2019



b. Gahini Rehabilitation Centre

Gahini Rehabilitation Center (GRC) offers comprehensive rehabilitation services including Orthopedic surgery, Orthopedic appliances (prosthetics, orthotics...), Physiotherapy, Occupational therapy and Community Based Rehabilitation (CBR). During the period 2017-2019, the production of Gahini rehabilitation center was as follows:

- **Screening:** 70,000 people screened for disabilities
- **Orthopedic surgery:** 560 operations
- **Orthopedic appliances:** 600 orthosis and prosthesis provided to people in need
- **Other assistive devices** (crutches, wheelchairs, SFABs...): around 1,500 devices provided to people in need
- **Physiotherapy and Occupational therapy:** 5,000 children with cerebral palsy treated
- **Gahini Rehabilitation Center** was recently renovated and equipped in collaboration with Christian Blind Mission (CBM), BMZ and Ottobock.

Figure 12: New Gahini Rehabilitation Center was officially inaugurated on 18 April 2019



c. Other key achievements related to injuries and disabilities from 2017-2019

- A modern Audiology Center has been established by the Rwanda Military Hospital with the capacity to perform hearing assessments for new born, children and adult people. This center has also an Ear Mould Lab and Provides hearing aids for patients with severe hearing loss
- 8 Health Care providers working in District and Provincial hospital emergency departments have been trained in trauma management
- In collaboration with The Umbrella of Organizations of Persons with Disabilities in the fight against HIV&AIDS and for Health Promotion/UPHLS, around 112 Health care providers have been trained on basic sign language, including 45 who were trained on sign language used in sexual and reproductive health specifically
- In collaboration with Humanity and Inclusion, 126 rehabilitation professionals and nurses have been trained on Early Impairment detection, referrals and transdisciplinary management
- The Latter Day Saints Church donated around 1,500 wheelchairs to persons with disabilities
- In collaboration with Starkey Hearing Foundation 7,616, hearing aids have been fitted to persons with hearing issues.
- Centre de Chirurgie Orthopédique Pédiatrique et de Réhabilitation, Sainte Marie de Rilima over the last 3 years, they have received 3,034 patients, among them, 511 were operated and 673 received 1,120 orthopedics appliances
- Inkurunziza Orthopedic Hospital: from 2017 to 2019, 13,291 PWDs attended the hospital, 4202 were operated, 7441 received physical and functional rehabilitation and 2,482 received orthopedic devices and walking aids.

2.1.1.2.5. Palliative care.

- In the framework of integrating palliative care into existing health system, over the last 3 years, palliative care multidisciplinary teams from hospitals have been strengthened through regular clinical mentorship and new trainings. In addition, Palliative care services have been further decentralized to health centers where all health center have a least one nurse trained in providing palliative care services. The local production of oral morphine solution has continued and patients are accessing the medicine free of charge.

- Important to note also the achievements registered through Home Based Care Practitioners providing palliative care at home where 1,846 patients from 105 interventions cells have been provided services (see figure N° 3).

a. Pain Free Hospital Initiative

- In collaboration with American Cancer Society (ACS), Ministry of Health through Rwanda Biomedical Center initiated the Pain Free Hospital initiative in 2018 with aim of integrating effective pain treatment into hospital-based services. The following are key achievements registered by the initiative for the period 2018-2019:
 - 1000 clinicians including doctors, nurses, anesthetist, pharmacists have been trained through onsite training led by trained hospital PFHI staff champions
 - 11 hospitals including teaching hospital, referral hospital, provincial hospital and district hospital are implementing the project
 - All these hospitals, pain scores (pain reporting by patients) have significantly reduced from severe pain (6-10) to mild pain (1-2)
 - Best practice in pain assessment, management and documentation have improved since pain has become 5th vital sign
- The integration of palliative care services into the health system and the PFHI project have increased morphine consumption, which is a proxy indicator for quality palliative care services. The consumption of morphine has increased **226- folds from 0.035 kg in 2013 to 9.168 kg in 2019.**

2.1.1.3. NCDs Monitoring, Evaluation and Research

2.1.1.3.1. NCDs Registries

Some NCDs require special data M&E systems intended to collection individual patients' information intended to evaluate different prevention and control interventions. The Ministry of Health put in place two registries: National Cancer Registry and Injury registry that are collecting reliable information used to inform different related plans and policies.

a. National Cancer Registry

The registry was established in 2018 with an office at RBC. The registry started with a population based registry covering Kigali City and hospital registry for cancer centers and hospitals providing cancer diagnosis and treatment services countrywide.

In 2018, 2875 (1167 males and 1708 females) cases received by diagnosis and treatment centers in Rwanda. The graph below summarizes the top cancers in 2018 in Rwanda.

Figure 13: Top 10 cancers in males in 2018

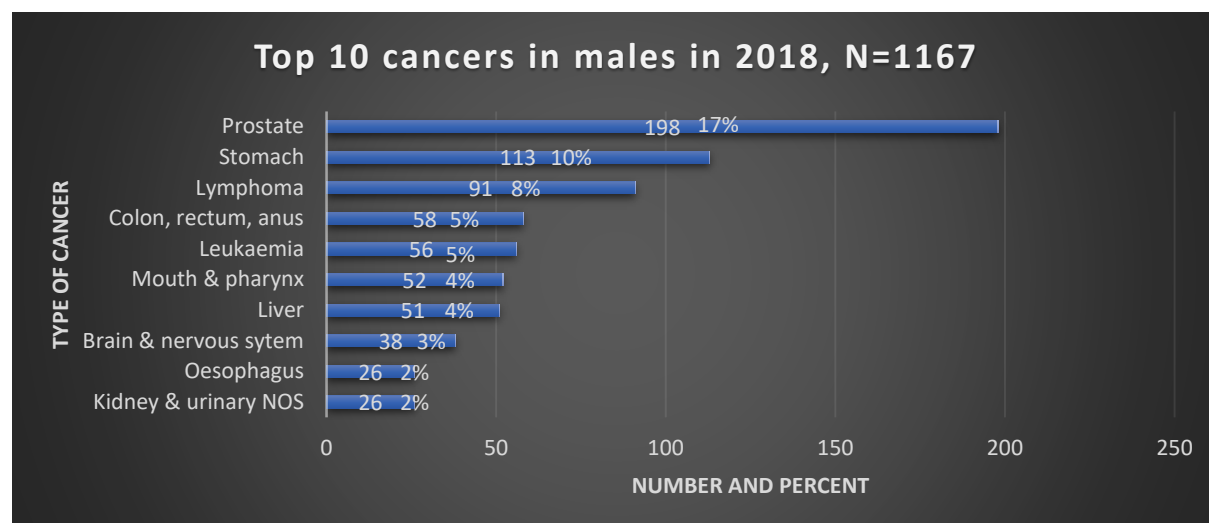
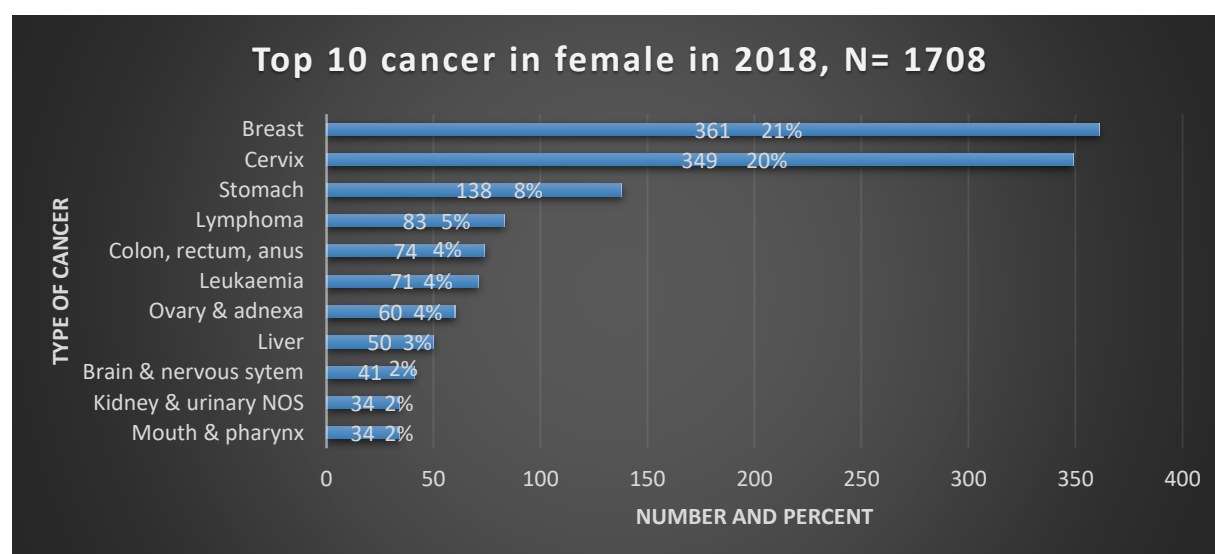


Figure 14: Top 10 cancers in females in 2018



b. National NCD Electronic Medical Records (EMR)

Rwanda Biomedical Centre developed a National EMR at hospital level for NCD including features for Diabetes, Cardiovascular, Chronic Kidney Diseases and Chronic Respiratory Diseases Registry. The NCD-EMR has the potential to advance the quality of health care by providing timely access to patients' health information records, tracking patients over time to ensure that they receive guideline-recommended care, and offering decision-support mechanisms to reduce medical errors.

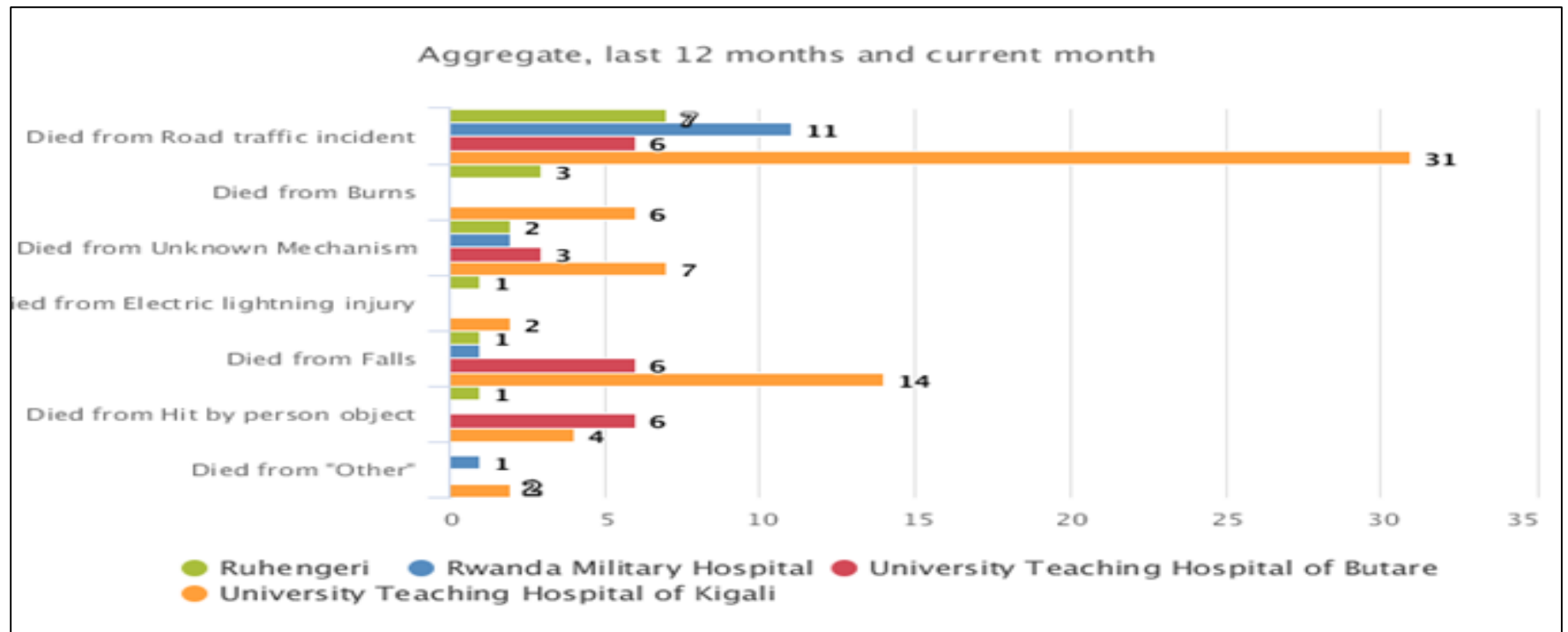
Since its implementation, this registry has been able to:

- Provide an accurate estimate of the number of people with NCDs.
- Assess the state of NCDs morbidity and mortality trends in Rwanda.
- Assess the quality of care and driving research.
- Tracking the progress of high risk patients
- Monitor diabetes risk factors prevalence at community level.

c. Injury registry

A DHIS 2 based digital platform is being piloted in 4 health facilities namely CHUB, CHUK, RMH and Ruhengeri. The tool will inform the Ministry of Health about the burden of injuries for further decisions. The graph below presents the snapshot of data from the registry since the establishment in July 2019:

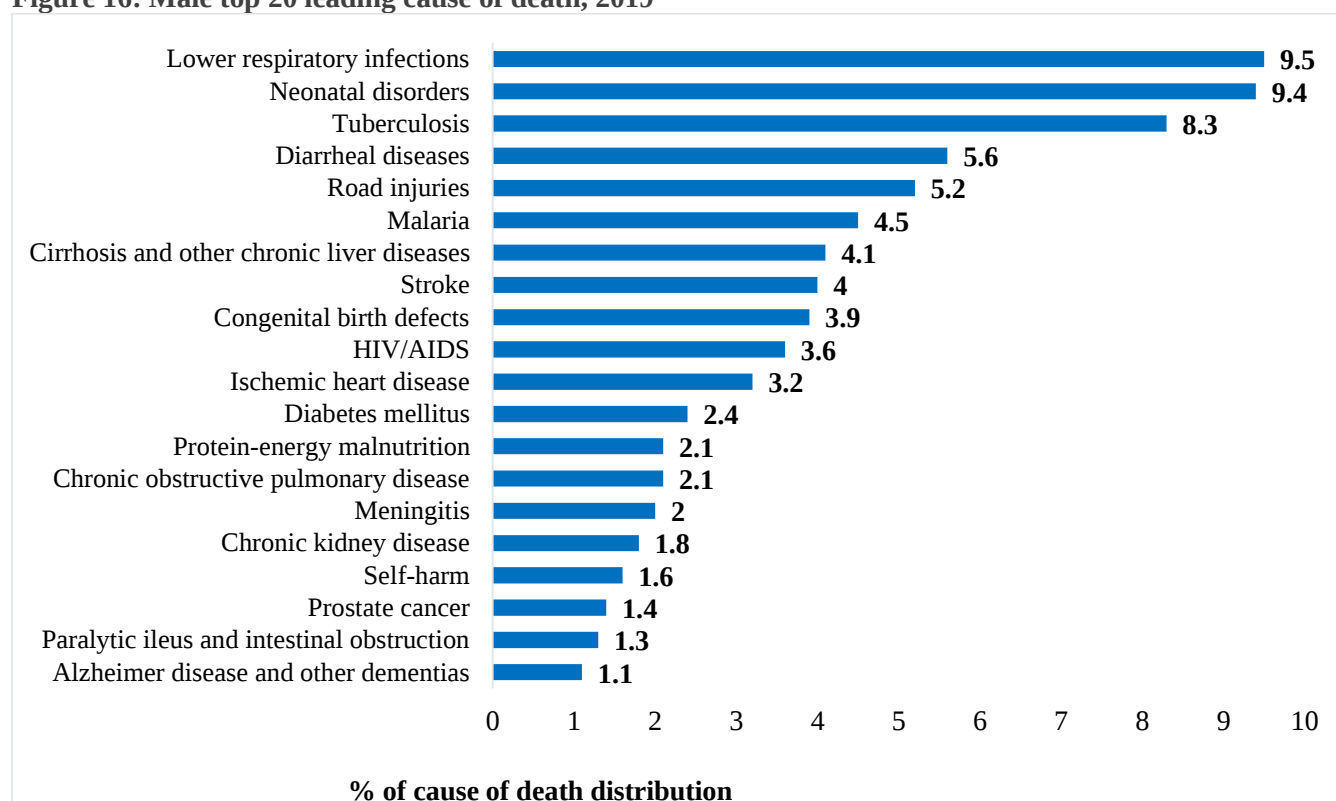
Figure 15: Mechanisms of Injuries among diseases patients



2.1.1.3.2. Medical certificate causes of death and ICD-10 coding

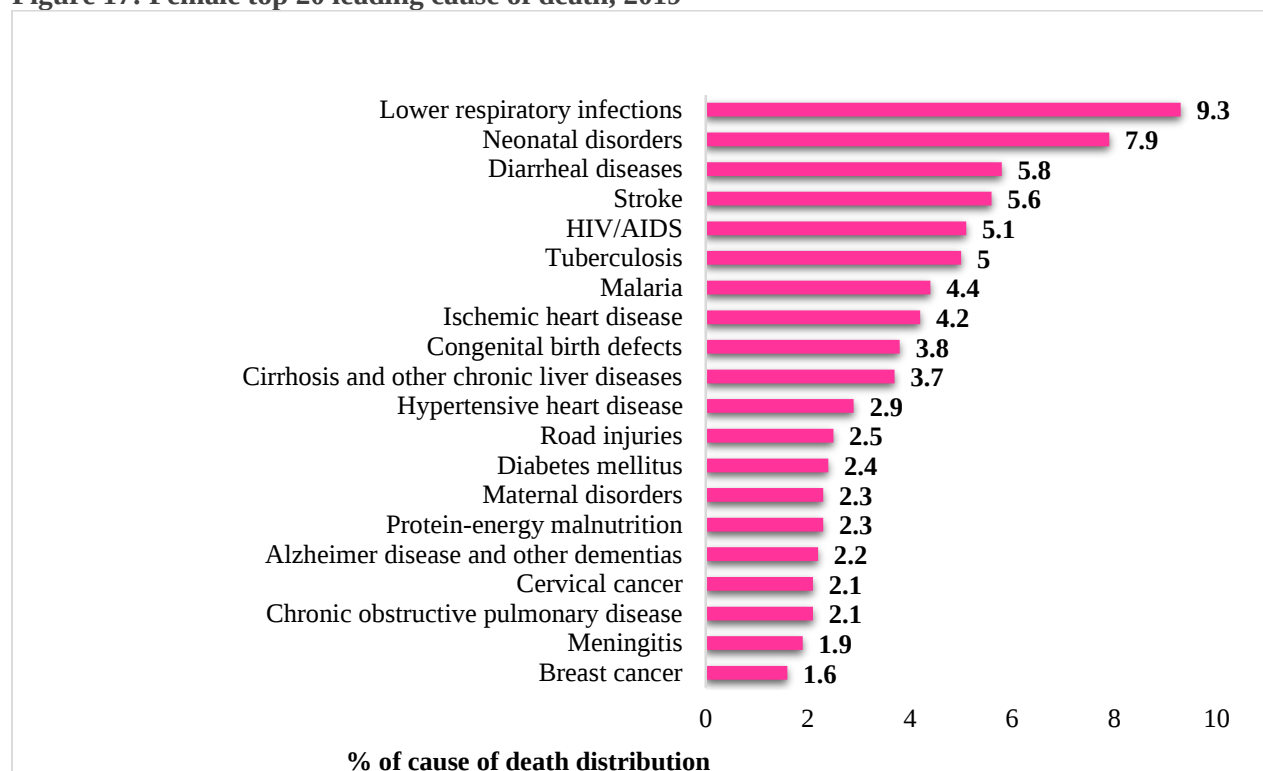
To improve the quality of causes of death statistics in Rwanda, the government initiated two major interventions namely: Verbal Autopsy to gain causes of death when people die out side health facility and the integration of Medical Certification of Causes of Death (MCCOD) and International Classification of Disease (ICD), into health care settings to determine the underlying causes of death that occur in health facilities. Currently, over 98% of health facilities are certifying and reporting deaths and causes of death using MCCOD and ICD-10 coding system. 6,421 deaths and 12,647 deaths were certified and reported using standardized WHO recommendable tools in DHIS2 mortality module for deaths occurred at Health care settings in 2018 and 2019 respectively.

Figure 16: Male top 20 leading cause of death, 2019



Source: HMIS 2019 (N=6843 in males and 5492 in females)

Figure 17: Female top 20 leading cause of death, 2019



Source: HMIS 2019 (N=6843 in males and 5492 in females)

2.1.2. Mental Health Services

2.1.2.1. Achievements in the Fiscal Year 2017-2018

In the FY 2017-2018, mental health services continued to be strengthened across the Rwanda Health System.

- By June 30, 2018, all public health centers were providing integrated mental healthcare services. Also, 99% of mental healthcare providers in Rwanda were trained on early detection and treatment of mental disorders as well as in people-centered related techniques. Among targeted Health Facilities, general nurses and clinical psychologists working in all prisons were also trained on mental healthcare and drug addiction management.
- In terms of capacity building at Hospitals level, 12 Psychiatrists completed their studies and were deployed at different referral, teaching and provincial hospitals. Continuous mentorship was given to mental healthcare providers. All District Hospitals, Provincial Hospitals, and Referral Hospitals are managing mental disorders, and 96% of Health Centers

in Rwanda are providing basic mental healthcare and referring emergency cases to mental health services in District Hospitals.

- On the October 10, 2017, Rwanda joined other countries all over the World to celebrate the World Mental Health Day under the theme: “Mental Health in the workplace”. The Ministry of Health in collaboration with the Ministry of Public Service and Labor and other Partners including WHO, organized a one-day national Symposium in Kigali. The Symposium gathered representatives of employers and employees from the Public and Private Sectors and mental health specialists. The symposium was an opportunity to discuss with participants about job stress, impact on the work and their health, and available mental health care services all over the country. It was also an occasion to strengthen collaboration between Ministry of Public service and Labor, Ministry of Health and Private Sector. Inter-sectoral strategies for the complete well-being of employees were discussed. Much focus was put on the value of promoting well-being in different working settings, such as agriculture, industry, finance, government, technology, and beyond. Mental health is often neglected while it is a key aspect of employees’ overall health. The World Health Organization points out that depression leads the list of causes of illness and disability worldwide. Those who experienced depression or other disorders might be unable to work or not fully productive. Many of these illnesses can be treated, but access to treatment is often difficult, and stigma may prevent people from seeking services even when they are available.
- Rwanda has resolved to build an integrated national mental health system in a context of a limited resources country. Mental Health Policy emphasizes on accessibility, affordability and equity of mental health services. Major strides are being made in the decentralization and integration of mental healthcare services into national health system and psychotropic medicines are integrated into the community-based health insurance scheme which increased the accessibility to mental healthcare.
- In terms of human resources and capacity building, the country introduced the department of mental health, clinical psychology and psychiatry into the universities to avail qualified mental health professionals.

2.1.2.2. Achievements in the Fiscal Year 2018-2019

a. Decentralization and integration of mental healthcare services

- To reinforce the integration of mental healthcare into the package of primary health care, clinical and mentorship supervision were conducted in District Hospitals, and 206 nurses from these hospitals and health centers were trained on mental healthcare and drug abuse management. Furthermore, five general medical practitioners and twelve nurses received internship training at Ndera Psychiatric Hospital.
- In collaboration with the Ministry of Local Governance, RBC/Mental Health Division has started a project for homeless and mentally ill patients, including psychosocial programs aimed at supporting rehabilitation and reintegration. These patients are supported to get community-based health insurance to facilitate access to care and social reintegration.
- The decentralization of mental healthcare services resulted in the increase of the number of patients seeking mental healthcare as per the table below:

Table 15: Trends of mental healthcare services by types of disease

Types of diseases	Jul 2015-Jun 2016		Jul 2016-Jun 2017		Jul 2017-Jun 2018		Jul 2018-Jun 2019	
	New cases	Old cases	New cases	Old cases	New cases	Old cases	New cases	Old cases
Epilepsy	13,464	110,604	11,947	111,273	11,019	104,493	14,183	123,552
Schizophrenia and other psychoses	2,331	31,934	2,158	32,361	2,840	34,689	4,672	48,187
Other Psychological problems	9,779	22,049	8,938	27,321	7,212	23,660	6,982	17,969
Neurological problems	6,874	14,797	6,552	15,974	5,219	14,854	4,669	17,249
Unspecified mental disorder	748	2,533	480	2,455	213	2,950	1,924	23,110
Depression	1,347	5,496	1,350	5,764	1,489	6,533	2,384	9,396
Other disorders of the nervous system	437	453	777	1,596	404	799	1,803	7,334
Bipolar disorders	15	1,377	29	2,142	101	2,797	216	4,308
Psychosomatic problems	1,540	3,273	1,106	2,673	1,000	2,521	720	2,155
Post-traumatic stress disorder	536	1,482	477	1,272	765	1,534	1,391	1,915
Anxiety disorders					496	620	620	927
Somatoform disorders	139	992	150	1,082	132	1,048	117	1,174
Mania	8	665	14	805	80	828	64	1,243
Mental and behavioral disorder due to substance abuse					245	401	283	852
Suicide attempted or successful	480	215	571	266	636	231	675	233
Mental and behavioral disorders due to use of cannabinoids	54	346	82	555	64	388	60	439
Behavioral and emotional disorders with onset usually occurring in childhood and adolescence	17	55	8	73	86	203	158	409
Other headache syndromes	352	940	355	1,222	35	355	98	327
Organic, including symptomatic, mental disorders	30	188	57	273	35	250	24	258
Migraine	167	298	215	457	33	160	40	88
Behavior disorders not due to alcohol and drugs abuse	231	662	221	678	370	1139		
Parkinson disease	14	451	8	525	4	150	16	90
Nerve, nerve root and plexus disorders	68	214	57	263	6	80	17	85
Mental retardation	33	246	26	267	12	94	8	61
Other mood disorders	9	201	10	191	5	48	5	52
Status epilepticus	52	565	49	730	4	86	2	11
Vascular syndromes of brain in cerebrovascular diseases	12	17	13	36	4	10	7	2
Total visits	38,933	200,623	35,868	210,657	32,635	201,081	41,138	261,426

b. Mental health interventions during the 25th Commemoration of the Genocide against Tutsi

- During the 25th commemoration of the Genocide against Tutsi, the Ministry of Health through the Mental Health Division in Rwanda Biomedical Centre organized and coordinated mental health interventions across the country. A national steering committee was established to oversee capacity building activities, dissemination of sensitization materials and provision of logistic facilitation. Training on management of common mental health problems was provided to 55,415 Community Health Workers (CHWs), 288 community-based counsellors of Groupe des Anciens Etudiants Rescapés du Génocide (GAERG), 68 Clinical psychologists from GAERG and Association des Veuves du Genocide (AVEGA), 120 AERG volunteer members and 75 Rwanda Red Cross (RRC) district coordinators and volunteers.
- During the official week of Kwibuka 25th from 7 to 13 April 2019, a total of 3,268 cases of mental health were reported across the country. This included 2,200 cases managed at commemoration sites, 780 cases that were treated at health centers, and 288 cases that were referred to district and provincial hospitals specialized management and treatment.

c. Fighting against drug abuse

- On the 17th July 2018, Rwanda joined the World to celebrate the international day to fight drug abuse. The events were held on in Rusizi District. All messages delivered on that day cautioned people about dangers related to using illicit drugs. They were advised that there is nothing good in drug abuse. On contrary, drugs have physical, psychological consequences and they hinder the youth socioeconomic development and welfare.
- The Government of Rwanda has set up strategies to fight drug trafficking and abuse. These strategies include the creation of rehabilitation centers that offer vocational skills to former drug abusers, the organization of campaigns to sensitize the general population on dangers of drugs abuse, collaboration and involvement of the civil society in the fight against drug abuse.
- Guidelines and Protocols for the management of alcohol and drug-use disorders from the community up to the referral levels were developed and disseminated.

d. Rwanda Mental Health Survey

- The aim was to measure the prevalence of mental disorders, associated co-morbidities and knowledge and utilization of mental health services nationwide within Rwanda.
- This cross-sectional study was conducted between July and August 2018, among the general population, including survivors of the 1994 Genocide against the Tutsi. Participants (14–65 years) completed the Mini-International Neuropsychiatric Interview (Version 7.0.2), sociodemographic and epilepsy-related questionnaires. General population participants were selected first by random sampling of 240 clusters, followed by systematic sampling of 30 households per cluster. Genocide survivors within each cluster were identified using the 2007–2008 Genocide Survivors Census.
- Findings: Of 19,110 general survey participants, most were female (n=11,233; 58.8%). Mental disorders were more prevalent among women (23.2%) than men (16.6%) ($p<0.05$). The most prevalent mental disorders were major depressive episode (12.0%), panic disorder (8.1%) and post-traumatic stress disorder (PTSD) (3.6%). Overall, 61.7% had awareness of mental health services while only 5.3% reported to have accessed support. Of the 1271 genocide survivors interviewed, 74.7% (n=949) were female; prevalence of any mental disorders was 53.3% for women and 48.8% for men. Most prevalent disorders were major depressive episode (35.0%), PTSD (27.9%) and panic disorder (26.8%). Among genocide survivors, 76.2% were aware of availability of mental health services, with 14.1% reported having used mental health services.
- Interpretation: Despite high prevalence of mental disorders in both the general population and genocide survivors, utilization of available mental health services was low. A comprehensive approach to mental health is needed for prevention of mental illness and to promote mental health care services.

2.1.3. Oral Health

- Oral health is fundamental to the general health. It enables people to breathe, eat, swallow, speak or even smile. Impairment of these functions can seriously interfere with the ability to interact with others, attend school, and work. Oral diseases are among the most common and preventable non-communicable diseases and share the same risk factors with the most important NCDs (cardiovascular diseases, chronic pulmonary diseases, cancer and diabetes).

- In 2019, a National Oral Health Strategic Plan (NOHSP 2019-2024) has been developed. Its overall are to scale-up oral health services, ensure its integration in the primary health care, avail oral healthcare service delivery closer to the population, reinforce the tertiary oral healthcare and to strengthen preventive measures so as to reduce the burden of oral diseases. The NOHSP 2019-2024 is full aligned with the Health Sector Policy and the 4th Health Sector Strategic Plan (2018-2024), and highlights effective community participation as key component that shall guide its implementation.
- The NOHSP 2019-2024 is expected to contribute to the overall goal of the Rwanda's Health Sector Policy: *“continuously putting in place an effective healthcare system capable of providing increasingly specialized services, that focus on healthcare accessibility, affordability, quality, efficient delivery of healthcare, and the use of technology as enablers to achieving Universal Health Coverage and ensuring the wellbeing of the population in Rwanda”*.

Table 16: Outpatients visits for oral health diseases

	2016	2017	2018	2019
OPD Oral Diseases Cases	570,578	655,143	782,915	862,027
Total OPD Cases	16,500,262	16,353,657	17,870,674	19,075,286
Teeth and gum diseases morbidity rate at health facility level	3.5	4	4.4	4.5

2.1.4. Eye Care

- Since the adoption of the Vision 2020, the Right to Sight in 2002, Rwanda have developed and implemented 3 plans of actions to eliminate avoidable blindness and visual impairment. Those plans allowed Rwanda to register substantial progress, including the successful introduction of primary eye care in all health centres. However, there is still a long way to go in terms of availing and providing preventive, curative and rehabilitative eye services at secondary and tertiary level.
- Rwanda has now set eye care forth as a core non-communicable disease priority and the Ministry has built an eye health system starting from a primary level all the way to the tertiary level. Eye conditions are one of the most significant causes of morbidity and are one of the top ten causes of consultations at primary and secondary levels of the healthcare system (HMIS 2018). A Rapid Assessment of Avoidable Blindness conducted in Rwanda in 2015 found that 1% of people aged 50 years and more are blind, often due to avoidable causes (84%). The prevalence of severe visual impairment

(SVI) was estimated at 0.7% for both sexes; and the prevalence of mild visual impairment was 2.6%.

- In a move to mitigate the impact of eye problems in Rwanda on individuals, families, communities and the country, a National Strategic Plan for Eye Health (NSPEH: 2018-2024) has been developed. This is the 4th Eye Care Strategic Plan to be implemented in Rwanda since 2000. Its overall objective is to put in place an effective and integrated eye care system capable of providing increasingly affordable, accessible, and quality eye care specialized services. It is fully aligned with Rwanda's Vision 2050 and the Rwanda Health Sector Strategic Plan 2024. It translates into actions the mission of Rwanda's Health Sector as specified in the Health Sector Policy. It is expected to build on existing partnerships and resources to avail the highest quality of service provision in the field of eye healthcare in Rwanda. The strategy focuses on the following pillars:
 - Institutional Capacity Development
 - Infrastructure: creation and renovation of eye health units
 - Availability of Products: medicines, consumables, commodities, low vision devices
 - Human Resources: Primary Eye Care (PEC) Nurses, Ophthalmology clinical officers and ophthalmologists.
 - Service Delivery
 - Disease Control: Emphasis on PEC; Cataract surgery, Refractive Errors, Low vision Services and rehabilitation
 - Public awareness and advocacy
 - M&E, research, and knowledge management
- In the last 15 years, the Ministry of health in collaboration with its development partners has registered significant milestones in eye care, which constitute the foundation for future achievements. These milestones will go a long way towards achieving the universal accessibility to equitable, affordable high quality eye care services. Below is the table summarizing the achievements, challenges and future plans for eye health:

Table 17: Summary achievements 2017-2019 in eye care program

Nº	Key achievements	Key challenges	Future plans	Implementing Partners
1	Governance: Establishment of a TWG for eye care led by the Ministry of Health	No particular challenge	Continue to strengthen the TWG	MOH and Eye care development partners
2	Provision of eye care at primary level with: - Implementation of the fully integrated Primary Eye care program countrywide. To date, all health centers (504) are providing primary eye care. All Rwandans have access to an eye check within 5-10km of their home - All eye care services are covered by the CBHI at the primary health care level - School eye screening guidelines and SOPs have been developed and disseminated for further use - Introducing and implementing PBF scheme for eye care indicators for eye screening and referral to improve the quality of eye care services	Limited skills in PEC for nurses graduates	- Introduce PEC in the curricula for nursing schools - Roll out the eye screening in all schools in Rwanda	MOH, VFAN, FHF, FLDV and RIIO
3	Provision of eye care at secondary and tertiary levels with: - Eye care services including cataract surgeries are covered by the CBHI except glasses for refractive errors	- Shortage of qualified personnel - Limited number of hospitals with the basic equipment to address the target	- Increase PBF funds to increase the demand and improve the quality of eye care services - To complete vision Center launch with remaining hospitals (14)	CBM, MOH FHF, FLDV, Onesight and RIIO

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> - Training of Ophthalmology clinical officers to examine and treat eye diseases that do not require surgical intervention - Conducting Outreach surgical program to increase cataracts surgical rate to 1,200/1M population - Introducing and implementing PBF scheme for eye care with cataract and refractive errors as the indicators - Introduction of in country Ophthalmology Residence program with 8 residents in training - Setting up of Vision Centers in 34 Hospitals with fully fledged optical shops - Establishment of an in Country well equipped Optical Glass Manufacturing Lab to ensure a lasting and sustainable supply chain for Optical Glasses and Accessories | <p>diseases namely:
Cataract- Glaucoma-
Refractive errors
including keratoconus-
Diabetic retinopathy-
and Childhood
blindness with
emphasis on
Retinopathy of
Prematurity and
Ocular albinism)</p> <ul style="list-style-type: none"> - Supply chain management for consumables and devices | <ul style="list-style-type: none"> - Establish a driver screening program (2020 – 2025) - To equip all referral and Provincial Hospital with the required basic equipment's by 2020 - Establishment of Teaching Eye hospital as a regional center of Excellence for training of ophthalmologists. - Establish a Centre of Excellence for rehabilitation for the blind and low vision services - Supply on regular basis all eye medicines, consumables and devices - Include eye glasses in the CBHI package |
|---|---|--|

2.1.5. Ear and Hearing Care Services

- For many years, Ear and Hearing Care services in Rwanda have been provided in the national referral hospitals, and were always considered as specialized services, with limited access by the general population. Based on existing realities, the Rwanda National Transformation Strategy 2024 and the Rwanda National Vision 2050, a National Ear and Hearing Care Plan (NEHCP) 2018-2024 has been developed to facilitate the streamlining of all efforts to prevent and treat ear and hearing impairments in Rwanda. Using a public health approach integrated into the country's health system and service delivery, the National Ear and Hearing Care Plan aligns with the Health Sector Policy and of the 4th Health Sector Strategic Plan (2018-2024). It will improve access to Ear and Hearing Care services across the country. It will also help to reduce the prevalence, incidence, and impact of hearing loss in the community, through public health approaches that are integrated with the country's health system and service delivery. Also it will facilitate the mobilization of additional efforts needed to address ear and hearing issues and to coordinate all stakeholders involved in this area of healthcare.
- One of strategies put forward by the NEHCP 2018-2024 to bring ear and hearing care services closer to the population in communities is to conduct national outreach programs for specialized ear and hearing care services. In the last quarter of 2019, an awareness raising and medical outreach activity on ear and hearing health was done in Kigali and Nyamirambo Sectors of Nyarugenge District. The outreach was organized by the Ministry of Health in collaboration with Hearing Health Rwanda(HHR), Rwanda Otolaryngology Head and Neck Surgery Society (ROHNSS), and Christian Blind Mission (CBM) in Rwanda.
- In total, for the 2 Sectors, 309 people were served during this activity. The activity registered the following achievements:
 - In Nyamirambo Sector, 130 people (69 females and 61 males) (53% and 47% respectively) were served in two days from 17/12/2019 to 18/12/2019 at Nyiranuma Health Center. The 130 people were screened as follows: allergy (26), wax (20), ear infection (23), hearing impairment (30), pain (2), itching (2), normal (7), hearing impairment + ear infection (3), hearing impairment + tinnitus (8), perforation (1), tinnitus (8). In total, 34 patients were referred: 24 people (15 females and 9 males) were referred

for hearing assessment while 3 (2 females and 1 male) were referred for surgery, 6 (3 females and 3 males) were identified as needing follow up while 1 female was referred to a Dermatology Department.

- In Kigali Sector, 179 people (116 females and 63 males) (64% and 36% respectively) were served in two days from 19/12/2019 to 20/12/2019 at Karama Health Post. The 179 people were screened as follows: wax (22), ear infection (31), hearing impairment (29), pain (1), itching (7), allergy+ ear infection (2), normal (21), hearing impairment + ear infection (3), hearing impairment + tinnitus (2), tinnitus (2), allergy (51), infection + wax (1), Otomycosis (7), Submandular mass (1). Like in Nyamirambo Sector, 34 patients were also referred: 14 females and 10 males were referred for hearing assessment while 1 female was referred to surgery, and 9 (2 females and 7 male) were identified as needing follow up.

2.2. Communicable Diseases

2.2.1. Malaria control

- Malaria remains a major public health problem in Rwanda and is one of the leading causes of morbidity and mortality. Rwanda has made significant strides in controlling the disease through implementation of various control interventions including: mass and routine distribution of long-lasting insecticide nets (LLINs), indoor residual spraying (IRS) in high endemic districts, adoption of mandatory laboratory confirmation prior to the treatment, use of ACTs in the treatment of uncomplicated malaria cases, national scale-up of community based management and improvement in routine surveillance, monitoring and evaluation platforms. Despite these successes, Rwanda has seen an increase in malaria morbidity since the end of 2012. This increase in cases is attributable to several factors, including pyrethroid insecticide resistance, non-universal coverage of effective preventive interventions, increase in vector density, climatic abnormalities (temperature and rainfall), environmental modifications and changes in mosquitoes' behaviour.
- Following the rise in malaria cases, a Malaria Contingency Plan (MCP) has been developed and updated in 2017 with the aim of enhancing the implementation of evidence-based interventions to reduce the burden of malaria in the population. These malaria control interventions consist of effective implementation of high impact interventions, including countrywide mass distribution of LLINs to reach universal coverage (1 net for 1.8 people),

IRS using an efficacious insecticide in targeted high malaria endemic districts, early diagnosis and treatment at the health facility and community level, environmental management, surveillance/Monitoring and Evaluation and social behaviour change communication (SBCC).

- The results and achievements presented in this annual report are in line with the above-mentioned high impact interventions.

2.2.1.1. Countrywide mass distribution of LLINs to reach universal coverage

- Long Lasting Impregnated (Bed) Nets (LLIN) mass distribution in households is a strategy used by Rwanda to reach universal coverage of LLINs, and routine distribution is organized through antenatal care (ANC) and expanded program on immunization (EPI) services to target pregnant women and children. For universal coverage, mass household distribution campaigns are organized every 2 to 3 years.

2.2.1.1.1. Achievements in the Fiscal Year 2017-2018

For this reporting period:

- around 5,127,452 LLINs funded by the GF were procured. Rwanda committed to maintaining LLIN universal coverage using a WHO/RBM strategy to distribute nets free of charge to pregnant women and children under one year of age through the ANC and EPI services, respectively, at the health centre level. On a monthly basis, distribution of LLINs was reported through the national health management information system (HMIS). In the fiscal year 2017-2018, a total of 80,709 LLINs were distributed to pregnant women through ANC services, and 257,677 LLINs were distributed to children under one year of age through EPI services in all 30 districts.
- On February 26, 2018 the Ministry of Health published instruction N° 20/0002 regulating the distribution of LLINs for free to the population in Ubudehe 1 and a2 and the selling of LLINs to the rest of Ubudehe 3&4, public and private institutions and others in need. As of 30 June 2018, a total of 13,130 LLINs were sold to District Pharmacies and 400 LLINs to private institutions.

2.2.1.1.2. Achievements in the Fiscal Year 2018-2019

- A total of 178,291 LLINs were distributed to pregnant women through ANC services with a total coverage of 48% of all new registered pregnant women. Through the Expanded Program on Immunization (EPI), 273,268 LLINs were distributed to children under one

year of age, with 79% total coverage of children of 9 months old attending measles rubella 1 (MR1) (344,282 children) services countrywide.

- Moreover, a total 7,527,453 LLINs funded by The Global Fund (GF) and USAID/U.S. President's Malaria Initiative (PMI) were procure for the LLINs households distribution and routine (ANC and EPI) distributions.

2.2.1.2. Indoor residual spraying (IRS)

- Rwanda adopted the WHO's global plan for insecticide resistance management in malaria (GPIRM) in its 2013 Integrated Resistance Management (IRM) Plan. With the national documented resistance to Pyrethroid Insecticide since the last few years, and based on the current malaria epidemiology, the Government of Rwanda has identified 13 high malaria burden districts to be sprayed in line with WHO guidelines as a way of insecticide resistance mitigation measure.
 - For the FY 2017-2018, five of the 13 high endemic districts were sprayed: Bugesera, Gatsibo, Gisagara, Kirehe, and Nyagatare. Two Districts (Kirehe and Nyagatare) and five sectors of Gisagara District (Gishubi, Kansi, Kigembe, Musha and Nyanza sectors) were sprayed with PMI support while the other three IRS districts (Bugesera, Gatsibo and eight sectors of Gisagara) were sprayed with Government and GF support.
 - Overall, a total of a total of 480,439 of 483,595 structures sprayed (average structure coverage of 99.3%) and 1,932,272 of 1,940,692 population protected including pregnant women and under five years.
 - In the Fiscal Year 2018-201, Indoor Residual Spraying was implemented in 10 high malaria burden districts of Nyagatare, Kirehe, Huye, Nyanza, Gisagara Bugesera, Gatsibo, Ngoma, Kayonza and Rwamagana, covering a total of 938,407 structures (99,7% coverage) with a total population of 3,733,375 protected (99,5% coverage).

2.2.1.3. Malaria case management

Early diagnosis and treatment is a primary component in malaria control. Regarding diagnosis and treatment, the following achievements were registered through program strategies to improve access to early diagnosis and appropriate case management to reduce malaria morbidity and mortality.

2.2.1.3.1. Achievements in the Fiscal Year 2017-2018

- In the FY 2017-2018, the diagnostic testing to ensure that all patients with malaria are properly diagnosed and can receive timely and appropriate treatment were strengthened. All suspected malaria cases were parasitologically confirmed by either RDT or BS, then malaria was categorized either uncomplicated or severe malaria for the purpose of prescribing appropriate treatment. With the roll out of Home-based Management of Malaria (HBM) to all ages since October 2016, Community Health Workers were well equipped to provide timely treatment in the community for all cases of uncomplicated malaria, preventing severe malaria and death, and limiting malaria transmission. The Home Based Management in Adults (HBMA) is currently well established and functional throughout the country. On average, nearly 94.13% of children above five and adults are seeking treatment within 24 hours of signs and symptoms onset at community level.
- The Integrated Malaria Control Guidelines were developed by the malaria TWG and were approved and started being implemented. Key changes include the real time notification of severe malaria and stock status by community health workers through RapidSMS as well as the management of severe cases in under 6 years at community level using Artesunate Suppository.
- HBM for children less than 5 years old is implemented in all 30 districts of Rwanda. All children treated for malaria by CHWs are treated after a positive malaria test (malaria RDT). Over 95.72 % of children treated by CHWs for malaria are treated within 24 hours of onset of malaria signs (fever). Management of malaria at the community level showed the seasonality pattern of malaria. There is a steady increase of cases from November 2017 with a high peak in January 2018 and there is a slight peak starting in June. This trend correlates with the annual rainfall pattern but also with active case finding that was initiated toward the end of 2016.

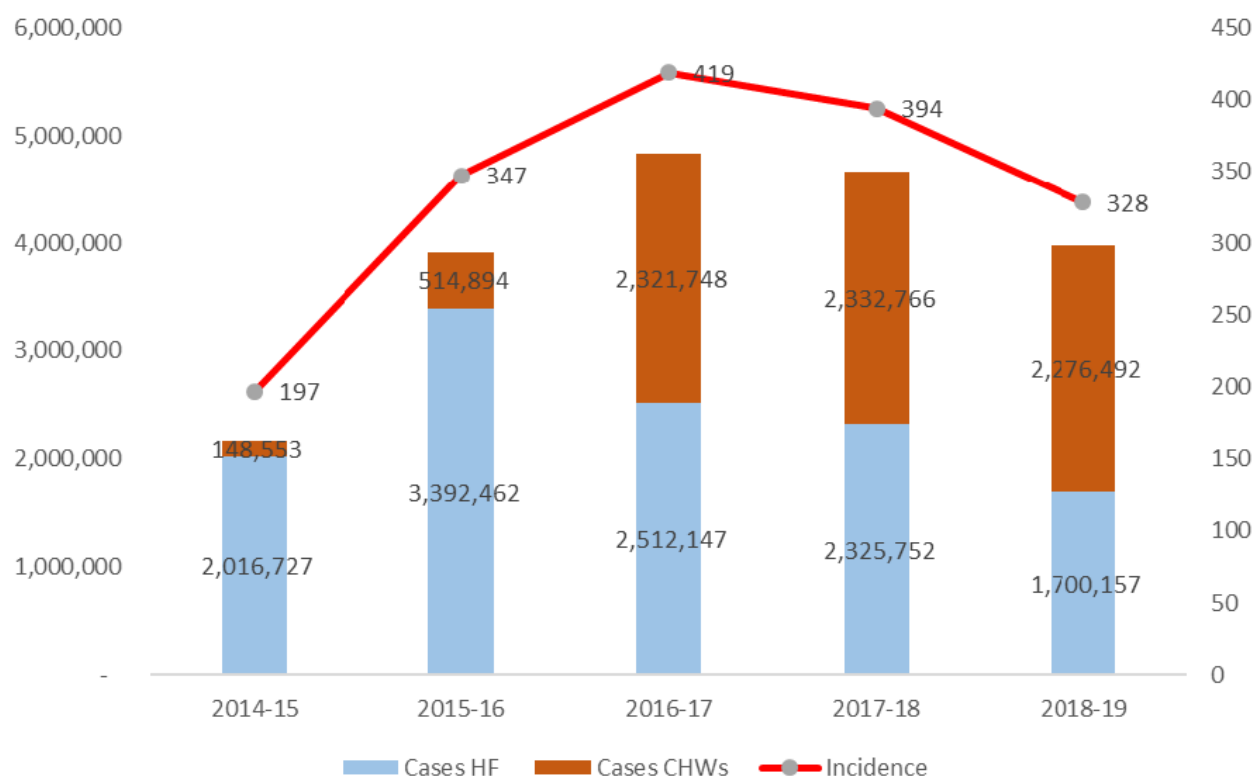
- The NRL has established the Laboratory Malaria Diagnosis External Quality Assurance (EQA) program to ensure the quality of malaria diagnosis in the national laboratory network. In addition to routine laboratory quality assurance processes, EQA includes blinded slide retesting, proficiency testing, and on-site supervision. Quarterly evaluation of the quality of thick and thin smear practices, Giemsa staining, and microscopy results are enforced in health facilities in Rwanda. Health centre practices are supervised by the district hospital, and district hospitals are supervised by the NRL.
- For optimal malaria diagnosis, a QA/QC program for RDTs is in place to ensure that commodities have retained the principle ingredients, irrespective of storage conditions and temperature during shipment. In August-September 2016, a total of 1,050 RDTs from 7 lots (each lot containing 150 RDTs) were collected in Kayonza, Kirehe, Musanze, Ngoma, Kamonyi, Gisagara, Muhanga, Gatsibo, and Rwamagana Districts. Samples were sent to a WHO prequalified laboratory in Philippines for analysis. The results availed on the 07th May 2018 showed that all 7 lots of RDTs passed quality control testing indicating that the RDT sample assessed detected antigen at a threshold sufficient for use in the field.
- Among the 42 district hospitals in which EQA/QC of blood smears was conducted during the FY2017-2018, an improvement in EQA/QC was noted compared to the previous fiscal year with a decrease in overall discordance from 4.12% to 1.36%. The malaria program will continue to work closely with NRL to correct reported discrepancies in district hospitals through formative and refresher training.
- Good procurement and supply chain management (PSM) is also very crucial in ensuring that malaria commodities are available at all levels of the supply chain and the stock level is always between the minimum and maximum levels. In this fiscal year 2017-2018 the Division has managed to keep the stock available on the desired stock level in general thanks to the new strategy of regular supply plan reviews, use of appropriate quantification tools and willing of partners to support the entire process.
- Several quantification reviews took place over the reporting period to adjust the real need in malaria commodities. In this fiscal year 2017-2018, all needs identified during the quantification exercise and supply plan reviews were covered by the Government of Rwanda, Global Fund and partner of the RBC, the GHSC-PSM Project and distributed to all levels (District Pharmacies, Health facilities and Community) for use.

- Accurate malaria diagnostic methods have great impact on the reduction of the number of malaria-infected individuals and helps to accurately determine the prevalence of each Plasmodium species. A total of 75 lab technicians from health facilities (from Nyarugenge, Nyanza, Rwamagana, Rusizi, Ruhango and Muhanga Districts) and 33 lab technicians from district hospitals (Masaka 8, Gahini and Rwinkwavu¹⁵, and Remera Rukoma: 10) were trained on performing malaria microscopy diagnosis. The overall performance during the pretest was 53% compared with 86% for the post test. A post-training follow-up was done to ensure that trained lab technicians are adequately implementing skills learned during the training.

2.2.1.3.2. Achievements in the Fiscal Year 2018-2019

- In the whole FY 2018-2019, the number of malaria cases declined to 3,976,649, down from 4,658,518 cases in FY17-18. This shows a decrease of 681,869 malaria cases.
- Home-based management (HBM) of malaria cases was expanded to reach 57% of children and adults who are seeking care in the community. This resulted in a decrease in severe malaria cases from 10,748 cases in FY 2017-2018 to 7,035 cases in FY2018-2019 as well as a decrease in mortality due to malaria from 392 deaths in FY17-18 to 300 deaths in FY18-19.
- To support the diagnosis of severe malaria cases in the community, a severe malaria management algorithm was introduced to community health workers (CHWs). Using this algorithm, CHWs are able to recognize patients with severe malaria, to provide pre-transfer treatment, and to transfer the patient to the health centre level for further management.

Figure 18: Trends of malaria cases 2014-2018



2.2.1.4. Population knowledge attitudes and practices towards malaria control

- In the last FY 2017-2018, several communication strategies such as advocacy, mass media campaigns (radio and TV programs), community outreach campaigns and community work were conducted at all levels according to the health system structure. The implementation of SBCC activities on malaria prevention was guided by the Malaria Contingency Plan and Malaria Strategic Plan 2016-2020.
- Malaria messages have been developed and disseminated through various communication channels including radio spots, TV programs, radio talk shows, Ururana Radio Drama, World Malaria Day celebration, Health Week activities, integrated community outreaches, mentions messages, community works (Umuganda), and door to door community mobilization during IRS campaigns. Disseminated messages focused on malaria control and prevention in Rwanda and created awareness on behaviour change and social norms including sleeping under LLINs, environmental hygiene to eliminate mosquito breeding sites and early and correct diagnosis and treatment of malaria at the village level through community health workers and at health facilities (Health post, health centres, and District hospitals).

2.2.2. Neglected Tropical Diseases & Other Parasitic Diseases

- In collaboration with WHO and other Stakeholders, the National NTD Master Plan 2017-2024 and National NTD&OPDs Guidelines were developed. The two documents are aligned with the Health Sector Strategic Plan 2018-2024(HSSP IV).
- In collaboration with Wellcome Trust Brighton & Sussex Centre for Global Health Research, through Brighton & Sussex Medical School, Falmer, Brighton, UK, the mapping of podoconiosis in Rwanda was conducted with the objectives to: i) determine the prevalence and distribution of podoconiosis in Rwanda; ii) estimate the population at risk; and iii) establish which areas qualify for control program. The following are the main findings: 914 out of 1,143 individuals with swelling of lower limbs were considered Podoconiosis cases, yielding a prevalence of 63 per 100,000 (95% CI; 62-71) people. Nationally, 6,429 people (95%CI, 3,938- 10,088) are estimated to be living with Podoconiosis. The highest burden of Podoconiosis is predicted in the Western province (2,096; 95%CI: 1,140-3,591). Women were found to be more affected (89 per 100,000; 95% CI: 82-95) than men (43 per 100,000; 95%CI: 38-48).
- Integrated cascade trainings for all CHWs on most common NTDs (STH, SCH, Podoconiosis, Scabies, Tungiasis) were implemented from June to August 2018. Trainees included staff from 30 administrative District (Director of health and Director of education), 43 Hospitals (Director General, in-charge of M&E, In-charge of Community health, In-charge of Vaccination and Clinical Director), Health Centres (Head of Health centre, In-charge of environmental health/ community health and data manager).
- Key success stories and innovations in malaria control and prevention include:
 - Introduction of dashboards in HMIS and SISCOM for detection of malaria data discrepancies;
 - Initiation of severe malaria and malaria commodities stock status notifications through RapidSMS;
 - Inclusion of malaria indicators in the supervision tool for Quality Management Improvement Approach (QMIA) supervision;
 - High coverage of indoor residual spraying (IRS) in 10 of 15 high endemic districts;
 - More than 50% decrease in severe malaria cases from 2016 to 2018/2019.

- More than 50% decrease in mortality due to malaria from 663 deaths in 2015/2016 to 300 deaths in 2018/2019 following the roll-out of home-based management of malaria (HBM) in both children and adults
- A drop in malaria incidence from 419‰ in 2016/2017 to 328 ‰ in 2018/2019

2.2.3. HIV and Other Blood Borne Infections Division

2.2.3.1. Background

- Rwanda has made a considerable progress in the Prevention and Management of HIV by rapid expansion of testing, care and treatment services and increased coverage of service provision. Recently, a national viral hepatitis control program was launched with the objective to make hepatitis C treatment available across the country.
- Since the first case of HIV in Rwanda, in the early 1980s, the Government demonstrated efforts and commitment in fighting HIV-AIDS epidemic. Concrete interventions and services to control HIV-AIDS were implemented after the genocide against the Tutsi in 1994.
- From 1999, the Ministry of Health started expanding HIV testing facilities and laboratory capacity in preparation for the expansion of access to Antiretroviral Therapy (ART). In the same year, PMTCT program was piloted in KICUKIRO HC and later expanded in 2001.
- In early 2000, the universal treatment program began with a small government-created-fund to offer free ART at the Kigali Teaching Hospital. With support of Global Fund and PEPFAR, in 2004, the national ART program was established and progressively scaled up, for both adults and paediatric HIV-infected people.
- Later on, the PMTCT program, in addition to as other HIV prevention programs, was implemented, with hopes of reaching eliminating mother-to-child transmission (eMTCT). In the past years, Rwanda have been monitoring the HIV epidemic through various surveys and studies: The Rwanda Demographic and Health Surveys, Behavioural and Biological Surveillance Surveys among Youth and other Key populations, HIV and Syphilis Sero-surveillance surveys among pregnant women at ANC/PMTCT sentinel sites, Rwanda AIDS Indicator and HIV incidence Survey, etc.

- In total, Rwanda's response to HIV-AIDS epidemic consists of five key areas:
 - Policy responses to HIV-AIDS epidemic
 - HIV Prevention
 - HIV Counselling and Testing Services
 - Prevention of Mother to Child HIV transmission
 - Introduction of point-of-care early infant diagnosis
 - Mentorship and HIV cases documentation
 - HIV Care and Treatment
 - STIs and Viral Hepatitis.

2.2.3.2. Policy responses to HIV-AIDS epidemic

- During the fiscal year 2017-2018, new Guidelines on HIV Prevention and treatment were developed and disseminated.
- In line with the National response to HIV-AIDS, the Government of Rwanda developed national policy documents, in which the response to the HIV epidemic is seen as a major public health concern involving all levels of government and ministries, and as a long-term development objective in Rwanda, intrinsically linked to development goals around poverty reduction and economic growth.
- In 2017-2018, as the Government of Rwanda developed its third HIV and AIDS NSP, it took the opportunity to redouble its efforts to understand the Rwandan epidemic and sharpen the national response. Working through national agencies and various development partners, it set out to better define the problem and understand the dynamics of the changing HIV and Viral Hepatitis epidemic in the country.

2.2.3.3. HIV Prevention

A combination of HIV prevention programs including HIV testing services, Prevention of Mother to child transmission of HIV (PMTCT), voluntary medical male circumcision, condoms and pre- and post-exposure prophylaxis have been delivered to the general population and key populations.

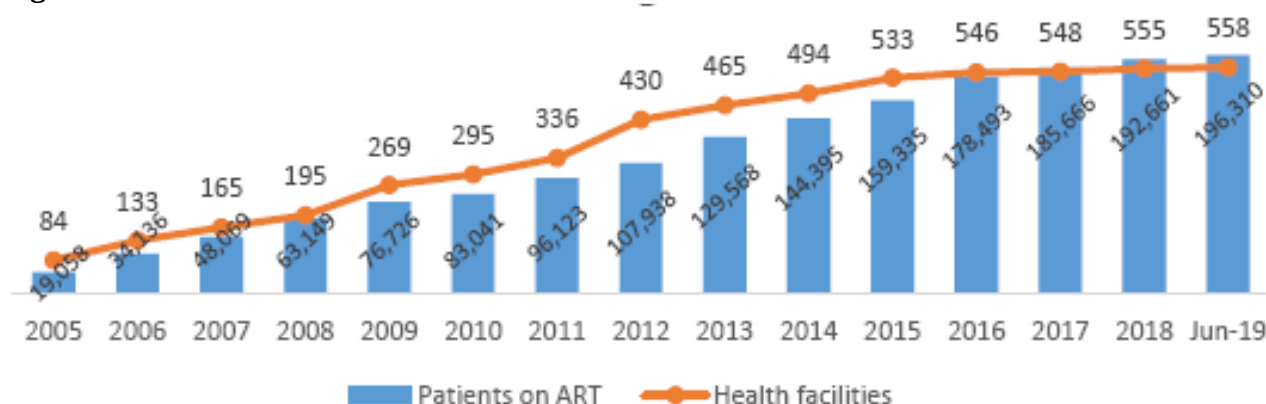
In the Fiscal Year 2018-2019:

- HIV testing and counselling was offered in 583 health facilities and a total of 2,811,842 tests were performed from Jul 2018 - June 2019. In addition to the health facility based HIV testing, HIV self-testing was introduced to increase access to HIV testing services. From Jul 2018 to June 2019, around 14,000 HIV self-test kits were distributed.
- From July 2018 to June 2019, 345,525 people were circumcised in health facilities.
- In this reporting period, 31,474,528 condoms were distributed to the general population through different distribution channels; social marketing, facility and community based free distribution and condoms kiosks distribution.
- As part of Prevention of Mother to child transmission of HIV, 2,498 HIV infected pregnant women were initiated on ARV treatment.

2.2.3.4. HIV care and treatment

- In order to ensure the continuum of quality services in HIV management, national guidelines on HIV care and treatment were updated. A new and more effective molecule of Dolutegravir ART regimen was introduced and is fully implemented in all health facilities providing ART services. The Phase out Nevirapine 200mg and AZT in the first line is under way and in good progress. Differentiated Service Delivery Model (DSDM) categorization was strengthened and is fully implemented all health facilities providing HIV services.
- A gap analysis for adolescent HIV care was conducted and all concerned stakeholders were fully engaged to improve the quality of care for adolescents living with HIV (ALHIV). HIV Treatment outcome for patients improved significantly with Viral suppression improved (91%) and mortality reduced by 82%.

Figure 19 Patients on ART vs Health Facilities ART Services Provision 2005-2019



2.2.3.5. HIV prevention innovations: index testing and partner notifications

- Earlier diagnosis and linkage to treatment is one way to break the chain of HIV transmission. The Index testing and partner notifications has been included in the package of HIV prevention services available at the health facility level. This approach was initiated and scaled up in 34 district hospitals as an innovative strategy to actively identify contacts of HIV infected people. In addition, HIV recency testing was initiated using a rapid assay that identifies newly diagnosed HIV infected persons as recent or long-term infection acquired within the past 12 months or more than 12 months ago, respectively. The main objective of this strategy is to monitor new HIV infections and create appropriate prevention interventions. Further, HIV recency testing contributes to active HIV case findings. Program data show that the majority (around 92%) of newly HIV diagnosed people who have been tested with recency testing have long-term HIV infection.

2.2.3.6. Hepatitis Control

- In December 2018, Rwanda launched a 5-Year Plan for the elimination of the Hepatitis C Virus (HCV). The plan aims at screening 4,000,000 people and treating 110,000 people in 5 years (2019-2024). Vaccination is a significant contributor to the Hepatitis B Virus (HBV) infection control. Since 2002 until currently (2019), HBV vaccination has been done to over 6,000,000 people including adults and children. This means that all people aged 0 to 17 years are vaccinated against HBV.
- In 2018-2019 only, over 50,000 adult people including genocide survivors, people with disabilities, blood donors, staff from different institutions as well as some other people from the general population were vaccinated against HBV.

- From July 2018-June 2019, awareness campaigns on viral hepatitis were done nationally and different categories of the population were educated and screened for HBV and HCV. For services continuum, people screened positive were linked to confirmatory testing and treatment services. Over 400,000 people were screened during four campaign sessions and blood transfusion services. HBV prevalence generally ranged between 2.3% and 3% and HCV prevalence generally ranged between 2.8% and 6.7%.
- During the 2018-2019 fiscal year, hepatitis B and C drugs were donated to Rwanda from the Indian Government and contributed to the treatment of patients. The price for HCV treatment was negotiated and tremendously reduced from 780 USD to 60 USD per 12 weeks' cure. As a result of the partnership, overall, close to 2,000 patients were on HBV treatment and close to 300 patients were initiated on HCV treatment.

2.2.4. Tuberculosis and Other Respiratory Diseases

Existing strategies to prevent and control Tuberculosis(TB) and other respiratory communicable diseases continued to strengthened.

2.2.4.1. TB screening and diagnosis

- In the fiscal year 2018-2019, the capacity of molecular testing using GeneXpert machines has been extended to 47 hospital laboratories and 19 health centers with high workload and notification of TB. The introduction of these tools aimed at reducing the number of undetected TB cases and promote early diagnosis.
- As an outcome, TB notification targets improved considerably in the Fiscal Year 2018-2019:
 - Community health workers greatly contributed to bringing 56.9% of all presumptive TB (106,812/187,871) for TB screening. They had brought 47.3% in the previous fiscal year.
 - A total of 5,949 TB cases were notified. TB cases notified in FY 2017-2018 were 5,860. Around 99.2% of TB cases were initiated on treatment.
 - Community health workers contributed to 25.2% (1,502/5,949) of TB cases of all forms. Their contribution was 19.3% in the previous fiscal year. However, there is still a need to intensify active case finding especially in Kigali hotspots and other districts with high TB notification rate.

- The proportion of TB cases among high risk groups was 53.4% (3174/5,949) as compared to 47.1% (2743/5,826) for the FY 2017-2018. The annual target was achieved at 131%.
- The proportion of TB cases under 15 years increased from 6.7% (last fiscal year) to 7.6% in the fiscal year 2018-2019. The annual national target of 7% was reached.
- The performance of Quality Control increased compared to the one of the previous FY where it was 91%. The number of major errors of decreased from 16% in 2017-2018 to 9% in 2018-2019.

2.2.4.2. TB management and treatment outcomes

- In the FY 2018-2019:
 - The treatment success rate for bacteriological confirmed TB cases was 86.5% and the NSP target was achieved at 96.1%. The outcome of clinically diagnosed cases was 82.4 % (and NSP target 80%). MDR-TB treatment success rate was 86.1% and the target was reached at 99.0%.
 - The TB/HIV indicator on ART initiation surpassed the annual target. The proportion of those on antiretroviral therapy (ART) by the end of their TB treatment reached 94.3%, exceeding the target of 90%.
 - The MDR TB regimen was designed according to the new WHO consolidated guidelines on drug-resistant tuberculosis.
 - To better track the outcomes of TB management and treatment outcomes, the case based system has been reviewed and a new system was developed based on WHO TB case based system module was introduced. This system will help to monitor the management of patient in real time. It will also facilitate the transfer TB cases for treatment outcome improvement.

2.2.4.3. TB prevention

- To increase the awareness on TB prevention measures, the 2019 World TB Day was celebrated in Kamonyi District. At the occasion, CHWs with a high performance in supporting TB in Kamonyi District were awarded with bicycles.
- The TB surveillance through routine data reporting platform/HMIS, shows that 82.7% of all health facilities were implementing the six basics of TB Infection control measures.

- Systematic TB screening among health care workers as well screening for community health workers were performed in almost all health facilities (93.6%), during this fiscal year, and respectively the screening reached 78.9% for HCWs and 84.5% for CHWs.
- The Initiation rate of Isoniazid Preventive Therapy (IPT) for children under 5 years improved (97.7%) and the extended NSP target of 87% was reached.

2.2.4.4. Leprosy control

- Prevention and control of Leprosy are focusing on early detection of leprosy in the general population, especially in endemic areas are paramount objective to avert the spreading of disease. To reinforce the screening of leprosy, active case finding has been conducted in endemic area and 33 cases were diagnosed among them 91% were new leprosy cases. The proportion of leprosy cases with disability grade 2 was fallen from 30% the previous FY to 3.3% compare to the FY 2017-2018.
- The success rate for MB case registered July 2015 to June 2016 was evaluated to 87.5% of new cases, 100% for relapse case, while the completion rate for PB forms (New, relapse, return after default) notified July 2016 to June 2017 was 100%.
- In the FY 2018-2019, thirty-five leprosy cases were diagnosed and initiated on treatment. The treatment completion rates for MB registered from July 2016 to June 2017 and PB forms registered from July 2017 to June 2018 for new cases were respectively 94.4% and 95.8%. To improve access to vulnerable leprosy cases, 323 family member leprosy cases received community based health insurance and 11 houses were renovated.

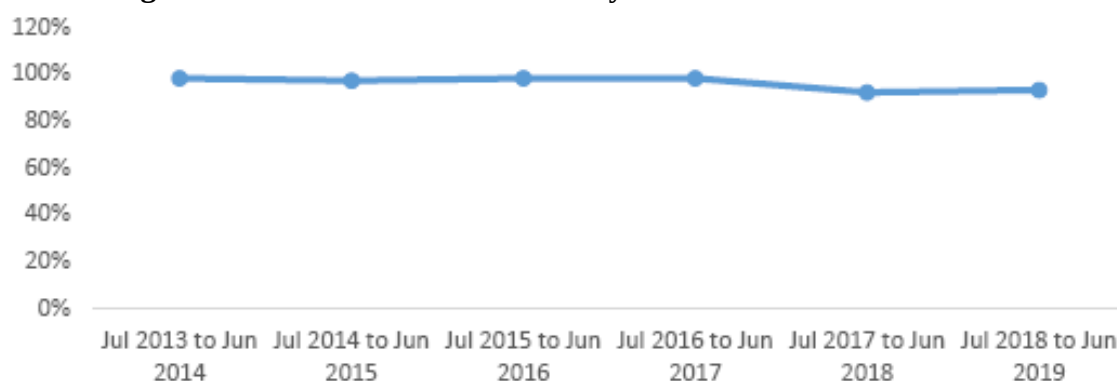
2.3. Maternal Health and Child Health Services

Access to rapid and quality maternal, child and community health services are essential in the prevention and reduction of maternal and child deaths. Programs for maternal and child health continued to strengthen health facility delivery for pregnant women, early initiation of antenatal care, promotion family planning uptake, coverage of immunization service, the fight against malnutrition among children under 5 years, and the scale-up of adolescent sexual and reproductive health services.

2.3.1. Delivery in health facilities among pregnant women

For the last 5 years, almost all pregnant women in Rwanda give birth in a health facility. This has been possible to the decentralization of primary healthcare across the country. The graph below shows trends of health delivery over the last five years in Rwanda.

Figure 20: Trends of assisted delivery in Health Facilities 2013-2019



To improve maternal and child healthcare services in health facilities, mentorship sessions were organized on B-EmONC, ANC and Post-natal care (PNC) in Health Centres in the following district hospitals: Kirehe, Butaro, Rwinkwavu, Gakoma, Kibilizi, Ruhango, Nemba, Byumba, Rutongo, Kibungo, Nyagatare, Remera Rukoma. In addition, mentorship sessions were conducted for healthcare providers from Bugesera, Burera, Nyamasheke, Nyarugenge, and Rubavu Districts on GANC and GPNC. These sessions were conducted by master trainers from Preterm Birth Initiative (PTBi).

2.3.2. Antenatal Care

There is high utilization of antenatal care (ANC) in Rwanda, with most pregnant women having at least one ANC visit over the period of their pregnancies. However, only 40% of women attended an ANC visit during the first trimester. Of all pregnant women, only 32.2% attended all four standard ANC visits. There is a great need to develop strategies to increase the percentage of women who initiate ANC in a timely manner and the number of women who attend all four standard ANC visits.

Figure 21: Utilization rate of Antenatal Care(ANC) in the Fiscal Year 2018 2019

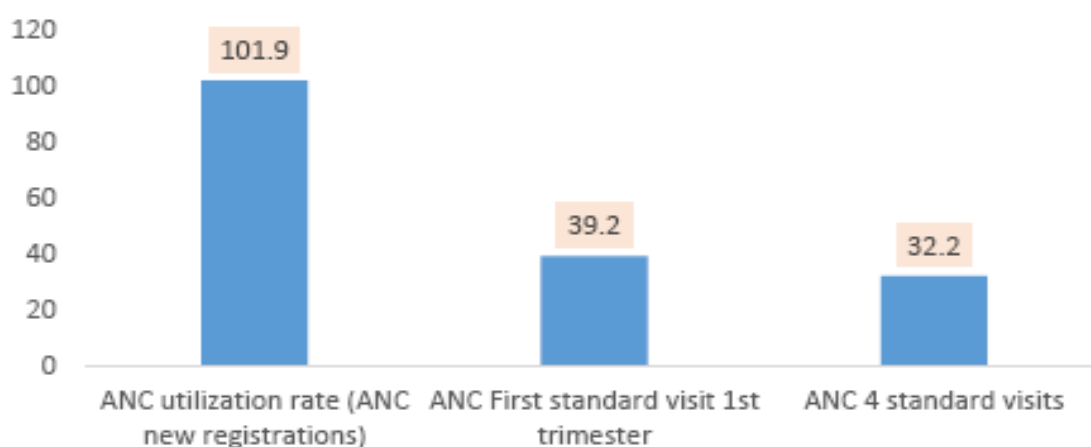
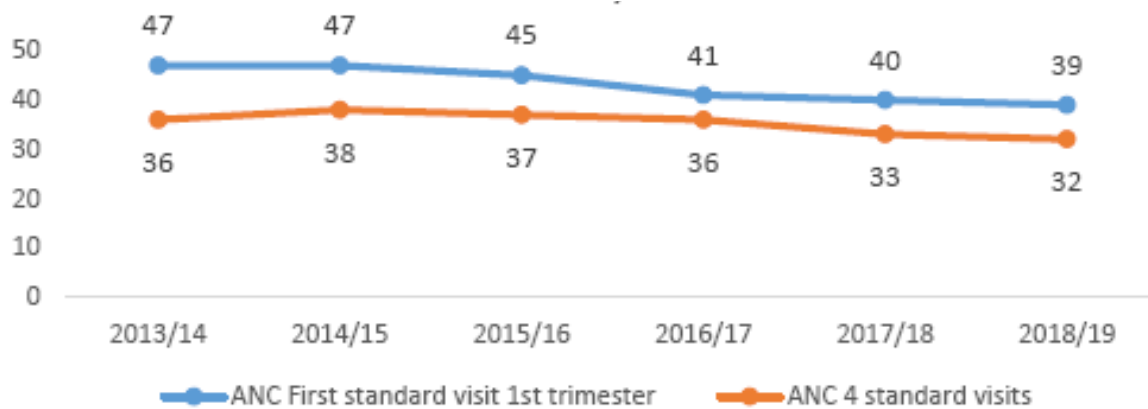


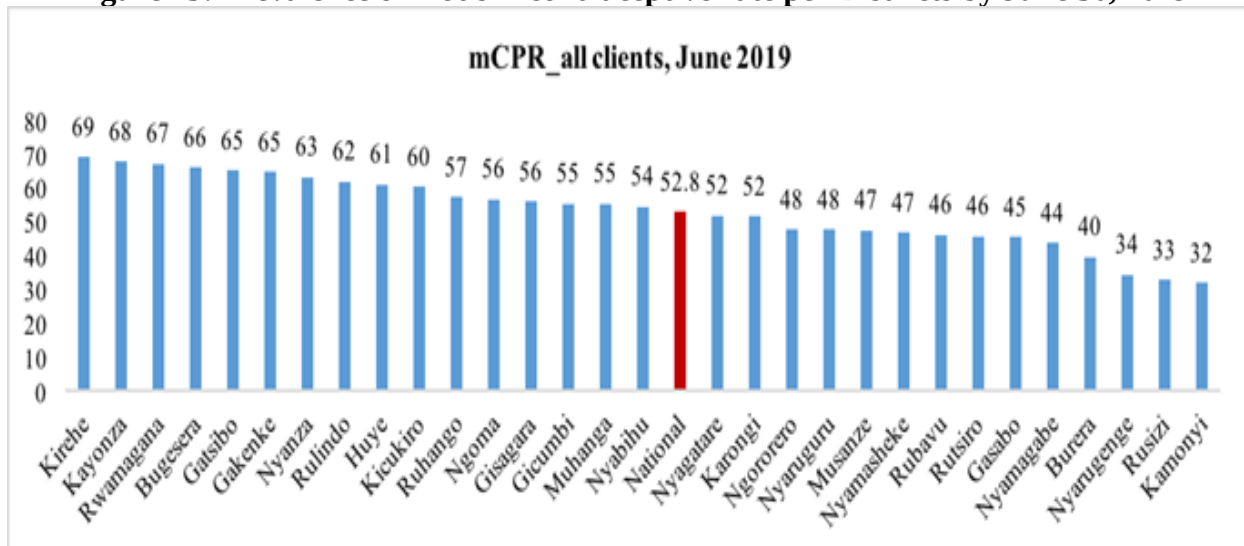
Figure 22: Trends of ANC 1st vs ANC 4 Standard Visits 2013-2019



2.3.3. Family Planning

- By June 30, 2019, the modern contraceptive prevalence rate(mCPR) in Rwanda was at 53.1%. The mCPR is high in the following districts: Gakenke, Rulindo, Kirehe, Rwamagana, Bugesera, Kicukiro, Kayonza, Huye, Nyanza and Gatsibo but it is critically low in Nyarugenge, Rusizi and Kamonyi.

Figure 23: Prevalence of modern contraceptive rate per Districts by June 30, 2019



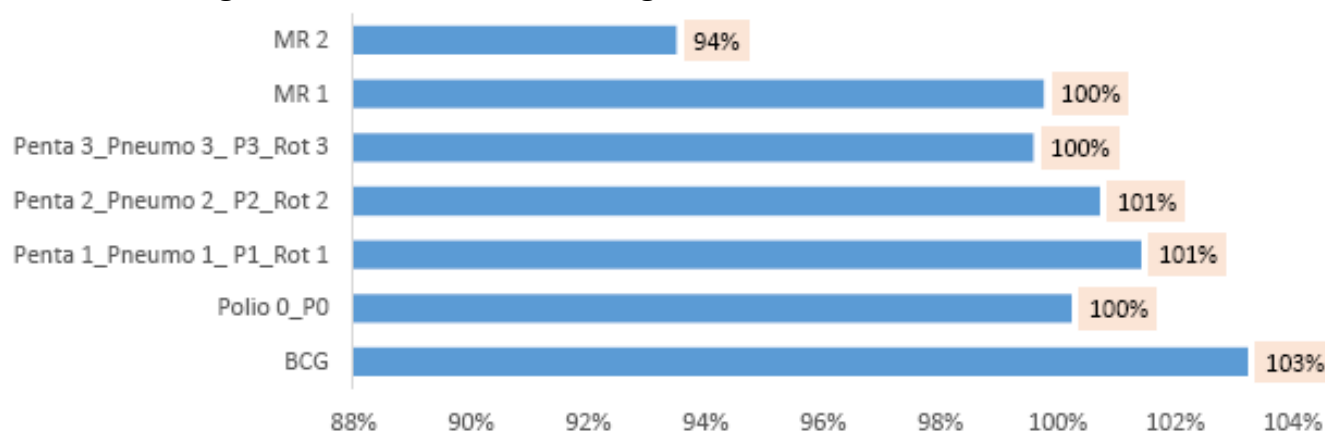
To increase the family planning uptake, sensitization campaigns were conducted in Karongi District (from the 23rd to the 28th July 201) and in Nyamasheke District (from the 25th to the 29th September 2018). In total 7,236 clients were reached and received FP methods of their choice (3,495 in Karongi whereby 49% received LAM and 3,741 in Nyamasheke whereby 23% received LAM).

In the same move, on job trainings on permanent methods and Family Planning Permanent Methods and Post-Partum Family Planning (PPFP) and were organized for healthcare providers from several Districts to scale up PPFP. For instance, a total of 79 providers from Gicumbi and 89 from Gakenke were trained on PPFP.

2.3.4. Immunization among children

Data from the Fiscal Year 2018-2019 show that: 103% children received BCG, 100% received Polio 0, 101% children have been vaccinated for Penta 1, and 94% were vaccinated for MR2 at 15 months of age.

Figure 24: Immunization coverage in the Fiscal Year 2018-2019



2.3.5. Fight against malnutrition among children under 5 years

- To improve the screening and monitoring of malnutrition of among children under 5 years, training on management of Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) was conducted in 40 Hospitals. The training focused on growth monitoring, micronutrient powder and maternal infant and young child nutrition. Participants were oriented on the new protocol for malnutrition management, and the community based nutrition package.
- A total of 539 staff from health centres: 472 heads of HCs, 30 District Early Childhood Development (ECD) Officers and 37 healthcare providers, were oriented/trained on nutrition programs including: Community performance based funding (C-PBF), Community based maternal and neonatal health (CBMNH), Integrated community case management (ICCM) & MIYCN Packages.

2.3.6. Adolescent sexual and reproductive health

The promotion of adolescent sexual and reproductive health was largely discussed in the International Conference on Family Planning 2018 (ICFP 2018) that was convened in Kigali on November 12-15, 2018. The key theme of the conference was “Investing in Family planning for a Lifetime of returns”. The ICFP 2018 attracted over 3,700 global policymakers, researchers, young people, family planning advocates and faith leaders. They discussed ways to bring family planning to all.

2.3.7. Sexual and gender-based violence (SGBV) cases received at Health Facilities

Efforts invested in SGBV awareness raising has greatly contributed to Healthcare services seeking among victims. The number of SGBV victims who come to seek healthcare services has been increasing over the last years.

Figure 25: SGBV Cases received at Health Facility, 2016-2019

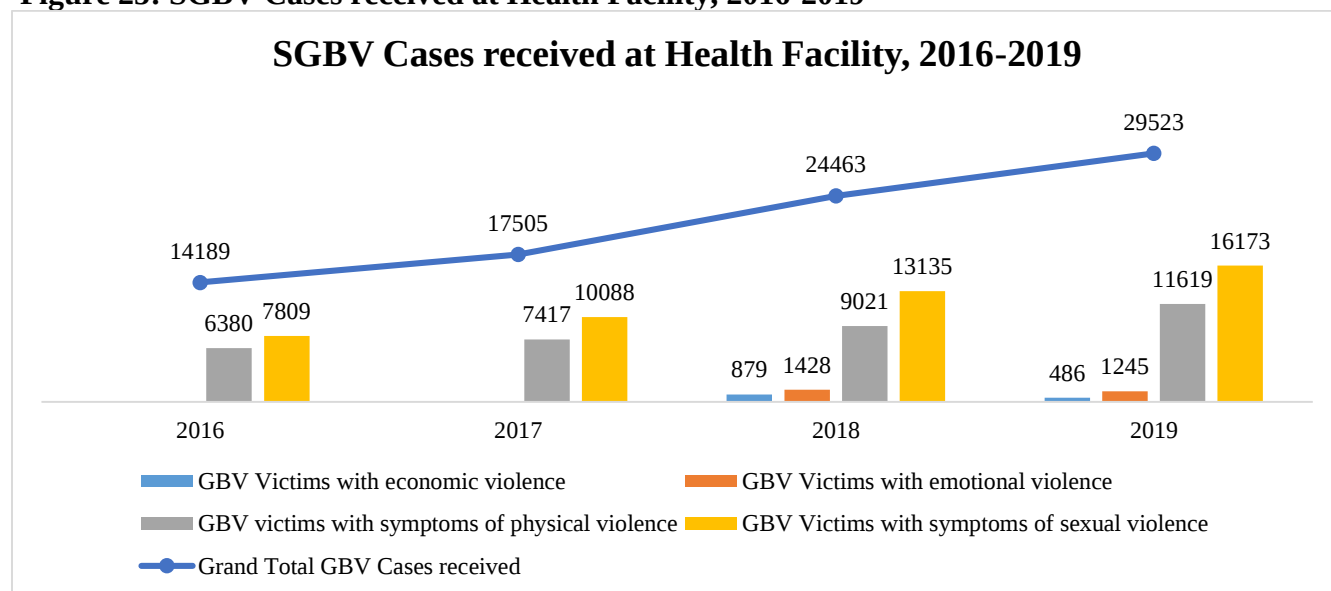


Table 18: Percentage of GBV cases received by facility type, 2016-2019

Type of Health Facilities	2016	2017	2018	2019
Provincial Hospital	4.8 %	5.0 %	4.8 %	4.7 %
Referral Hospital	6.9 %	7.7 %	8.5 %	6.4 %
Health Center	35.0 %	33.0 %	27.8 %	30.5 %
District Hospital	53.2 %	54.2 %	58.9 %	58.4 %

2.4. Epidemiology and Disease Surveillance

- In this reporting period, Epidemic Surveillance and Response Interventions supported District Rapid Response teams and managed to investigate and respond to 10 outbreaks including 5 cholera outbreaks, 2 typhoid fever outbreaks and 3 food poisoning outbreaks. All those outbreaks (100%) were managed according to National algorithms with 0% of case fatality rate at the health facility.
- At regional level, following the Ebola Virus Disease (EVD) outbreak in Democratic Republic of Congo (DRC), an Ebola Virus Disease national contingency plan was developed and implemented to improve the readiness of the country through trainings, table top exercises, awareness messages, provision of EVD kits. Fever screening activities were implemented at Kigali International Airport and all main land crossing borders with DRC.
- At the same time, the Health Sector Worked closely with animal health services to respond to the Rift Valley fever (RVF) outbreak in domestic ruminants and prevent the spill over of RVF in humans. Coordination mechanisms were reactivated at the national and district levels. A National RVF Guideline and Case Investigation Form for Health Facilities were developed and disseminated to all health facilities at risk. The surveillance was strengthened for early detection of cases, table top exercises with hospital rapid response teams were conducted to increase the skills and readiness of the District rapid response teams, and awareness messages were disseminated.
- To further strengthen the capacity of District Rapid Response Teams in surveillance and response, a 10-days Field Epidemiology Training Program (FETP) short course was organized for twenty-six rapid response team members from 13 hospitals. They were empowered and enabled to handle and manage key aspects of epidemic surveillance, outbreak detection and response as well as application of epidemiology data for decision making in their respective hospitals' catchment areas.
- In the FY 2018-2019, Rwanda reviewed her Integrated Disease Surveillance and Response Strategy of 2008. The new strategy recommends the prevention and control of epidemic diseases and other public health emergencies in Rwanda through the implementation of an effective and efficient epidemiological surveillance and response system.
- In 2018-2019, twenty-three diseases under surveillance were monitored on a daily basis across the country in all public health facilities and 130 accredited private health facilities

using the innovative electronic integrated disease surveillance and response (eIDSR) system. Every Monday, all health facilities submit reports that are consolidated and analysed. A weekly bulletin is released and shared/posted as feedback.

- Overall, in the country, acute respiratory diseases have been the number reason of outpatient consultation in health facilities in Rwanda. It represented between 15 and 16 percent of all OPD cases in the last three years (2017, 2018, and 2019). The other top causes of morbidity in health facilities include Malaria, Intestinal parasites, oral and dental diseases, diarrhea, gastro-intestinal problems, skin infections, eye diseases, urinary infections and gynaecological problems.
- The top ten of causes of mortality in Health Facilities in 2019 were:

Table 19: Top ten causes of morbidity in Health Facilities, 2017

disease group	Total	%
1 Acute respiratory disease	2964907	16.4%
2 Malaria cases	2355086	13.0%
3 Eye diseases	517255	2.9%
4 Intestinal parasites	805144	4.5%
5 Total oral and dental diseases	628161	3.5%
6 Skin infections	556226	3.1%
7 Gastro-intestinal problems	500899	2.8%
8 Diarrhea Cases	383686	2.1%
9 Urinary infections	367177	2.0%
10 Gynecological problems	226384	1.3%
11 Other diseases	8757466	48.5%
Total	18062391	

Table 20: Top ten causes of morbidity in Health Facilities, 2018

disease group	Total	%
1 Acute respiratory disease	2832404	15.0%
2 Malaria cases	2008382	10.6%
3 Intestinal parasites	805434	4.3%
4 Total oral and dental diseases	745701	3.9%
5 Diarrhea Cases	595842	3.2%
6 Gastro-intestinal problems	564579	3.0%
7 Skin infections	541109	2.9%
8 Eye diseases	468836	2.5%
9 Urinary infections	439562	2.3%
10 Gynecological problems	174399	0.9%
11 Other diseases	9730314	51.5%
Total	18906562	

Table 21: Top ten causes of morbidity in Health Facilities, 2019

	disease group	Total	%
1	Acute respiratory disease	3235291	16.4%
2	Malaria cases	1545856	7.8%
3	Intestinal parasites	1054054	5.3%
4	Total oral and dental diseases	841342	4.3%
5	Gastro-intestinal problems	756496	3.8%
6	Urinary infections	623030	3.2%
7	Eye diseases	603900	3.1%
8	Diarrhea Cases	603746	3.1%
9	Bone joint diseases and injuries	522443	2.6%
10	Skin infections	435365	2.2%
11	Other diseases	9523624	48.2%
		19745147	100.0%

3. RESEARCH, KNOWLEDGE MANAGEMENT AND CONFERENCE

3.1. Capacity development workshop in clinical trials development

During this 2017-2018 fiscal year, partnerships were initiated with research institutions and private sector to streamline medical research and development in Rwanda. Therefore, online programs on clinical trials and drug development project management will be developed in Collaboration with University of Karolinska (Sweden) through MOH E-learning program. Capacity building and development of systematic review for evidence-based health care will be continued to promote evidence informed health policies in Rwanda.

3.2. Rwanda Population-Based HIV Impact Assessment (RPHIA)

- The Rwanda Population-Based HIV Impact Assessment (RPHIA), a national household-based survey, was conducted between October 2018 and March 2019 in order to measure the status of Rwanda's national HIV response. RPHIA offered HIV counseling and testing with return of results and collected information about uptake of HIV care and treatment services.
- This survey was the first in Rwanda to measure both national HIV incidence and viral load suppression (VLS) and to generate the national prevalence Hepatitis B and C. The results have been released to provide information on national and subnational progress towards control of the HIV epidemic. During the fiscal Year 2018-19, data analysis and report/abstracts writing activities for various HIV surveys and surveillance above mentioned were conducted.

3.3.The 7th Conference of the College of Surgeons of East, Central and Southern Africa (COSECSA)

- The COSECSA is organized every year and the event includes Graduation of Fellows in different disciplines of surgery. Rwanda hosted the 7th COSECSA from the 5th to 7th December 2018. This was the second time for Rwanda to organize the COSECSA.
- Over 85 fellows from over 14 African countries on the 5th December 2018 graduated in different disciplines of surgery under the College of surgeons of East, Central and Southern Africa (COSECSA). The graduates hailed from Malawi, Kenya, Uganda, Zambia, Zimbabwe, Cameroon, Egypt, Madagascar, Ethiopia, Tanzania and 10 of them from Rwanda. The disciplines they graduated in include; Urology, pediatric orthopedics, neurosurgery, orthopedics, Ear Nose and Throat, plastic and general surgeries. The graduation happened after over 140 surgical trainees (examinees), 120 examiners and more than 300 surgeons from the region and beyond converged in Rwanda to run examinations from 3rd to 4th December 2018.
- The graduation was followed by the COSECSA annual general meeting and scientific conference. The scientific conference featured topics like; Surgical infections and safety, the national surgical, anesthesia and obstetric plans. The conference brought together researchers, healthcare providers, academicians, policy makers to share latest surgery developments on surgical infections and safety in the context of global access to surgery and anesthesia.

3.4.The 7th Scientific Conference of the College of Ophthalmology of Eastern, Central and Southern Africa 2019 in Kigali, Rwanda

- The College of Ophthalmology of Eastern Central and Southern Africa (COECSA) is a regional specialized virtual college. The college was registered in 2012 after a merger between Eastern Africa College of Ophthalmologists (EACO) and Ophthalmological Society of Eastern Africa (OSEA). The aim of this college is to address the chronic shortage of ophthalmologists in member countries as well as improve the quality of eye care services in the region.
- Every year, COECSA organizes a conference to provide a sound scientific knowledge base on issues related to eye care delivery and capacity building. The 7th COECSA Scientific Congress was hosted by the Rwanda Ophthalmology Society (ROS) on August 21 – 23, 2019, at the Kigali Convention Centre. For the first time, the Kigali COECSA congress organized sessions in French for participants from francophone countries.

3.5. Dissemination of the Health Sector Strategic Plan (HSSP IV) 2018-2024 and Sub-Strategic Plans

- On January 31, 2019, the Ministry of Health disseminated the Health Sector Strategic Plan (HSSP IV) 2018-2024 and Related Sub-Strategic Plans. HSSP IV provides clear strategic actions for the transformation of the Rwanda's Healthcare System. It also gives a green light for the development of more focused sub-sector strategic plans, especially in areas where more efforts are needed to expedite the transformation Rwanda aspires to. The HSSP IV is aligned to the Rwanda National Strategy for Transformation (NST) 2018-2024. It prioritizes accessible, affordable, quality, and efficient delivery of healthcare as key pillars to enable Rwanda to achieve the Universal Health Coverage.
- On the same day, it was also the opportunity for the Ministry of Health to present other health sector sub-strategies and policy documents that will support the implementation of HSSP IV in a more focused way. Health sector sub-strategies and policy presented on that day include:
 - National Plan of Action for Eye Health (NPAEH) 2018-2024
 - National Surgical, Obstetrics, and Anesthesia Plan 2018-2024
 - National Ear and Hearing Care Plan 2018-2024
 - Health Financing Strategic Plan 2018-2024
 - Rwanda Medical Acts Coding Book 2018.
 - Family Planning Business Case
 - Rwanda Master Facility List 2018
 - Maternal Newborn and Child Health Strategic Plan 2018–2024
 - National Family Planning and Adolescent Sexual and Reproductive Health (FP/ASRH) Strategic Plan 2018–2024
 - Emergency Medical Services Strategic Plan 2018–2024
 - National Social and Behavior Change Communication Strategy for Integrated Early Childhood Development, Nutrition and Wash (2018-2024)
 - Adolescent, Reproductive Health and FP Strategic Plan Emergency Medical Services Strategic Plan
 - Neglected Tropical Diseases Strategic Plan 2019-2024
 - National Pharmaceutical Sector Strategic Plan (NPS-SP) 2018–2024

3.6. The 20th International Conference on AIDS and STIs in Africa

- The International Conference on AIDS and Sexually Transmitted Infections in Africa (ICASA) is a major bilingual international AIDS conference which takes place in Africa. Its current biennial hosting alternates between Anglophone and Francophone African countries. The 2019 ICASA was held in Rwanda, on 2-7 December 2019 at Kigali Convention Centre. The convening of the ICASA 2019 in was a tremendous opportunity to highlight the diverse nature of the African region's HIV epidemic and the unique response to it. By gathering all categories of people working in the field of HIV, as well as leaders, people living with HIV and others committed to ending the epidemic, the Kigali ICASA convention allows researchers from around the world to share the latest scientific advances in the field of HIV, learn from one another's expertise, and develop strategies for advancing all facets of our collective efforts to end AIDS by 2030.
- Over 7,000 delegates from nearly 150 countries, including journalists attended the Kigali ICASA 2019.

3.7. International Research Conferences

Over the last 3 years, Rwanda has hosted the following international conferences related to NCDs prevention and control:

- **AORTIC's 11th International Conference on Cancer in Africa (AORTIC 2017)** took place from 7 to 10 November at the Kigali Convention Centre in Kigali. The theme was “**Cancer in Africa: Making Strides, Creating Solutions**” and more than 900 delegates from all over the world attended the meeting
- The 4th East Africa Diabetes Congress and Scientific Sessions, Kigali Convention Centre, from 12 - 14 March 2018 the theme was “**Prevention of Diabetes and its Complications**”. 400 participants attended.
- First Rwanda National Trauma Symposium: Took place at Lemigo Hotel on 13 February 2019. Around 100 delegates attended the meeting
- Occupational therapy congress: from 26 to 29 August 2019 at Lemigo Hotel where around 140 delegates from 14 countries attended the meeting. The theme was “**Giving back meaning to life: Occupational Therapy at the Centre**”

- 6th International African Palliative Care Conference from 17 to 20 September 2019, Kigali Convention Centre. The theme was “**Palliative Care and Universal Health Coverage**”. Over 500 delegates from all over the world attended the conference.

3.8. Other Health Sector Related MICE organized in 2017-2020.

- Overall, the Health Sector organized 32 MICE in 2017-2019. It is estimated that around 20500 international and national delegates attended these events. The table below lists MICE organized in 2017-2019.

Table 22: Other Health Sector Related Meetings and Conference Organized in 2017, 2018 and 2019

2017 Events	
1. The Global Fund	250
2. First Africa Health Forum	400
3. East and central society of Obstetricians and Gynecologists	150
4. 2 nd International Nursing Conference	150
5. Africa Organization for Research and Training in Cancer	1,000
6. World Health Students Summit	500
2018 Events	
1. East Africa NCD Alliance Multi- Stakeholders workshop	60
2. Content management System Conference (CMS)	80
3. EAC Regional Conference on eHealth	100
4. 12 th Interest Conference (Africa CROI) - leDEA	500
5. 2018 Pan African Dental Surgeons Conference	150
6. The Eastern Africa Reproductive Health Network (EARHN) Coordination Meeting	30
7. AfSHG/ H3Africa - International Conference of African Society of Human Genetics	800
8. 2018 Preterm Birth Initiative Symposium	120
9. 5th International Conference on Family Planning	3,806
10. College of Surgeons of East, Central and Southern African (COSECSA 2018 AGM & Scientific Conference)	500
2019 Events	
1. Name of the Event	# Delegates
2. Africa Health Agenda International Conference (AMREF)	1500
3. Incision Global Surgery Symposium	300
4. East African Association Médecins Sans Frontières	150
5. WHO - World Blood Donor Day	100
6. 65th International Pharmaceutical Students' Federation	500
7. The 7 th Scientific Conference of the College of Ophthalmology of Eastern, Central and Southern Africa	500
8. Occupational Therapy Africa Regional Group - OTARG	200
9. Federation of African Nutrition Societies International	250
10. 7th International Africa Palliative Care Association Conference. (Rwanda Global Healthcare Summit - Exhibition)	400
11. Joint Minimally invasive surgery and 3rd Rwanda Biotechnology conference	250

12. International Pharmaceutical Congress	100
13. International Conference on Non Communicable Diseases	200
14. Women Leadership in Global Health Conference	200
15. The International Conference on AIDS and Sexually Transmitted Infections in Africa (ICASA)	7000

Table 23: Health Sector Budget Execution: July 2017-June 30, 2018

Sub Program Name	Sum of Budget	Sum of Execution	Sum of Remaining Balance	% Spent
Administrative And Support Services	20,777,913,440	18,415,615,933	2,362,297,507	88.6
Health Sector Planning And Information	10,917,849,997	9,977,918,342	939,931,655	91.4
Health Human Resources	13,071,360,554	11,304,124,884	1,767,235,670	86.5
Financial And Geographical Health Accessibility	35,082,075,179	30,327,173,471	4,754,901,708	86.4
Policy Development And Health Service Regulation	19,036,097,889	17,455,409,393	1,580,688,496	91.7
Maternal And Child Health	4,420,589,792	3,375,495,687	1,045,094,105	76.4
Specialized Health Services	10,150,930,046	10,150,930,046	0	100.0
Health Quality Improvement	28,409,567,993	32,598,375,206	-4,188,807,213	114.7
Disease Prevention And Control	12,050,334,816	9,294,475,828	2,755,858,988	77.1
Grand Total	153,916,719,706	132,748,588,744	21,168,130,962	86.2

Table 24: Health Sector Budget Execution: July 2018-June 30, 2019

Sub Program Name	Sum of Budget	Sum of Execution	Sum of Remaining Balance	% Spent
Administrative And Support Services	44,415,410,306	36,782,794,536	7,632,615,770	83
Health Financing	38,450,814,947	36,493,968,524	1,956,846,423	95
Health Information and Technologies	2,862,474,538	2,262,634,275	599,840,263	79
Health Infrastructure and Equipment	2,435,773,747	2,350,980,625	84,793,122	97
Health Professional Development	6,868,439,297	6,200,113,211	668,326,086	90
Health Service Regulation	534,644,902	523,592,035	11,052,867	98
Hygiene And Environmental Health	779,302,910	489,766,575	289,536,335	63
Partnerships Coordination and Mobilization	7,234,000	8,120,859	-886,859	112
Health Sector Planning, Monitoring and Evaluation	4,335,792,223	2,954,317,801	1,381,474,422	68
Pre-Hospital and Emergency Services	793,825,324	729,907,521	63,917,803	92
Maternal, Child and Adolescent Health	8,695,475,302	7,697,492,910	997,982,392	89
Non-Communicable Diseases and Mental Health Prevention and Control	1,122,961,533	985,224,247	137,737,286	88
Health Service Delivery and Quality Improvement	62,032,655,881	53,314,053,716	8,718,602,165	86
Infectious Diseases Prevention and Control	13,071,583,619	11,250,801,316	1,820,782,303	86
Grand Total	186,406,388,529	162,043,768,151	24,362,620,378	87

ANNEXES: Other Health Sectors Statistics 2017-2019 As Published in the Rwanda Statistical Yearbook 2019

A. Infant and Maternal Health Indicators

Table a.1.: Caesarian sections in District Hospitals and referral Hospitals

Health Facility Type	2015				2016				2017				2018			
	Number of deliveries	Number of dystocic deliveries	Number of cesarean section	Cesarean % of total delivery	Number of deliveries	Number of dystocic deliveries	Number of cesarean section	Cesarean % of total delivery	Number of deliveries	Number of dystocic deliveries	Number of cesarean section	Cesarean % of total delivery	Number of deliveries	Number of dystocic deliveries	Number of cesarean section	Cesarean % of total delivery
District Hospital	94,624	39,570	36,502	38.60%	95,048	39,256	35,243	37.10%	98,334	39,838	37,153	37.80%	100,886	41,115	40,499	40.10%
Provincial Hospital	8,837	3,867	3,763	42.60%	8,217	3,386	3,304	40.20%	8,389	3,772	3,722	44.40%	8,728	3,762	3,525	40.40%
Referral Hospital	15,110	6,744	6,241	41.30%	16,009	7,212	6,708	41.90%	16,561	8,044	7,607	45.90%	17,462	8,664	8,213	47.00%
Total	118,571	50,181	46,506	40.80%	119,274	49,854	45,255	39.70%	123,284	41,654	48,482	39.30%	127,076	53,541	52,237	42.50%

Source: RBC

Table a.2: Births and prenatal deaths in public health centers, referral hospitals and district hospitals

Facility Type	2016				2017				2018			
	Total births	Total deaths	Births < 2.5 kg	% low BW	Total births	Total deaths	Births < 2.5 kg	% low BW	Total births	Total deaths	Births < 2.5 kg	% low BW
Health Centers	203,319	1,758	8835	4.30%	197,377	1,581	6,409	3.20%	188,011	1,246	12,343	6.60%
District Hospitals	93,581	3,398	9406	10.10%	100,313	3,285	4,213	4.20%	101,527	2,750	14,936	14.70%
Provincial Hospitals	8,042	270	912	11.30%	8,497	287	461	5.40%	8,850	242	1,378	15.60%
Referral Hospital	15,771	599	1785	11.30%	20,654	623	826	4.00%	17,721	514	2,928	16.50%
Total	320,713	6,025	20,938	9.30%	326,841	5,776	11,909	3.60%	316,109	4,752	31,585	13.30%

Source: RBC

B. HIV Prevalence

Table b.1: HIV prevalence rate by some characteristics in VCT

Characteristics	2011	2012	2013	2014	2015	2016	2017	2018
By gender								
Male	0.9	0.7	0.7	0.6	0.6	0.7	0.5	0.6
Female	1.3	1	0.9	0.9	0.9	0.8	0.7	0.7
Total	1.2	0.8	0.8	0.8	0.8	0.8	0.6	0.7
By age groups								
<15	0.5	0.4	0.4	0.5	0.3	0.2	0.2	0.3
15-24	0.9	0.6	0.6	0.6	0.6	0.5	0.4	0.5
25+	1.4	1	1	0.9	0.9	1	0.8	0.8
Total	1.2	0.8	0.8	0.8	0.8	0.8	0.6	0.7
By Provinces								
East	0.9	0.9	0.5	0.6	0.6	0.5	0.5	0.8
West	0.5	0.6	0.4	0.5	0.5	0.5	0.5	0.6
North	0.7	0.6	0.6	0.6	0.4	0.4	0.4	0.5
South	1.1	1.05	0.9	0.8	0.6	0.6	0.4	0.4
Kigali City	5.5	5.4	4	3.1	2.9	2.5	1.9	1.5
HIV prevalence (VCT)	1.2	0.8	0.8	0.8	0.8	0.8	0.6	0.7

Source: RBC/ HIV-AIDS division

Table b.2: HIV prevalence rate among VCT

	2016			2017			2018		
	Tested	HIV+	%HIV+	Tested	HIV+	%HIV+	Tested	HIV+	%HIV+
Sex									
Male	1,247,954	8,584	0.7	1,088,568	5,684	0.5	1,271,782	7,659	0.6
Female	1,557,875	12,574	0.8	1,239,288	8,643	0.7	1,508,003	10,701	0.7
Total	2,805,829	21,158	0.8	2,327,856	14,327	0.6	2,779,785	18,360	0.7
Age group									
<15	304,702	721	0.2	244,205	494	0.2	261,404	749	0.3
15-24	922,703	4,507	0.5	793,803	3,353	0.4	958,294	4,581	0.5
25+	1,578,424	15,930	1	1,289,848	10,480	0.8	1,560,087	13,030	0.8

Total	2,805,829	21,158	0.8	2,327,856	14,327	0.6	2,779,785	18,360	0.7
Provinces									
East	784,288	3,820	0.5	616,394	2,947	0.5	728,667	5,488	0.8
West	662,271	3,156	0.5	514,062	2,480	0.5	592,772	3,290	0.6
North	425,633	1,877	0.4	320,627	1,218	0.4	408,104	1,876	0.5
South	580,602	3,384	0.6	606,212	2,596	0.4	727,606	2,753	0.4
Kigali City	353,035	8,921	2.5	270,561	5,086	1.9	322,636	4,953	1.5
Total	2,805,829	21,158	0.8	2,327,856	14,327	0.6	2,779,785	18,360	0.7

Source: RBC/ HIV-AIDS division

Table b.3: HIV+ prevalence among pregnant women by province

	2016			2017			2018		
Province	Tested	HIV+	%HIV+	Tested	HIV+	%HIV+	Tested	HIV+	%HIV+
East	91,139	714	0.78	89,386	567	0.63	89,263	819	0.92
West	82,374	592	0.72	79,476	429	0.54	79,333	408	0.51
North	55,152	245	0.44	55,784	222	0.4	55,877	171	0.31
South	74,078	549	0.74	69,089	372	0.54	72,275	356	0.49
Kigali City	41,771	736	1.76	43,320	526	1.21	43,500	420	0.97
Total	344,514	2,836	0.82	337,055	2116	0.63	340,248	2,174	0.64

Source: RBC/ HIV-AIDS division

Table b.4: HIV+ pregnant women who received Anti-retroviral therapy (ART) to reduce the risk of MTCT/PMTCT (15-49)

Characteristics	2011	2012	2013	2014	2015	2016	2017	2018
Total women HIV+	5,470	3941	4,266	5,152	3,129	2,836	2116	2,174
HIV + women on ART	5,352	3956	3,717	3,380	2,879	2,082	1656	2,081
HIV + women on ART in %	97.8	100	87.1	65.6	92	73.4	78.3	95.7
HIV prevalence among pregnant women in PMTCT in %	1.7	1.4	1.2	1.1	0.9	0.8	0.6	0.6
HIV prevalence among partners in %	1.7	1.5	1.3	0.9	0.8	0.7	0.4	0.5

Source: RBC/ HIV-AIDS division

Table b.5: Percentage of ARV (Anti-Retroviral) Distribution and Children on ARV

ARV distribution	2012	2013	2014	2015	2016	2017	2018
Male in %	34	36	37	37	37	37	37
Female in %	66	64	63	63	63	63	63
Children on ARV							
Male in %	49	49	50	50	49	49	49
Female in %	51	51	50	50	51	51	51

Source: RBC/ HIV-AIDS division

Table b.6: Percentage of ARV (Anti-Retroviral) distribution by type of health facility

ARV	2012	2013	2014	2015	2016	2017	2018
Health Center in %	72.4	76.3	90.4	90.7	79.9	80.9	82
Hospital in %	26.3	22.4	8.4	7.2	12.7	11.8	11
Referral Hospital in %	1.3	1.2	1	1.5	5.7	5.6	6
Dispensary in %	0.1	0.2	0.2	0.6	1.6	1.7	2

Source: RBC/ HIV-AIDS division

Table b.7: Number of couples tested for HIV

Year	VCT		PMTCT		VCT sites	PMTCT
	Couple tested	Discordant couples	Couple tested	Discordant couples		
2008	101,283	3,877	229,201	6,085	-	341
2009	106,050	3,877	248,806	5,899	413	377
2010	107,997	3,883	397,062	9,250	434	404
2011	98,424	1,611	273,127	4,464	452	452
2012	89,920	1,763	268,002	3,703	485	463
2013	85,362	1,835	294,282	3,696	503	461
2014	81,100	1,317	299,791	3,570	500	463
2015	79,475	1,483	294,217	3,281	570	530
2016	72,248	1,282	296,363	3,041	582	538
2017	76,866	1,334	268,962	2,202	585	539
2018	119,839	1,564	281,240	1,916	582	547

Table b.8: Voluntary HIV /AIDS testing by age group

		People tested	Total in %	Number of HIV+	HIV+ prevalence in %
2013	< 15 years	312,919	10	1,367	0.4
	15-25	1,060,168	33	6,113	0.6
	>=25 year	1,815,736	57	17,827	1
	Total	3,188,823	100	25,307	0.8
2014	< 15 years	277,560	9	1,379	0.5
	15-25	975,673	33	6,338	0.6
	>=25 year	1,693,532	57	16,282	1
	Total	2,946,765	100	23,999	0.8
2015	<15 years	312,585	11	898	0.3
	15-24	949,131	32	5,557	0.6
	>=25 year	1,677,799	57	15,727	0.9
	Total	2,939,515	100	22,182	0.8
2016	<15 years	304,702	11	721	0.2
	15-24	922,703	33	4,507	0.5
	>=25 year	1,578,424	56	15,930	1
	Total	2,805,829	100	21,158	0.8
2017	<15 years	244,205	10.5	494	0.2
	15-24	793,803	34.1	3,353	0.4

C. Family Planning

Table c.1: Family Planning Users by method and units distributed in health facilities

Method	2015		2016		2017		2018	
	New users in 2015	Continuing users at the end of Dec.2015	New users in 2016	Continuing users at the end of Dec.2016	New users in 2017	Continuing users at the end of Dec. 2017	New users in 2018	Continuing users at the end of Dec. 2018
Implant	35,861	176,505	48,856	223,706	98,469	303,079	142,256	445,115
Injectable: Depo-Provera, Noristerat)	161,987	706,195	116,616	731,692	132,264	741,628	183,220	730,090
Oral contraceptives (pills)	61,597	228,278	58,460	240,089	64,717	261,231	82,766	273,070
Natural FP (cycle beads and Auto observation)	6201	19,764	5497	23,170	8,096	24,053	9,628	22,865
IUD	4,320	22,640	4,215	24,336	5,508	30,040	8,375	30,121
Barriers (gel diaphragm)	123	502	205	230	443	877	57	153
Surgical Contraception (tubal ligation)	1225	6,616	1460	8,115	2,163	10,495	1,937	12,847
Condom (Male, Female)	12,787	36,341	11,643	39,529	14,677	42,824	16,917	43,955
Vasectomy	154	2,955	142	3,309	191	3,097	653	2,940
Grand Total	284,255	1,199,796	247,094	1,294,176	326,528	1,417,324	445,809	1,571,247

Source: RBC

D. Malaria

Table d.1: Malaria proportional Mortality 2012-2018

Year	2012	2013	2014	2015	2016	2017	2018
Under 5 Deaths due to Malaria	48	64	173	130	158	139	84
Under 5 All Deaths	1,647	1,854	5,080	4385	4,162	3842	3,802
Above 5 Deaths due to Malaria	314	401	416	401	685	244	241
Above 5 Deaths	7,379	7,275	4,435	7175	7,846	5464	6,249
Under 5 Malaria proportional Mortality (%)	2.91	3.45	3.41	3.00%	3.80%	3.60%	2.20%
Above 5 malaria proportional Mortality (%)	4.26	5.51	9.4	5.60%	8.70%	4.50%	3.90%

Source: RBC/ Malaria unit

E. Tuberculosis

Table e.1: Incidence of tuberculosis

	2013	2014	2015	2016	2017	2018
TB Presumptives/TB Presumptives	185,375	204,742	181,324	161,038	161,141	199,384
TB cases all forms	5,979	5,907	5,637	5,576	5,759	5,754
TB smear positive pulmonary/ TB New pulmonary bacteriologically conformed	3,870	3,571	3,754	3,717	3,826	1,942
TB retreatment cases	331	427	452	346	547	188
TB Therapeutic success (New pulmonary bacteriologically conformed)	90	89	91	88.40%	87.60%	86.70%
TB failures rate (in %)	3	3	2	1.60%	1.30%	2.10%
TB Death rate associated with tuberculosis (in %)	5	5	5	5.80%	8.50%	5.50%
TB cases all forms tested for HIV	5,882	5,823	5,612	5,872	5,713	5,952
TB/HIV positive	1,448	1,531	1,449	1,277	1,257	1,235
MDR (multidrug resistant TB)	40	157	94	79	80	94

Source: RBC/ Tuberculosis unit

Table e.2: Community Health Workers (CHWs) participation in community DOTS

Year		2012	2013	2014	2015	2016	2017	2018
Number of Districts								
TB Presumptive/TB Presumptive		165,864	185,375	204,742	181,324	161,038	161,141	199,384
Population Covered								
TB Presumptive cases	Total	165,864	185,375	204,742	181,324	161,038	161,141	199,384
	Detected by CHW	79,540	94,438	102,587	87,273	65,270	68,494	111,665
Number of positive presumptive cases	TOTAL	3,855	3,957	5,907	4,140	4,484	4,286	4,375
	Detected by CHW	1,074	1,157	1,200	1,077	1,165	1,065	1,414
% of presumptive referred by CHW	by CHW	48	51	50	48	41%	43%	56%
% of presumptive positive referred by CHW	by CHW	25	28	20	26	26%	25%	32%

Source: RBC/ Tuberculosis unit

F. Nutrition

Table f.1: Growth monitoring for less than 5 years by community health workers

	2014	2015	2016	2017	2018
Total frequency of U5 children screened for malnutrition by CHW	1,386,164	1,116,397	1,117,976	1,139,056	1,158,138
Frequency Moderate malnutrition (yellow)	9,498	6,373	6,498	8,195	11,675
Frequency Severe malnutrition (Red)	1,327	903	1,042	1,411	1,118
Frequency Normal (green)	1,123,045	1,109,121	1,110,436	1,129,450	1,145,346

Source: RBC

Table f.2: Hospitalization for childhood malnutrition and health outcomes

Year	Level of care	Registrations		Status			
		New Cases	Old Cases	Recovered	Referred to Hospital	Lost to follow up	Died
2012	< 5 years	15,530	6,994	19,636	790	1,556	139
	>= 5 years	2,038	1,056	2,501	121	300	25
	Total	17,586	8,050	22,136	911	1,856	164
2013	< 5 years	17,238	2656	15,252	406	826	131
	>= 5 years	1,552	251	1,439	30	87	11
	Total	18,790	2,907	16,691	436	913	142
2014	< 5 years	23,663	3768	24,858	956	1120	236
	>= 5 years	4,806	629	4632	216	203	87
	Total	28,469	4,397	29,490	1,172	1,323	323
2015	< 5 years	21,756	3518	19,598	934	1014	295
	>= 5 years	3,751	242	3036	211	164	103
	Total	25,507	3,760	22,634	1,145	1,178	398
2016	< 5 years	23,198	2,273	20,086	828	990	305
	>= 5 years	3,538	217	2853	100	108	142
	Total	24,397	2,417	21,728	887	946	436
2017	< 5 years	1,519	42	1,354	66	40	86
	>= 5 years	526	19	440	26	14	31
	Total	2,045	61	1,794	92	54	117
2018	< 5 years	27,071	2,805	30,732	1,327	794	340
	>= 5 years	4,900	225	3,436	109	60	84
	Total	31,971	3,030	34,168	1,436	854	424

Source: RBC

Table f.3: Outpatient treatment of malnutrition and health outcomes

Year	Level of care	Registrations		Status			
		New Cases	Old Cases	Recovered	Referred to Hospital	Lost to follow up	Died
2010	< 5 years	30,945	24,079	26,645	362	5,009	139
	>=5 years	6,644	2,915	5,224	92	644	27
	Total	37,589	26,994	31,869	454	5,653	166
2011	< 5 years	22,929	25,697	27,886	356	3,914	111
	>=5 years	6,319	5,294	6,284	67	760	22
	Total	29,248	30,991	34,170	423	4,674	133
2012	< 5 years	22,031	-	25,683	1,665	2,275	202
	>=5 years	2,823	-	3,067	229	413	30
	Total	24,854	-	28,750	1,894	2,688	232
2013	< 5 years	29,817	3902	24,073	1,139	1,344	342
	>=5 years	5,080	466	4,301	199	211	61
	Total	34,897	4,368	28,374	1,338	1,555	403
2014	< 5 years	23,663	3768	24,858	956	1,120	236
	>=5 years	6,135	724	5,679	254	247	124
	Total	29,798	4,492	30,537	1,210	1,367	360
2015	< 5 years	23,200	3768	20,771	985	1,106	310
	>=5 years	3,885	280	3,168	229	173	106
	Total	27,085	4,048	23,939	1,214	1,279	416
2016	< 5 years	23,198	2273	20,086	828	990	305
	>=5 years	3,724	236	2,996	114	118	156
	Total	26,922	2,509	23,082	942	1,108	461
2017	< 5 years	33,085	3,205	27,551	997	783	-
	>=5 years	4,720	430	2,576	93	53	-
	Total	37,805	3,635	30,127	1,090	836	-
2018	< 5 years	36,419	3,040	36,238	1,406	965	362
	>=5 years	5,229	248	3,547	132	70	88
	Total	41,648	3,288	39,785	1,538	1,035	450

Source: RBC

G. Gender Based Violence

Table g.1: Gender Based Violence

	2015			2016			2017			2018		
Number of GBV Victims in District Hospitals	Males	Females	Grand Total	Males	Females	Grand Total	Males	Females	Grand Total	Males	Females	Grand Total
GBV victims with symptoms of physical violence (new cases)	1,578	4,303	5,881	1,715	4,665	6,380	1,838	5,579	7,417	1,715	4,665	6,380
GBV victims with symptoms of sexual violence (new cases)	291	7,277	7,568	300	7,509	7,809	344	9,744	10,088	300	7,509	7,809
National	1,869	11,580	13,449	2,015	12,174	14,189	2,182	15,323	17,505	2,015	12,174	14,189

Source: RBC