



NEURO-PSYCHIATRIC HOSPITAL CARAES NDERA
BROTHERS OF CHARITY

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ANNUAL REPORT

2020 - 2021



October 2021

EXECUTIVE SUMMARY

Neuro-Psychiatric Hospital CARAES Ndera provides specialized healthcare in psychiatry and neurology in accordance with the professional ethics and policy of Rwanda National Health Sector. The hospital is located in Ndera Sector, Gasabo District, City of Kigali, and has two branches; CARAES Butare in Huye District, Southern Province and Icyizere Psychotherapeutic Centre, in Kicukiro District, City of Kigali. In the fiscal year 2020/2021, the hospital recorded 74,363 patient consultations at Ndera and the two branches, up from 73,675 consultations in 2019, which is a 1% increase from the previous year. The number of patients consulted at CARAES Ndera was 49,761, which takes 67% of the total patients. Icyizere Psychotherapeutic Centre recorded 8,481 consultations (11%), while CARAES Butare had 16,121 consultations (22%).

The most prevalent pathologies in psychiatry was schizophrenia with 54.64% and acute psychotic disorders with 12.40%, while the predominant pathology in neurology was epilepsy, with 61.04% of the consulted patients with neurological disorders. The number of hospitalized patients was 4,639; 77% of them being in CARAES Ndera, 16% in CARAES Butare and 7% in Icyizere Psychotherapeutic Center.

Other activities carried out during this fiscal year include community outreach and mentorship programmes, which involved the hospital staff's contribution in capacity building for healthcare professionals at district hospitals level to boost mental health care. Thirty district hospitals were reached in this programme. The hospital also supported the association of ex-service users (OPROMAMER) in relapse prevention and social rehabilitation. In education, the hospital received students from different local and international universities, who were conducting internship in mental healthcare, as well as resident psychiatrists. Since the occurrence of COVID-19 pandemic in Rwanda, the hospital did various preventive activities, such as screening, availing personal protective equipment, observing social distancing and establishing hand washing stations, among others. Hospital staff and the most vulnerable patients were vaccinated, and staff members who tested COVID-19 positive were successfully treated.

Generally, the action plan of the hospital for the year 2020/2021 was successfully implemented; despite delays in the implementation of some of the planned activities due to the COVID-19 pandemic. In addition, despite the increase in the number of the patients and the COVID-19 challenges, there was no stock out of psychotropic drugs and other pharmaceutical products.

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CHAPTER I. DESCRIPTION OF INSTITUTION STATUS

1.1. Introduction

Neuro-Psychiatric Hospital CARAES Ndera is a mission health facility that offers specialized healthcare in psychiatry and neurology in accordance with the professional ethics and policy of Rwanda National Health Sector. The hospital is known as the unique referral Neuro-Psychiatric Hospital in the country (Fourth Health Sector Strategic Plan 2018-2024). Recent notable realizations include successful neurology and HIV services, improved management through procurement procedures, auditing and timely financial reporting, increase in staff-to-patients' ratio and high skills levels. It has two departments: Psychiatry and Neurology and it has two extensions: Psychiatric Centre located in Huye District, Southern Province and Icyizere Psychotherapeutic Centre, Kicukiro District in City of Kigali.

Established in 1968, the hospital is owned by the Congregation of the Brothers of Charity with the support of the Government of Rwanda. The Government of Rwanda provides regular personnel, especially medical staff and other health professionals, while the Congregation assures the management of the hospital and the availability of infrastructure, equipment, psychotropic drugs, somatic medicine and consumables.

1.2. Vision

We strive to be a regional leader in the field of neurology and mental health through provision of excellent healthcare services accessible to all, as well as a modern medical training.

1.3. Mission Statement

As a referral and teaching Hospital, the values underlining the mission of the hospital are inspired by the Christian vision of human beings: human dignity, justice, compassion and respect to all, especially the most vulnerable. The mission of the Hospital is to provide accessible specialized healthcare, to facilitate training, research and mentorship in mental health and neurology with reference to the National Health Policy.

1.4. Human Resource Service

1.4.1. Introduction

The Human Resource Service's main responsibility is assisting and dealing with all employees-related matters such as salary payments, statutory deductions declarations, recruitment and orientation process, capacity building, performance evaluation, labor law and labor relations, safety and risk compliance and administration policy and benefits, among others.

Human Resource Service is one of the services under the Administration and Finance Department. It contributes to the success of CARAES Ndera Neuro Psychiatric Hospital by recognizing the unique needs of employees, acting in the best interests of the hospital and the workforce; devoting to quality, excellence and continuous improvement, adhering to high professional standards of quality, competency and conduct, balancing requests to share information clearly and openly while respecting confidentiality of personal information.

The Human Resource Service works closely with other hospital departments to support and respond to employees' needs, namely; Department of Director General's Office, Department of Administration and Finance, Department of Education, Research, CPD and Quality Improvement, Department of Medical and Allied Health Sciences, Department of Mental Health, Department of Nursing, and the branches of CARAES Butare and Icyizere Psychotherapeutic Center.

CARAES Ndera staff members have varied backgrounds and are supported by a working environment that promotes teamwork at all levels in order to achieve the hospital's mission and vision as well as set goals. To promote employee' working capacity, skills and experience, the Human Resource Service ensures that employee performance evaluations are done on monthly basis. Through performance evaluation and employee work assessment, the HR Service, together with Quality Improvement Officer, identify employee need for capacity building through different workshops, trainings, online short courses and other means that can upgrade employee knowledge and skills.

Like other institutions, CARAES Ndera Hospital employees have been affected by the COVID-19 pandemic, where some employees tested positive and others were handling patients who tested positive for COVID-19; all this time the HR office made daily follow-ups to know how the positive employees were coping and ensured that those at work were being supported with all the needs facilitating the working environment. This pandemic

has also challenged the hospital in terms of workforce, with employees living far from the hospital unable to come to work or meeting transport-related difficulties.

1.4.2. Hospital staff

The Neuro-Psychiatric Hospital CARAES Ndera ends the financial year 2020/2021 with 325 employees, where 182 employees were Under Statute, 136 employees were Under Contract and 7 employees Under Contract in CDC-COAG Project.

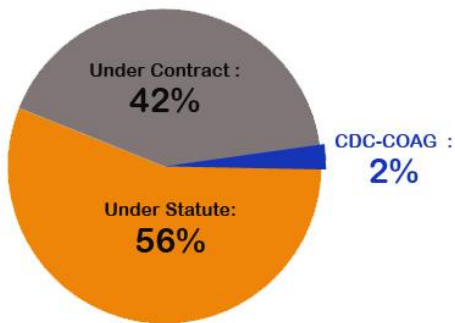


Figure 1: Hospital staff

1.4.2.1. Staff by Gender

As the financial year 2020/2021 ends, Neuro Psychiatric Hospital CARAES Ndera has 325 employees, among them 151 are female and 174 employees are male.

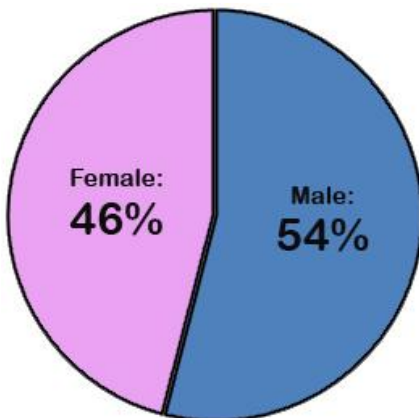


Figure 2: Staff by Gender

1.4.2.2. Staff per department

As it is in Official Gazette n° 47 of 21/11/2016, the hospital counts 6 employees in Director General's Office, 73 employees in Administration and Finance, 4 employees in Education, Research, CPD and Quality

Improvement, 35 employees in Medical and Allied Health Sciences, 120 employees in Nursing, 50 employees at CARAES Butare branch and 32 employees at Icyizere Psychotherapeutic Center branch.

1.4.3. Employee recruitment

The hospital recruited 48 employees during the course of this financial year 2020/2021 to strengthen the existing workforce and to cover the gaps, as 20 employees have left work due to contract termination, retirement, resignation and vocation mission. Among the new employees, 20 were for Nursing Department, 16 for Medical and Allied Health Sciences Department and 12 for Administration and Finance Department.

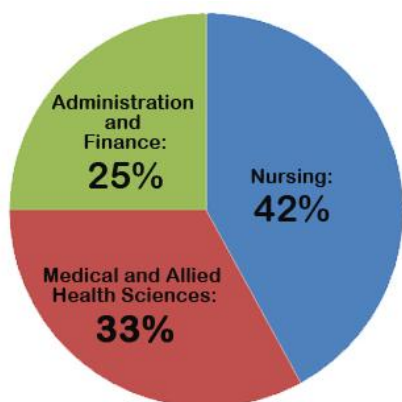


Figure 3: Employee recruitment

1.4.4. Employee turnover

During the course of this financial year 2020/20, 20 employees have left Neuro Psychiatric Hospital CARAES Ndera due to contract termination, retreat, voluntary dismissal and vocation mission.

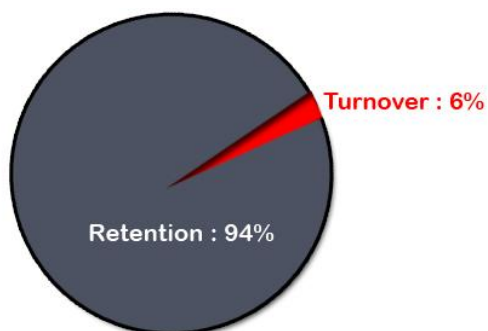


Figure 4: Employee Turnover

1.4.5. Employee capacity building

CARAES Ndera Hospital recognizes employee capacity building as the key area to promote employees' sense of ownership and empowerment by strengthening their knowledge, skills confidence and ability to perform their duties effectively at the right time in the right place.

The following is the list of employees and the training they attended.

No	Title of training	Participants	Number
1	Training on basics of M.H& Cleaning technique, de-escalation technique, fire fighting	Supportive staff(cleaners)	85
2	Training on basics of M.H& de-escalation technique, fire fighting	Nurses	20
4	Fire fighting	Staff& supportive staff	120
5	Fundamental of risk based auditing	Audit	1
6	Auditing human resources	HR staff	3
7	HIV & mental health integration	HC staff	60
8	Pharmaco vigilance&ADRS system	Pharmacy staff	1
9	Management of COVID-19	All	136
10	Triage management in psychiatry	Psychiatric wards	15
11	Training for CPD credits/ MOH	All clinical staff	online
12	Training for CPD credits offered by Coursera, RNMU, NCNM and other councils	All clinical staff	online
13	Strategic management plan	Responsible/ head of wards	22
14	Online courses on Covid-19 vaccination program	Nursing and Allied staff	17
15	Coursera online program	All	73

Table 1: Employee capacity building

1.4.6. Performance evaluation

In order for the hospital to assess employees' performance, appreciate their work, plan and prioritize training needs, it uses a monthly employee performance evaluation where each employee set goals to achieve within a month and at the end of the month, together with his/her immediate supervisor, assess the accomplishment of what has been set. The hospital has also a multidisciplinary team, which conducts a quarterly evaluation in hospital units, services and its branches, to evaluate the quality of service delivery, implementation of recommendations and advice for quality improvement.

1.4.5. Accomplishment

Human Resource Service has accomplished different activities during this year including migrating from the IPPIS Version 5 to SmartHr system to prepare and pay employee salaries, at the same time the hospital employees have filled their detailed personal information in SmartHr system.

1.4.6. Challenges

1. The hospital's organizational structure of 2016 has many errata, which obstructed the hospital from doing recruitments. In fact, the hospital needs 440 employees, while the 2016 structure provides 219 employees. Furthermore, the structure contains errata related to qualifications, such as "Mental Health Nurse A0", that are not available on the labour market in Rwanda, and mismatch of numbers of positions. These errata were presented to the Ministry of Health, and for that reason, the hospital in collaboration with the ministry have proposed a new organizational structure, which will fix the errata and enable the recruitment of employees, specifically medical doctors, nurses and administrative staff. The revised structure is currently awaiting its approval.
2. Shortage of specialist and medical doctors, which overloads the work of the present specialist and medical doctors

1.4.7. Human Resource Service Project for 2021/2022

1. The hospital to fully implement the new proposed organizational structure once it is approved
2. Putting more efforts into recruiting specialist and medical doctors
3. Strengthening employee development through capacity building and coaching

CHAPTER II: DETAILED DESCRIPTION OF THE INSTITUTION'S PERFORMANCE

2.1. Medical Department

2.1.1. Consultations

Consultations done at CARAES NDERA and its branches per Month, Year and Age categories, New and Old cases

Place of Care	NC	NDERA						BUTARE						ICYIZERE						TOTAL
		0-19		20-39		40+		0-19		20-39		40+		0-19		20-39		40+		
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
MON	AC																			
	OC																			
July	NC	76	29	85	73	59	64	9	4	15	14	2	12	8	8	26	13	11	7	515
	OC	671	324	1007	768	721	836	78	62	249	248	208	374	33	19	215	153	84	165	6,215
Aug	OC	55	34	58	48	43	56	4	3	24	15	9	7	4	4	28	17	5	16	430
	OC	682	331	946	743	711	820	77	79	245	310	208	403	25	23	218	152	103	176	6,252
Sept	NC	64	55	83	89	48	95	7	5	10	7	2	4	5	4	22	14	9	6	529
	OC	654	335	980	696	989	752	83	67	350	324	226	418	40	36	211	185	95	161	6,602
Oct	NC	80	41	111	40	61	43	10	5	10	7	2	3	10	5	26	22	12	6	494
	OC	697	349	996	738	754	903	85	80	370	364	301	372	44	31	252	174	113	190	6,813
Nov	NC	101	67	93	59	66	101	11	10	15	7	4	8	3	6	17	12	11	8	599
	OC	757	372	1005	755	685	779	81	79	349	328	248	373	37	28	225	176	110	158	6,545
Dec	NC	230	55	234	168	222	31	8	14	14	12	5	7	4	1	27	14	6	9	1,061
	OC	680	354	958	711	707	781	98	88	371	367	244	411	49	32	289	226	152	217	6,735
Jan	NC	80	50	92	72	60	76	8	6	22	15	8	7	9	2	4	7	3	3	524
	OC	552	328	852	689	556	781	71	67	307	305	205	354	12	19	145	112	73	198	5,626
Feb	NC	87	60	88	73	63	48	5	7	10	11	4	8	1	1	11	15	3	5	500
	OC	550	325	864	685	620	725	46	40	250	263	200	312	11	5	128	93	62	112	5,291
Marc	NC	78	60	70	77	50	49	10	8	12	19	6	10	1	3	7	11	3	2	476
	OC	428	225	456	542	523	521	41	25	250	241	105	228	13	8	130	92	65	114	4,007
April	NC	65	45	78	55	65	67	9	4	14	14	9	9	5	5	10	12	4	5	475
	OC	421	245	612	334	362	541	80	71	221	328	187	213	30	49	156	129	81	119	4,179
May	NC	80	47	95	59	47	63	3	8	12	7	4	14	21	7	11	14	13	12	517
	OC	402	301	628	419	428	612	68	55	208	305	189	329	26	32	180	168	85	145	4,580
June	NC	88	43	71	68	49	38	10	11	24	19	5	23	13	3	17	5	8	4	499
	OC	482	273	657	489	501	612	76	65	299	323	198	298	38	21	176	148	92	151	4,899
TOT		8,060	4,348	11,119	8,450	8,390	9,394	978	863	3,651	3,853	2,579	4,197	442	352	2,531	1,964	1,203	1,989	74,363

Table 2: Consultations done per month, year and age categories, new and old cases

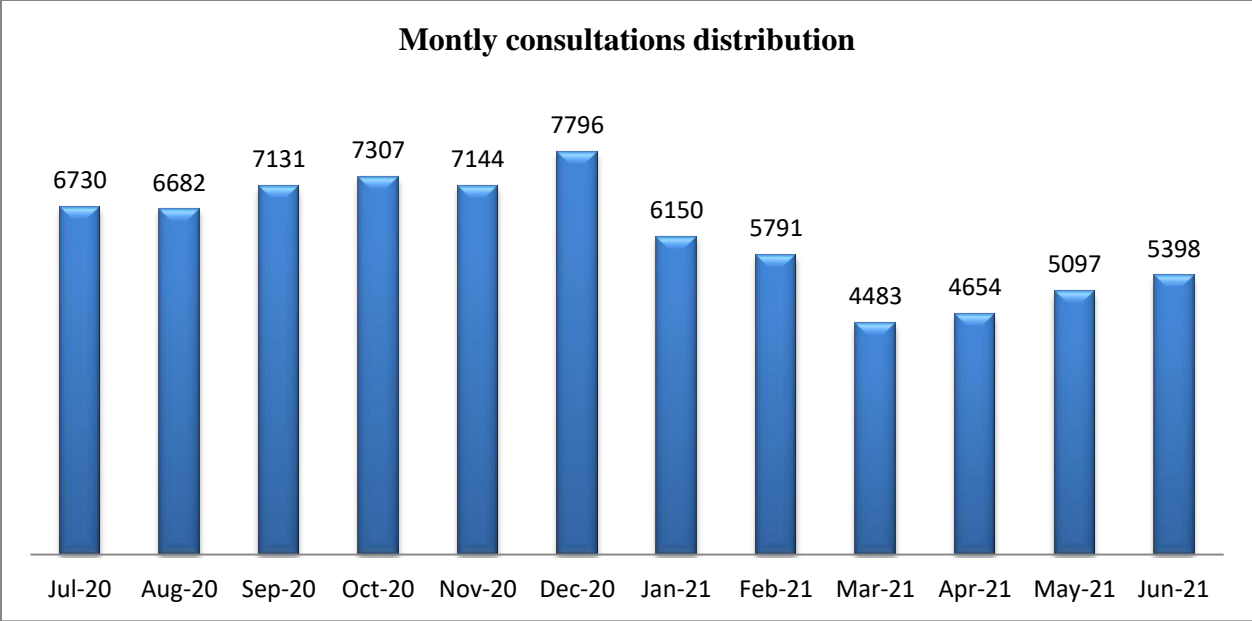


Figure 5: Monthly consultations distribution

The number of consultations increased from July to December 2020 and decreased from January to March, with a slight increase until June 2021. In general, the distribution of consultations was characterized either by an increase or a decrease; the probable cause is the pandemic of COVID-19 and lockdown that challenged the accessibility of healthcare.

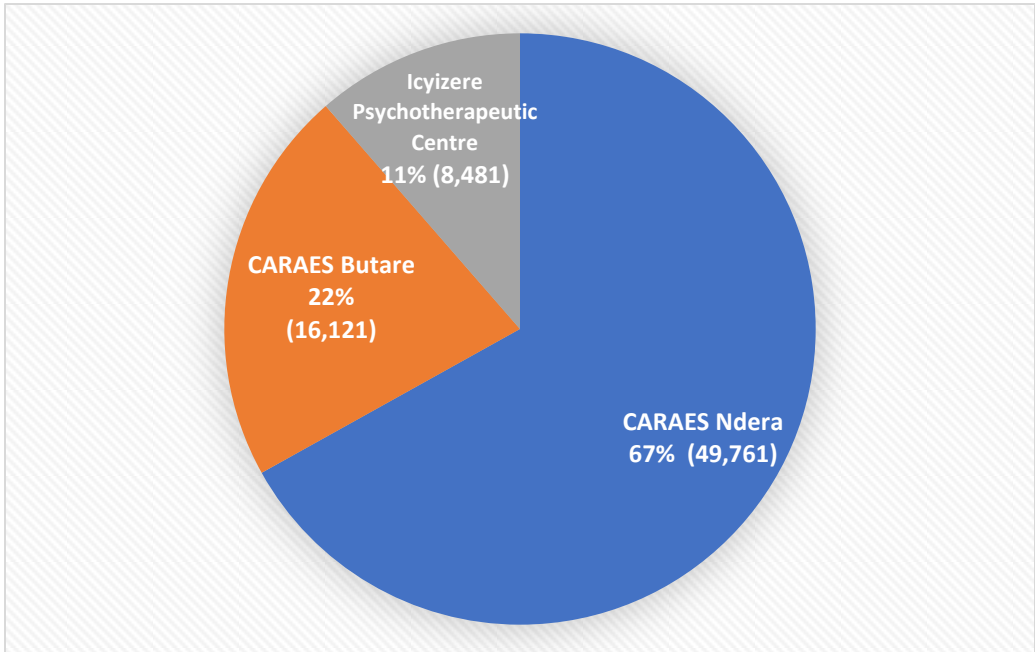


Figure 6: Consultations per branch

Overall, 74,363 patients (all ages), including new and old cases were consulted in the Neuro-Psychiatric Hospital CARAES Ndera. A total of 49,761 patients consulted CARAES Ndera, 16,121 patients CARAES Butare, and 8,481 patients went to Icyizere Psychotherapeutic Centre.

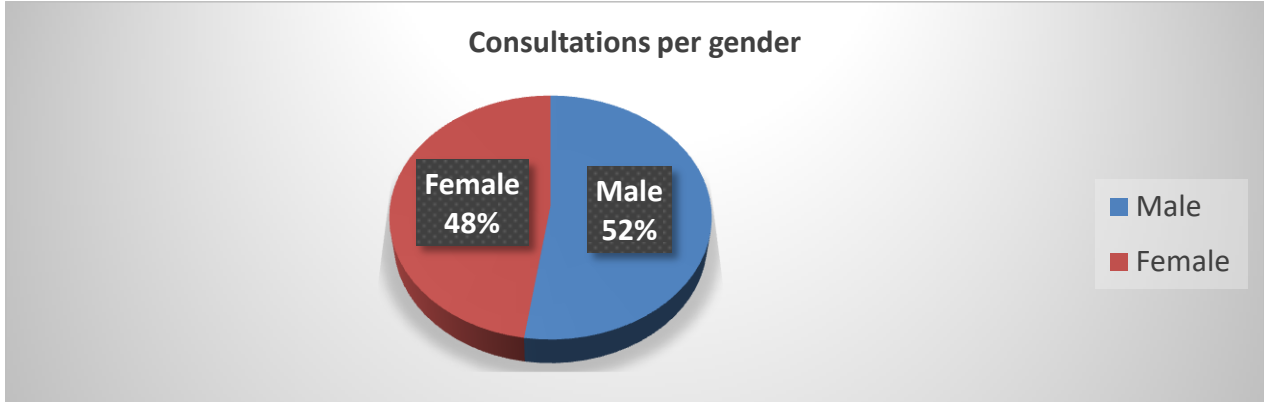


Figure 7: Consultations per gender

The graph shows that the proportion of male consultations is greater than female; males represent 52% (38,953) whereas females represent 48% (35,410).

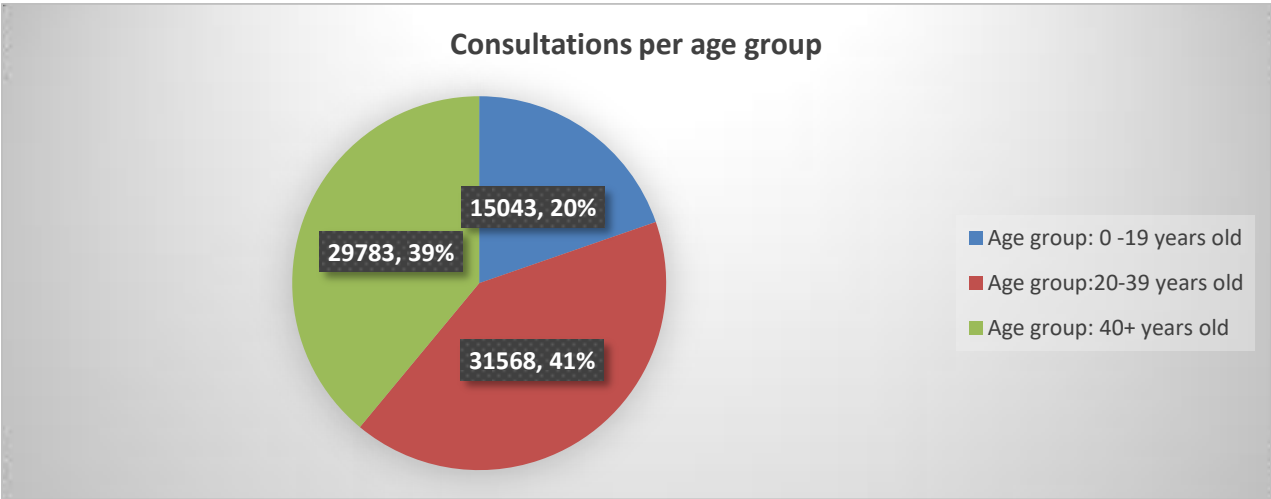


Figure 8: Consultations per age group

The majority of patients received were observed in the age group of 20-39 years old with 41%, the second age group of 40 years and over represents 39% while the last age group of 0-19 years old represents 20%.

2.1.1.1. Consultations by provenance

The number of patients consulted per provinces

Provenance	CARAES Ndera	CARAES Butare	Icyizere Center	Total
City of Kigali	26,025	121	7,726	33,872
Northern Province	4,664	825	213	5702
Western Province	4,324	4,216	171	8,711
Eastern Province	7,502	4,509	150	12,161
Southern Province	6,147	6,450	186	12,783
Foreigners	3	0	35	38
Non specified	1,096	0	0	1,096
Total	49,761	16,121	8,481	74,363

Table 3: Number of patients consulted per provinces

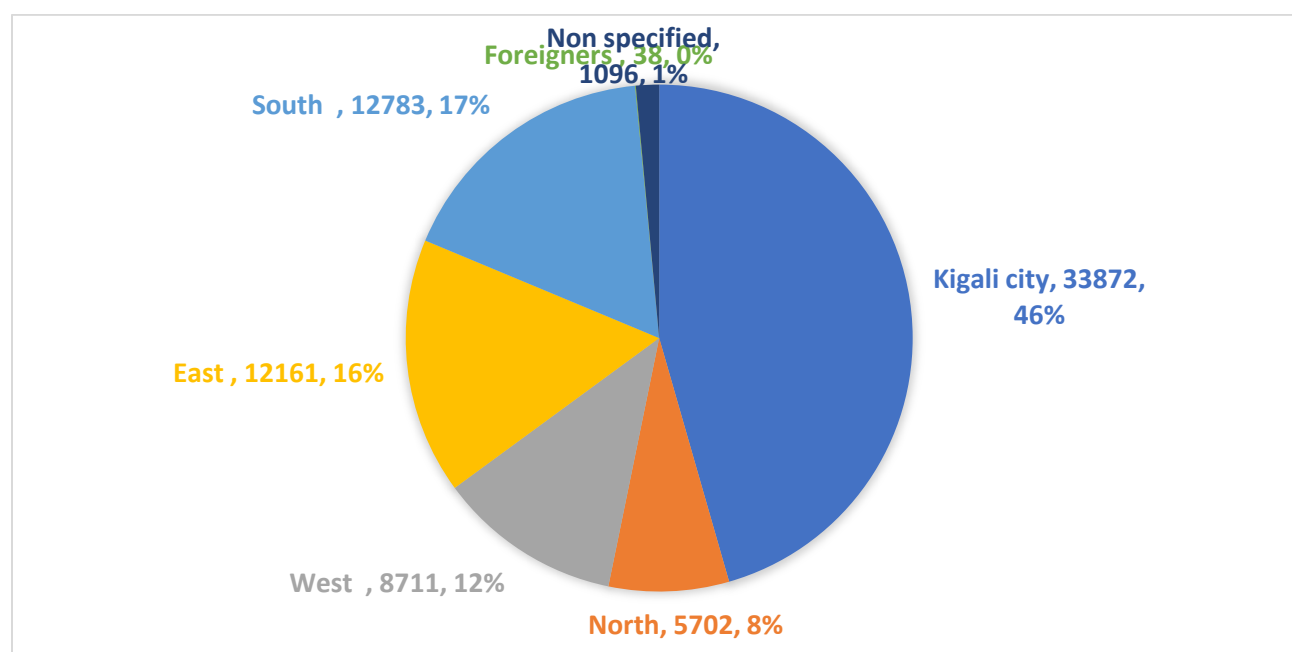


Figure 9: Number of patients consulted per provinces

The majority of patients consulted came from the City of Kigali (46%), Southern Province—where CARAES Butare is located (17%), and the Eastern Province (16%).

2.1.2 Hospitalization

Hospitalization is the fact of admitting a patient with a serious problem in a hospital to be able to continue their care and have a regular follow-up by a caregiver during a given period until they are discharged.

2.1.2.1. Bed capacity

Services	Patients in crises ward	Patients in improved ward	Total
Males (Ward A&B)	57	40	97
Females (Ward C& D	67	40	107
VIP Service	8	-	8
Children and adolescents (Centre Kundwa)	18	-	18
Neurology	-	24	24
Home St Jules	-	19	19
CARAES Butare	59	43	102
Icyizere P. Center	-	29	29
Total			404

Table 4: Bed capacity

Neuro-Psychiatric Hospital CARAES Ndera has a capacity of 404 beds, including 102 beds in CARAES Butare and 29 beds in Icyizere Psychotherapeutic Centre. In the fiscal year 2020/2021, the bed occupation rate (Tx) reached **105.6%**. (Calculated by applying this formula: **Tx = Effective nights x 100 / Number of beds x Number of days of year.** Tx=155697*100/404*365= **105.6%**)

2.1.2.2. Admissions

The table below shows hospitalization frequencies per months and hospital services

Place of Care/month	CARAES Ndera					CARAES Butare		Centre Icyizere		TOTAL
	M	F	C	HSJ	Neurology	M	F	M	F	
July	141	95	13	13	24	45	30	12	10	383
August	100	63	9	13	9	24	28	6	9	261
September	120	72	16	13	20	32	48	8	15	344
October	159	123	14	13	18	42	38	13	7	427
November	131	106	11	13	14	35	36	11	10	367
December	142	121	15	13	12	41	39	8	13	404
January	154	87	8	13	19	29	20	13	10	353
February	106	110	12	13	12	40	35	12	9	349
March	114	122	11	13	19	28	10	11	12	340
April	216	142	12	13	19	29	31	10	8	480
May	186	114	23	13	14	35	33	9	10	437
June	170	167	22	13	14	13	11	44	40	494
TOT	1,739	1,322	166	156	194	393	359	157	153	4,639

Table 5: Hospitalization frequencies per months and hospital services

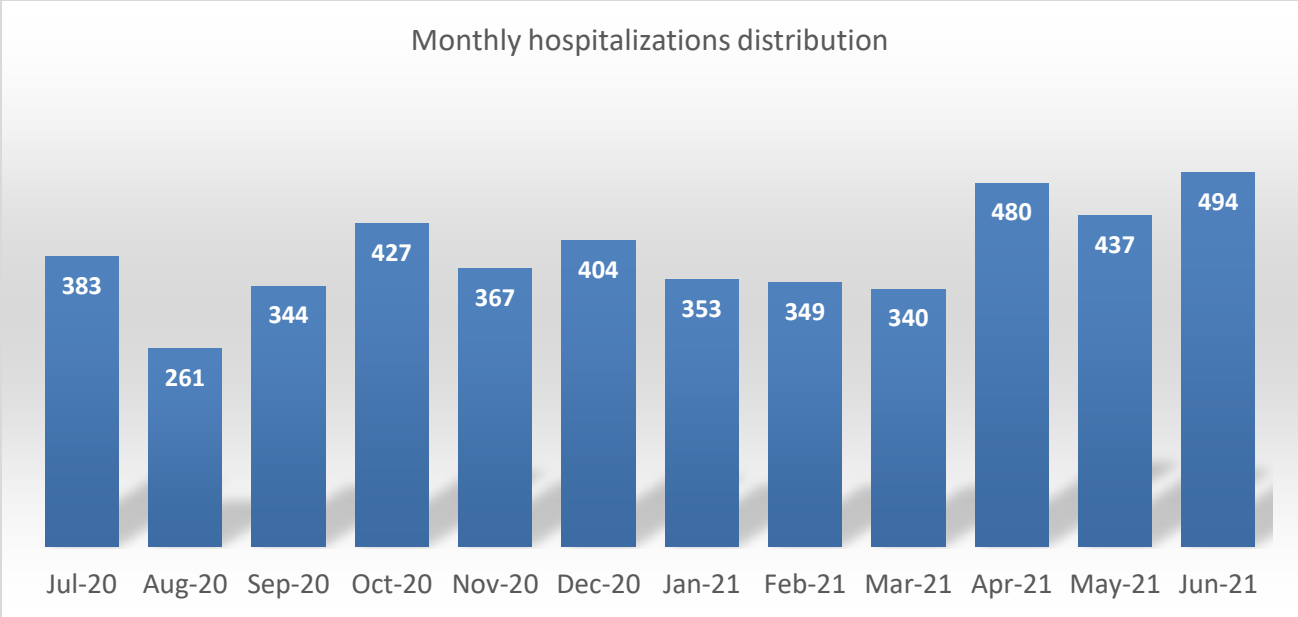


Table 6: Monthly hospitalizations distribution

COVID-19 pandemic and lockdown have disturbed the accessibility to mental healthcare; as the graph shows, the admissions (hospitalization) have been observed to be decreased particularly during periods of lockdown and increased after lockdown.

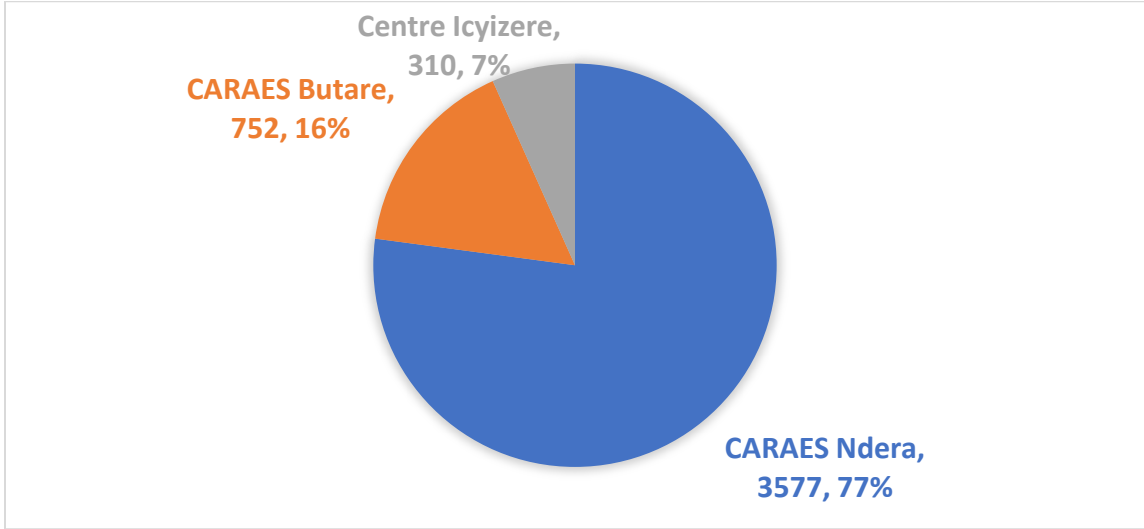


Figure 10: hospitalization per branch

Overall, 4,639 patients (all ages), including new and old cases were hospitalized in the Neuro-Psychiatric Hospital CARAES Ndera. A total of 3,577 (77%) patients were hospitalized in CARAES Ndera, 752(16%) patients in CARAES Butare, and 310 (7%) patients in Icyizere Centre.

2.1.2.3. Night effectives

Month	CK	Neurology	VIP	Salle A	Salle D	Salle B	Salle C	Centre Icyizere	CARAES Butare	H. St Jules
Jul-20	333	311	53	2,921	2,197	1,493	1,190	2025	3,660	403
Aug-20	335	207	62	2,629	1,923	1,257	951		3,682	403
Sep-20	434	231	40	2,370	1,720	1,141	907		3,205	390
Oct-20	446	191	48	2,930	2,073	1,553	1,209	1743	3,551	403
Nov-20	542	111	0	2,768	2,157	1,089	1,155		3,914	390
Dec-20	492	241	0	2,530	2,332	1,273	1,263		4,049	403
Jan-21	403	219	0	2,314	2,148	1,422	1,360	2000	3,964	403
Feb-21	379	243	45	2,365	2,305	1,118	1,084		4,068	364
Mar-21	341	218	134	2,919	2,462	1,305	1,016		3,763	403
Apr-21	301	380	194	2,987	2,368	1,566	1,355	2041	2,810	390
May-21	415	250	155	3,220	2,493	1,661	1,308		3,524	403
Jun-21	338	273	181	3,182	2,342	1,555	1,217		4,304	390
Total	4,759	2,875	912	33,135	26,520	16,433	14,015	7,809	44,494	4,745
G/Total	155,697									

Table 7: Night effectives

2.1.2.4. Length of stay

For the FY 2020/2021, the average of the patient's **length of stay** in hospitalization is 33 days (calculated by applying this formula: Total **Effective nights-Effective nights for Home Saint Jules / Number of admissions; Length of stay** = $155697-4745/4639= 33\text{days}$). Being a referral hospital in mental health, the average length of stay in our hospital is a bit longer due to the chronic pathologies referred by other hospitals.

2.1.2.5. Official discharges

Hospital discharge is defined as the formal release of a hospitalized individual due to conclusion of the hospitalization stay, either by death, recovery, or transfer to another institution.

The table below shows the number of patients discharged during 2020/2021.

Place of Care/month	CARAES Ndera					CARAES Butare	Centre Icyizere	Total
	M	F	C	HSJ (M+F)	Neurology (M+F+E)	(M+ F)	(M+ F)	
July	82	40	16	0	21	71	15	245
Aug.	78	35	14	0	19	68	13	227
Sep.	103	44	9	0	15	84	24	279
Oct.	161	67	11	0	16	54	13	322
Nov.	97	60	4	0	10	57	16	244
Dec.	94	71	8	0	12	49	14	248
Jan.	86	35	7	0	11	40	18	197
Feb.	88	41	9	0	13	45	15	211
Mar.	64	64	13	0	10	79	20	250
April	116	88	12	0	19	52	14	301
May	71	67	19	0	15	37	14	223
June	64	93	20	0	16	63	21	277
Total	1,104	705	142	0	177	699	197	3,024

Table 8: Number of patients discharged during 2020/2021

Specifically, 3,024 patients were officially discharged by the hospital during the year 2020/2021.

2.1.2.6. Abandoned care (Non official discharge)

Due to the status of mental illness, some patients escape the hospital, either by climbing on the roof of the hospital or by hiding during the occupational therapy activities, which are sometimes done outside the hospitalization units. A few go out at their will to have treatment elsewhere. The hospital documented 146 patients who left the treatment without the doctor's advice.

2.1.2.7. Transfers from or to district, referral and teaching hospitals

Patient transfer's orientation to Neuro-Psychiatric Hospital CARAES Ndera has been done in two steps; either patient transferred by referral hospital to Ndera or patient initially hospitalized at Ndera then transferred to another referral hospital for suitable care. Some 1,523 patients were referred by district, referral and teaching hospitals, while the Neuropsychiatric Hospital CARAES Ndera has transferred 1,263 to district, referral and teaching hospitals for further treatments.

2.1.2.8. Patients accompanied by the Police

Some of the patients have been found on the road by police, and the police bring them to Neuro-Psychiatric Hospital for their security and treatment. Some of them have no social assistance because they were wandering mentally ill persons. During the year 2020/2021, a total number of 136 patients were brought by the police.

2.1.2.9. Death

During the year 2020/2021 the hospital recorded 7 deaths: 5 in psychiatry department and 2 in neurology.

2.1.2.10. Comparison of activities in 5 years

Activities	2016	2017	2018	2019	2020/2021
Consultations	60,232	70,444	69,888	73,675	74,363
Hospitalizations	4,707	5,003	5,329	5,364	4,736

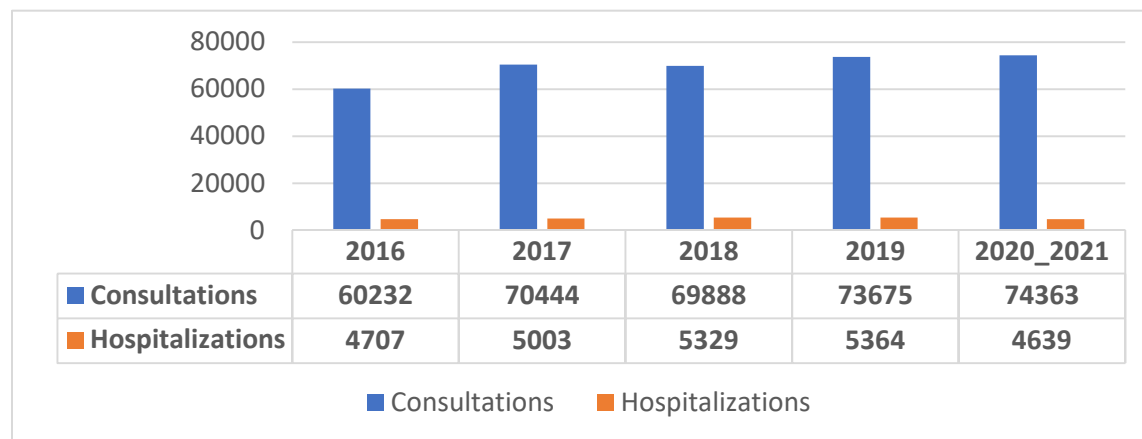


Figure 11: Comparison of activities in 5 years

The number of patients in outpatients' consultation has been increasing over the last five years whereas hospitalizations has been increasing only over the last four years and decreased in the year 2020/2021 probably due to outreach activities.

2.1.3. Diagnostics

As the hospital provides care in neurology and psychiatry, the following statistics show the pathologies that make patients come to consult the Neuro-Psychiatric Hospital CARAES Ndera.

2.1.3.1. Diagnostics in psychiatric outpatient's department

N ⁰	Pathologies/Age	0-19 years	20-39 year	40 and above	Total	%
F00-F09	Organic, including symptomatic, mental disorders	7	20	254	281	0.56%
F10	Mental and behavioral disorders due to use of alcohol	26	227	69	322	0.64%
F14	Mental and behavioral disorders due to use of cocaine	0	3	0	3	0.01%
F12	Mental and behavioral disorders due to use of cannabinoids	46	321	6	373	0.74%
F10-F19	Mental and behavioral disorders due other psychoactive substances	14	163	27	204	0.41%
F20	Schizophrenia	5,968	11,095	10,411	27,474	54.64%
F23	Acute and transient psychotic disorders	1,210	2,934	2,090	6,234	12.40%
F20-F28	Other psychotic disorders (Other Psychological problems)	22	352	356	730	1.45%
F32	Depression	89	762	892	1743	3.47%
F30	Mania	37	202	144	383	0.76%
F31	Bipolar disorders	1,241	2,470	1,795	5,506	10.95%
F30-F39	Other mood disorders	1	21	13	35	0.07%
F45	Somatoform disorders	1,231	1,495	1,938	4,664	9.28%
F43.1	Post-Traumatic Stress Disease (PTSD)	6	42	128	176	0.35%
F40-F48	Other Neurotic disorders (Neurological problems)	19	84	69	172	0.34%
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors	12	28	9	49	0.10%
F60-F69	Disorders of adult personality and behavior	3	1	1	5	0.01%
F70-F79	Mental retardation	53	24	6	83	0.17%
F80-F89	Disorders of psychological development	23	0	0	23	0.05%
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence	64	17	1	82	0.16%
F99-F99	Unspecified mental disorder	465	651	587	1,703	3.39%

NCD'S	2	5	18	25	0.05%
Other comorbidities	0	3	6	9	0.02%
Total	10,539	20,920	18,820	50,279	100.00%

Table 9: Diagnostics in psychiatric outpatient's department

The top five causes of outpatient consultations in the psychiatric department are:

1. Schizophrenia (54.64%)
2. Acute and transient psychotic disorder (12.39%)
3. Bipolar disorder (10.95%)
4. Somatoforms (9.28%)
5. Depression disorder (3.47%)

2.1.3.2. Diagnostics in neurology outpatient department

No	Pathologies/Age	0-19 years	20-39 year	40 and above	Total	%
G10-G14	Systemic atrophies primarily affecting the central nervous system	3	3	4	10	0.06%
G30-G32	Other degenerative diseases of the nervous system	1	1	45	47	0.28%
G20	Parkinson disease	190	316	378	884	5.26%
G20-G26	Other Extra pyramidal and movement disorders	8	4	34	46	0.27%
G35-G37	Demyelinating diseases of the central nervous system	0	1	1	2	0.01%
G40	Epilepsy	3,661	4,214	2,393	10,268	61.04%
G41	Status epilepticus	14	7	8	29	0.17%
G43	Migraine	427	484	468	1,379	8.20%
G44	Other headache syndromes	1,195	1,301	1320	3,816	22.69%
G45	Transient cerebral ischemic attacks and related syndromes	0	1	1	2	0.01%
G46	Vascular syndromes of brain in cerebrovascular diseases	0	1	5	6	0.04%

G47	Sleep disorders	6	9	12	27	0.16%
G50- G59	Nerve, nerve root and plexus disorders	0	4	5	9	0.05%
G60- G64	Polyneuropathies and other disorders of the peripheral nervous system	0	2	3	5	0.03%
G70- G73	Diseases of myoneural junction and muscle	4	1	1	6	0.04%
G80- G83	Cerebral palsy and other paralytic syndromes	9	0	1	10	0.06%
G90- G99	Other disorders of the nervous system	79	87	94	260	1.55%
NCD'S		3	3	7	13	0.08%
Other comorbidities		0	0	2	2	0.01%
Total		5,600	6,439	4,782	16,821	100.00%

Table 10: Diagnostics in neurology outpatient department

In the neurology department, the following are top four causes of outpatient's consultations:

1. Epilepsy (61.04%).
2. Headaches syndrome (22.68%)
3. Migraine (8.20%).
4. Parkinson disease (5.25%)

2.1.3.3. Causes of hospitalization in psychiatry department

No	Pathologies/Age	0-19 years	20-39 year	40 and above	Total	%
F00- F09	Organic, including symptomatic, mental disorders	4	0	2	6	0.12%
F10	Mental and behavioral disorders due to use of alcohol	7	48	13	68	1.41%
F14	Mental and behavioral disorders due to use of cocaine	0	2	1	3	0.06%
F12	Mental and behavioral disorders due to use of cannabinoids	13	116	5	134	2.78%
F10- F19	Mental and behavioral disorders due other psychoactive substances	7	166	36	209	4.34%
F20	Schizophrenia	44	1,207	670	1,921	39.88%
F23	Acute and transient psychotic disorders	108	780	242	1,130	23.46%
F20- F28	Other psychotic disorders (Other Psychological problems)	11	108	57	176	3.65%

F32	Depression	26	76	34	136	2.82%
F30	Mania	13	114	24	151	3.13%
F31	Bipolar disorders	55	399	128	582	12.08%
F30- F39	Other mood disorders	0	3	6	9	0.19%
F45	Somatoform disorders	49	19	14	82	1.70%
F43.1	Post-Traumatic Stress Disease (PTSD)	0	8	9	17	0.35%
F40- F48	Other Neurotic disorders (Neurological problems)	0	1	1	2	0.04%
F50- F59	Behavioral syndromes associated with physiological disturbances and physical factors	0	1	1	2	0.04%
F60- F69	Disorders of adult personality and behavior	0	1	0	1	0.02%
F70- F79	Mental retardation	22	4	0	26	0.54%
F80- F89	Disorders of psychological development	3	0	0	3	0.06%
F90- F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence	36	1	0	37	0.77%
F99- F99	Unspecified mental disorder	15	85	22	122	2.53%
Total		413	3,139	1,265	4,817	100

Table 11: Causes of hospitalization in psychiatry department

The top five causes of inpatients hospitalization in the psychiatric department are:

1. Schizophrenia (**39.88%**)
2. Acute and transient psychotic disorders (**23.46%**)
3. Bipolar disorders (**12.08%**)
4. Mental and behavioral disorders due other psychoactive substances (**4.34%**)
5. Other psychotic disorders (**3.65%**)

2.1.3.4. Causes of hospitalization in neurology department

No	Pathologies/Age	0-19 years	20-39 year	40 and above	Total	%
G10- G14	Systemic atrophies primarily affecting the central nervous system	0	0	2	2	0.55%
G30- G32	Other degenerative diseases of the nervous system	2	2	3	7	1.92%
G20	Parkinson disease	0	2	8	10	2.75%
G20-	Other Extrapyrarnidal and	2	3	0	5	1.37%

G26	movement disorders					
G35- G37	Demyelinating diseases of the central nervous system	0	0	0	0	0%
G40	Epilepsy	117	102	34	253	69.50%
G41	Status epilepticus	0	1	0	1	0.27%
G43	Migraine	0	5	1	6	1.65%
G44	Other headache syndromes	4	14	4	22	6.04%
G45	Transient cerebral ischemic attacks and related syndromes	0	2	4	6	1.65%
G46	Vascular syndromes of brain in cerebrovascular diseases	0	0	1	1	0.27%
G47	Sleep disorders	0	0	0	0	0%
G50- G59	Nerve, nerve root and plexus disorders	0	4	0	4	1.10%
G60- G64	Polyneuropathies and other disorders of the peripheral nervous system	0	6	7	13	3.57%
G70- G73	Diseases of myoneural junction and muscle	0	2	0	2	0.55%
G80- G83	Cerebral palsy and other paralytic syndromes	0	0	2	2	0.55%
G90- G99	Other disorders of the nervous system	8	12	10	30	8.24%
Total		133	155	76	364	100

Table 12: Causes of hospitalization in neurology department

In the neurology department, the following are top five causes of inpatient hospitalization:

1. Epilepsy (**69.50%**)
2. Other disorders of the nervous system (**8.24%**)
3. Other headache syndromes (**6.04%**)
4. Polyneuropathies and other disorders of the peripheral nervous system (**3.57%**)
5. Parkinson disease (**2.75%**)

2.2.9. Activities against COVID-19 pandemic

Since the occurrence of Coronavirus Disease (COVID-19) in Rwanda, some efforts have been done to fight against the pandemic, namely:

- ✓ Screening of all hospital customers (internal and external) like COVID-19 test for all patients before and after hospitalization, screening of employees before starting work.
- ✓ Sensitization of customers in order to increase their awareness on COVID-19 preventive measures.
- ✓ Establishment of isolation room for management of COVID-19 cases.
- ✓ Training of hospital staff in IPC measures regarding to COVID-19.
- ✓ Exchange up-to-date information on the status and protocols of the pandemic.
- ✓ Perform nursing care in isolation room.

All clients who tested COVID-19 positive have moderated symptoms; all were managed and returned to normal life (no reported death cases at the hospital).

All staff positive cases of COVID-19 have been followed with better outcome in community based care.

a. COVID- 19 vaccination campaign

From month of February our country began preparation to receive COVID-19 vaccines against Covid-19 pandemic. Rwanda Biomedical Center (RBC), specifically the Vaccination Division, trained medical and nursing staff involved in vaccination campaign. Nurses have been trained and obtained online Certificate on COVID-19 vaccines, became trainers of the group of the hospital and also provided vaccines.

About 416 staff members in two phases from 5th - 6th March 2021, and 2nd -3rd April 2021 were vaccinated against Coronavirus at Neuro-Psychiatric Hospital CARAES Ndera, which includes all hospital staff who were eligible for the vaccines. (Medical, nurses, paramedical and supporting staff, it is also worth mentioning that at the national level, those nurses have contributed to provide the vaccines at the various sites in Kigali).

In our hospital, 147 patients tested positive for COVID-19 and were managed and recovered.

Sixty (60) hospital staff members have been identified COVID-19 positive, they were managed in home based care and recovered.

2.2. Nursing Department

The year 2020/2021 was mostly marked by many activities against COVID-19 pandemic. Other nursing care as well as mental health and somatic care have been continued as usual.

Nurses were involved in many activities such as participation in:

2.2.1. Coaching of nurses

It is a process aimed at exerting a positive influence to improve the behaviour or performance of a person. Neuro-Psychiatric Hospital CARAES Ndera has initiated the coaching system for nurses from 2014, the hospital and its branches count 9 nurse assistant coaches and the coach coordinator. Every ward in the hospital has a nominated coach who works actively in a supportive manner for nurses' on-job learning for a better quality service delivery.

The coaching activities resulted in:

- ✓ Fuller use of individual's talents/potential
- ✓ Commitment to individuals and their performance
- ✓ Higher organizational performance/productivity/quality/call handle time
- ✓ Increased creativity/learning/knowledge
- ✓ Increased morale

2.2.3. Colloquium

Colloquium is a multidisciplinary team (doctor, nurses, psychologist, social worker, occupational therapist and physiotherapist) meeting with aim of having common understanding by every team member on patient's background, diagnosis, treatment. It is performed in all hospital services each Monday afternoon. Discussion varies between 8 and 18 patients.

2.2.4. Medical round for hospitalized patients

Medical rounds are a way of sharing important information about a patient's medical condition with the members of the healthcare team who are responsible for the patient's care.

During rounds, we examine the patient's medical problems, treatment plan and response to treatments (lab request and results interpretation, medication adaptation, and side effects management, decision for discharge or transfer. Ideal frequency for every patient is once a week, emergency cases are attended to accordingly.

2.2.5. Patient group therapy

It is an organized group that gathers patients with psychiatric conditions and multidisciplinary team. It has a topic, timeline, rules, and moderator. Every participant has right to give his or her opinion related to the topic. It is done from Monday to Friday from 9h00 to 9h45, except Thursdays. It helps on evaluation of mental state, evolution of illness and health education (communication for behavior change).

These mentioned nursing activities are summarized in table below:

Service	Medical round	Patient group	Colloquium
WA	147	100	30
WB	142	147	42
WC	144	151	48
WD	148	112	35
CK	180	181	47
Neurology	149	-	45
Total	910	691	247

Table 13: Nursing activities

The table above shows that 910 of medical round have been performed for in patients. The big number of medical round executed was observed in Centre Kundwa. Each patient hospitalized is visited by medical staff at least three times a week during medical rounds but when a patient presents any particularity condition is visited on daily basis at any time.

The patient groups performed are 691 in total. Each hospital service organize patient group at least 4 days a week. The high number of patient groups performed is observed at Centre Kundwa.

Colloquium or multidisciplinary teams performed in hospital wards/services are 247 in total. The colloquium is planned and executed at least one time a week to discuss on patients health condition and evolution. The high number of colloquium performed is observed in Ward C.

2.2.6. Interviews

The psychiatric interview refers to the set of tools that a mental health providers use in order to know patient's illness information (background, chief complaint, mental state, disease and personal history) and providing psycho education. It involves patient, family member or both.

Every patient/family member in psychiatric settings underwent interview (data collection and psycho education). It is done during admission, hospitalization, at family member visit and before discharge.

2.2.7. Nursing Care (Vital signs, wound dressing, Drug administration, Patient hygiene)

2.2.7.1. Vital signs

Vital signs give a baseline if patient is healthy or not. Abnormalities in vitals can also be a clue to illness or disease that can be hurting the organ systems in the patient's body. It allows medical professionals to assess wellbeing of patient.

Those vital signs are the following:

- Body temperature
- Pulse rate
- Respiration rate (rate of breathing)
- Blood pressure

In our hospital vital signs are taken on the basis of once a day, for patient with particularities are taken three times a day.

2.2.7.2. Wound Dressing

A wound is any damage or break in the surface of the skin. Wounds can be; accidental, burns, abrasions, skin tears and surgical. A wound dressing is anything that is used in direct contact with a wound to help its healing and prevent further infection or complications. Different wound dressings are used based on the type of the wound, but they all aim to heal and cure the wound.

The frequency, types of wound dressing, materials to be used depend on the type of wound.

2.2.7.3. Drug administration

It refers to the route that medication takes to enter in patient's body. The medicine can come in many different forms, and the method of administration differs depending on this, the illness and the patient's needs.

The drug administration we usually use is IM (Intramuscular), oral, Intravenous, mucus, Intrarectal and cutaneous routes, frequency depends on medical prescription.

2.2.7.4. Patient hygiene

Good hygiene in hospitals plays a vital role in ensuring that patients do not catch dangerous infections and diseases, while also ensuring that germs and bacteria do not spread to visitors and out into the general community.

Basic hygiene care performed in our hospital for patient includes oral hygiene, bathing, eliminating 'shaving, brushing, clothing, bed making and cutting hair and nails. These are vital to maintaining the patient's health and are done every day and according to the patient in need.

2.2.8. Health education in hospitalization

It is done during group patient according to the situation, for example topic related to the international days (eg: world suicidal prevention day: we talk about suicide, international mental health day...), planed calendar like HIV/AIDS, chosen topic during patient group.

2.2.9. Home Saint Jules

Home Saint Jules is a residence for the chronic mental patients of the Neuro-Psychiatric Hospital CARAES Ndera, established with the aim of integration and a social rehabilitation of the patients following various situations preventing them from immediate return in their respective families, or patients who have lost some superior ability due to their mental illness.

Home Saint Jules has a capacity of 20 beds. At the end of the fiscal year 2020/2021, the hostels had 13 patients and the majority of them are above 45 years old. The service has 7 members of staff: 2 nurses, 1 social worker, 4 support workers and a night guard.

The activities at Home Saint Jules can be summarized as follows:

- Providing residents with bio-psychosocial service such as regular medication, psycho-educational sessions, social assistance and prepare family reunification when possible.
- Helping the patients to take some responsibilities even if they have psychological, physical and / or moral difficulties.
- Helping them to take care of their body and cloths.
- Stimulating them through occupational therapy, discussion groups (during patients groups), relaxation, agriculture, livestock and assist them in household activities.
- Helping resident patients get their basic needs.

2.2.10. HIV Service

In Rwanda, a pilot program was initiated at Neuropsychiatric Hospital CARAES Ndera, where integration of mental health and HIV service has been highlighted as a strategy to improve and ensure prevention, treatment, care and support of people with both HIV and mental problems. Normally, HIV-MH service is concerned with the patients with comorbidities HIV and mental disorders that are followed by the hospital on a daily basis. In fact, in the service, there is a social worker and mental health nurses, psychologist and a medical doctor who are working together on a daily basis in providing holistic care to those suffering from comorbidity of HIV and psychiatric conditions, according to protocol and National guidelines 2018 and other update guidelines from Rwanda Biomedical Centre (RBC). Furthermore, there are service entry point such as hospitalization unit, outpatient department (OPD), clients with other neurological conditions and transfer from other health facilities. The total number of clients enrolled includes those transferred elsewhere, deceased, lost to follow up and current or active patients; the follow up is done through medical consultation, pharmacy visit, group support, home visit, and individual counselling if need be. In addition, the service has different activities such as PIT, Counselling and HIV testing, linkage to care and treatment, enrolment (psychosocial and medical enrolment), support group, home visit, biological and physical exam and follow up, adherence assessment and drug initiation, medical and psychosocial follow up, pharmacy dispensary, appointment management and STIs and OIs screening and follow up. The hospital did mentorship, training, case sharing and client association visits in order to strengthen HIV/ Mental health integration at district hospitals level.

2.2.10.1. Achievements

Through HIV/MH service, the Neuro-Psychiatric Hospital CARAES Ndera performed the following activities:

- 790 Clients counselled and tested for HIV through HTC
- 10 Clients tested HIV positive through HTC including 7 male and 3 female
- 10 HIV positive clients linked to care and treatment
- 2 Couples counselled and tested for HIV through HTC
- 72 support groups of the patients
- 17 Home visits
- 8 Clients at risk of HIV infection as a result of occupational who received PEP
- 136 clients initiated TB preventative therapy
- 10 Total number of clients initiated on ART
- 10 Total number of clients with recent HIV infection among initiated on ART
- 10 clients with recent HIV infection among initiated on ART
- 141 clients on ART in service
- 133 Patients on 1st line regimen
- 8 Patients on 2nd line regimen
- 1,316 Clients received screening and counselling on STI; 8 among of them confirmed positive for STIs and treated.

2.2.10.2. Mentorship on HIV/MH integration in district hospitals

From 1st March to 18th June 2021, 30 District Hospitals were mentored (2 days for each hospital). Those hospitals are Muhima, Kibagabaga, Masaka, Nyamata, Kibungo, Rwamagana, Gahini, Kiziguro, Ngarama, Nyagatare, Rutongo, Kinihira, Byumba, Remera Rukoma, Kabgayi, Ruhango, Kaduha, Gitwe, Kirinda, Munini, Kigeme, Gisenyi, Shyira, Kabaya, Muhororo, Murunda, Kibuye, Mugonero, Kibogora, and Bushenge.

Teams of mentors were composed by 1 medical doctor (General Practitioner, Psychiatrist or Neurologist) and two mental health nurses.

2.2.10.3. Positive findings

The mentorship has found some positive achievements from which mentors have provided additional guidance:

- 1) Collaboration of both services is at high level in the majority of hospitals. Mentors have however stressed on the necessity to organize case sharing multidisciplinary meetings depending on clinical cases to discuss.
- 2) HIV staff members continue to follow up on their patients even after transfer in order to know their evolution on MH aspect. Mentors have however asked HIV staff to minimize transfers rather to manage mental health problems in the limits of their capacities, and sometimes to call mental health professionals for some patients who could be stigmatized by being sent in MH unit. This is done in some hospitals.
- 3) MH staff members are skilled on HIV testing in all hospitals except newly recruited staff. Mentors introduced the technique of testing as well as other theoretical knowledge on HIV/MH Integration to new hired staff.
- 4) In the majority of hospitals, they give testimony that HIV/MH Integration has brought tremendous good results as regards the adherence to treatment for HIV patients.

2.2.10.4. Negative findings or issues

Without mentioning hospitals, following issues are common in a big number of hospitals:

1. A shortage of staff in both services in some hospitals (MH and HIV services) disproportionate to a high number of patients hinders an efficient implementation of the program (e.g. HIV nurse who struggles to manage complicated mental problems because a mental health specialist is not available). NB. The shortage of staff is sometimes created by the staff turnover.
2. Poor documentation of interventions done because of lack of time.
3. Far separate services (HIV and MHI) such that internal transfers or direct collaboration between both services are not easy.
4. Multidisciplinary meetings to discuss clinical cases are not held because it is not easy to have time

5. Prevention measures (Education on MH for HIV patients, education on HIV, testing HIV, using pre-exposure prophylaxis and teaching on use of condoms for patients with risk behaviours in MH service) are not well structured.

a. A common challenge encountered in all hospitals that does not allow an efficient adherence on MH treatment

For patients with comorbidity, it was found that adherence to MH treatment is lower than the adherence to HIV treatment. This is because treatment is paid in MH service while it is free of charge in HIV service; it could be also because in HIV services patients receive transport tickets and nutrition support that could contribute to good adherence. Therefore, mentors have always been asked to advocate for them in order to get neuroleptics for free. The answer was that healthcare provider should continue teaching their patients in order to inform that mental disorders especially those with internalizing symptoms (e.g. depression, anxiety disorder) can also be as fatal as HIV and should stress on bidirectional relationship between HIV and MH (e.g. if you don't adhere to MH treatment, you will end up to not adhering to HIV treatment and vice versa). Meanwhile, the advocacy for receiving medications for free will also be done.

2.2.10.5. Action taken by mentors to address these issues

1. First of all, mentors have discussed with visited health care providers about how to solve problems. They used examples of health facilities which are performing very well (e.g. RUTONGO DH, NGARAMA DH) to illustrate how HIV/MH integration should be implemented.

2. Mentors presented also to hospitals administrative managements those issues encountered and suggested solutions (e.g. shortage of staff that can be solved by hiring new ones, inadequate localization of services, which can be solved by reallocating services, etc...).

3. Mentors have also guided, helped and trained staff in health facilities to improve their performance in HIV testing, filling registers, and they have provided different knowledge depending on discussed clinical cases (E.g. The interaction between Neuroleptics and antiretroviral, Neuropsychiatric side effects of antiretroviral, HIV disclosure process to children).

2.2.10.6. Recommendations

Although it has been conducted since many years, mentorship on HIV and MH integration is still needed. This is mainly because every time mentors find new staff who need to acquire knowledge of this program. Therefore, training also should continue, starting with new staff.

The Ministry of Health should provide enough healthcare providers especially to HIV services. In some hospitals the number of patients is so high that HIV nurses and social workers cannot satisfy their needs. Involving peer educators in following up patients who are more predisposed to having mental problems may also be a solution.

2.3. Allied health sciences

The medical department cannot complete the mission of the hospital without the service provided by allied health sciences services. Physiotherapy, Laboratory, Medical Imagery, Occupational Therapy, Clinical psychology, Social Services and Pharmacy help the hospital to accomplish its mission.

2.3.1. Physiotherapy

The physiotherapy service plays a big role in the rehabilitation of patients with neuro-musculoskeletal problems; whether they are mentally ill or not. It has the capacity to receive fifteen clients a day and receives out/inpatients. The most encountered cases are classified into five categories, neurological, orthopaedic, traumatic, rheumatologic, and psychiatric. The tables below show the number of patients received during the year 2020/2021.

In/out patients

In/out	Numbers	Percentage
Outpatients	1070	86%
Inpatients	167	14%
Total		1237

Table 14: In/out patients

The table above indicates that 86% of treated cases are out patients whereas 14% are inpatients.

Category per pathologies

Type of cases	Numbers	Percentage
Neurology	708	56%
Orthopaedic	121	10%
Traumatic	123	10%
Psychiatric	151	13%
Rheumatology	134	11%
Total	1237	100%

Table 15: Category per pathologies

The table above indicates that 56% of the cases treated in physiotherapy service are neurological; others are Psychiatric with 13%, Rheumatology 11% and then Orthopaedic and Traumatic with 10% each.

2.3.2. General Laboratory

The Neuro-Psychiatric Hospital CARAES Ndera has a General Laboratory Service performing various laboratory tests contributing to the effectiveness of patient monitoring. This service has five (7) Laboratory Technicians, (5 at NPH CARAES Ndera, two (2) at CARAES Butare and at Icyizere Psychotherapeutic Centre) is assisted by NPH CARAES Ndera staff and carried out the following tests: Biochemistry, Haematology, Bacteriology, immunoserology, serology, parasitology, dosage of drugs, Toxicology and covid-19 tests.

In general, **57,120** tests were done. At CARAES NDERA 43,300 tests were carried out, Psychotherapeutic Centre ICYIZERE carried out 3,152 tests while 8,220 tests were done at CARAES Butare. There was an increase in tests due to COVID-19 testing process, where 2,448 tests performed and **190** cases were positive.

Suggestions:

- ✓ To strengthen the 24 hours working Laboratory, the lab needs an increase in staff as lab activities and tests request increase at Headquarter and Branches.

- ✓ For better management and follow up of patients at CARAES Butare and Icyizere, there is a need of machine to perform drugs, toxicology and electrolyte dosage
- ✓ To make a rehabilitation of Laboratory to meet requirements of accreditation bodies

2.3.3. Medical Imagery

Electroencephalography, Electromyography, ECG, Evoked Potential (EP) are imageries used by the Neuro-Psychiatric Hospital CARAES Ndera to complete medical assumption.

2.3.3.1. Electroencephalography

Electroencephalography (EEG) is a cerebral exploration method that measures the electrical activity of the brain by electrodes placed on the scalp often represented in the form of a trace called electroencephalogram.

2.3.3.2. Electromyography

It is the recording of electric currents that makes it possible to study the peripheral nervous system, the muscles and the neuromuscular junction (contact between the neuron and the muscle).

2.3.3.3. Evoked Potentials (PE)

IT consists of measuring brain responses to specific sensory stimuli: visual, auditory, sensory. The evoked potential also represents the electrical response of the brain to external stimulation (visual, auditory or sensitive).

The objective of this examination is to appreciate how the conduction of nerve impulses along certain nerve pathways from the periphery to the brain.

2.3.3.4. Electrocardiogram (ECG)

It consists of measuring the electrical activity of one's heart to show whether or not it is working normally. An **ECG** records the heart's rhythm and activity on a moving strip of paper or a line on a screen.

Table below demonstrates in Electroencephalography, Electromyography, ECG, Evoked potential.

REASON & MONTH	2020						2021						Total
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	
EEG	463	448	424	485	543	562	318	335	519	550	483	593	5723
EMG	16	16	14	0	12	20	3	5	16	10	15	0	127
ECG	1	2	0	1	0	2	1	3	3	1	1	1	16
EP	0	4	0	0	0	0	1	0	0	1	0	0	6

Table 16: Electroencephalography, Electromyography, ECG, Evoked potential

By the end of the year 2020/2021, the electroencephalography services of CARAES Ndera had conducted 5,723 tests. The most common pathology was epilepsy and convulsive disorders. The hospital conducted 127 EMG, 16 ECG and 6 Evoked Potential tests.

2.3.4. Occupational Therapy

Occupational therapy is a client centred health profession concerned with promoting health and well being through occupation. Its primary goal is to enable people to participate in the activities of everyday life thus promote independence and autonomy of the individual in his environment. For psychiatric disorders, the emphasis is on education, rehabilitation and social reintegration and activities are carried out in groups and individually based on client's condition.

We thank the administration of the hospital for the construction of a house adapted to the occupational therapy service and which allows the participation of a large number of patients in good conditions.

The Occupational therapy service focuses on helping patients hospitalized for a long period (chronic patients) for psychosocial reintegration, where they are involved in different activities of daily living and training in social skills.

Here below are the data on participation in different occupational activities for the year 2020-2021, as grouped into 6 categories.

Type of activity	ADLs	Revalidation	Arts	Expressive	Sport	Psycho-Education
Participation of crisis units	8981	1431	1701	1494	1603	103
Participation of improvement units	3292	2447	3450	3180	5074	732

This diagram above illustrates the number of patients who participated in different group activities throughout the year 2020-2021, some of them are performed in the occupational therapy department and others took place outside.

SPORT Activities include walking, dancing, gymnastics, volleyball, basketball and football

ADL: Activity of daily living includes peeling potatoes, cooking, gardening, and dressing, cleaning and toilet and tooth brushing.

Therapeutic activities with regular monitoring and evaluation (July 2020- June, 2021)

Month	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	Total
Participants	16	19	28	21	22	17	11	29	27	9	12	17	228

Table 17: Therapeutic activities with regular monitoring and evaluation

The diagram above summarizes the number of patients followed in occupational therapy under the prescription of healthcare providers. The follow-up is either individual or individualized in the group, and the follow-up is based on the diagnosis of each client.

The future concern of occupational therapy service is to play a big role in psychosocial reintegration of mentally ill patients with emphasis on chronic cases who last a long-time in hospitalization through activities of daily living and social skills training. In addition we would like to bring about innovation and creativity and strengthen income generating activities like Gardening, Sewing, Basketry, knitting, vase making, etc.

2.3.5. Clinical Psychology

By the end the financial year 2020/2021, Clinical Psychology service at Neuro-Psychiatric Hospital CARAES Ndera and its branches is composed of 8 full time staff members and 1 part time and senior clinical psychologist working under 2 years contract. The responsibilities and duties performed clinical psychology staff include the following:

- Assessing client’s behaviour and needs through observations, interviews, and psychometric tests.
- Developing, administering and monitoring appropriate treatment plans and strategies to individuals, couples, families, and groups.
- Writing reports of different interventions according to the standard set by the site where they are assigned.
- Participating in meetings, advising, and liaising with other health professionals in a multi-disciplinary team.
- Submit monthly, quarterly and annual reports to the supervisor
- Participate in research activities
- Conduct trainings on different topics related to the field
- Supervise and coach students on training and internship
- Perform other related duties as required by the administration.

2.3.5.1. Brief report on the number of patients who consulted service

The service has seen an increase in the number of patients who consult for both in and out-patients. Patients who consult are either referred by the doctors, nurses who receive them, or self referred. For those who are admitted each ward is assigned a psychologist who work there as part of the clinical team. Below is a summary presentation of patients served in the service in this period of time.

Number received	2020						2021						Total
	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	
Outpatient	134	128	246	192	211	245	160	120	214	237	201	218	2306
Inpatient	53	78	84	71	71	87	87	67	344	82	93	104	1221
Group therapy	19	39	54	55	60	60	48	2	42	71	61	48	559
Total													4086

Table 18: Number of patients who consulted Clinical Psychology service

Psychotic, depression, somatoforms disorders and drug abuse are the 1st causes of consulting the clinical psychology service at Neuropsychiatric Hospital CARAES Ndera and its branches.

2.3.6. Social Services

For the past 12 months, the social service managed to carry out various activities to help patients find solutions to the various social problems encountered or to adapt to the situation in which they found themselves.

2.3.6.1. Individual and family interviews

We conducted 621 individual interviews with patients and 273 interviews with family members of patients. The aims of interviews were to collect information or provide support to patients and or to family members in order to find the most suitable solution according to the socio-family, professional, economic context and with respect for social rights.

By the interviews, we were able to identify the origin of the patients brought by the police, local authorities or other persons of goodwill and we informed their loved ones that they were in hospital.

As the family plays a big role in the care of patients, especially in non-hospital settings, we worked with family members of patients who required their involvement in their care. We tried to talk about the importance of their implications in helping the patient to exit or adjust to their situation.

In addition to their involvement we listened to them, especially as there were those with remarkable suffering and different issues that needed a person to listen to them and answer the questions they were asking. Questions that were not at social service level were directed to doctors, nurses or the administration of the hospital.

2.3.6.2. Telephone calls and radio communications

Admitted patients without the knowledge of their family members, calls and radio communication were used to inform them or to invite families that the multidisciplinary team needed before discharge of their patients.

2.3.6.3. Identifications of social cases

For the 161 social case patients, we worked with the various external actors (local authorities, Rwanda demobilization and reintegration commission hospitals, prisons, AHA, etc.), for their social care or reintegration after hospitalization.

2.3.6.4. Preparing patients for discharge

With the aim of preventing relapses, every Wednesday the social workers animated a psycho-education session in relation to the behaviours to be held after hospital discharge such as respect of medicines, developing self-esteem, adapting in difficult situations, adherence to health insurance, etc.

2.3.6.4. Community activities

During the year 2020/2021 the social service made 41 field trips: 17 home visits and 24 families' reintegration of social cases. Among them there are those who were rejected by their families or those who had families with difficulties and incapable of coming and taking them from the hospital.

The field trips were carried out in the following districts: Kicukiro, Gasabo, Nyarugenge, Kamonyi, Muhanga, Nyanza, Huye, Nyaruguru, Ngoma, Rwamagana, Bugesera, Rulindo and Gicumbi.

The reintegration of psychiatric patients into the community allowed them to acquire functional and interpersonal skills. It is in this way that CARAES Ndera in collaboration with Organization for the Promotion of the Rights and Development of Mental Patients in Rwanda (OPROMAMER) ensure the monitoring of mental patients in the community with the aim of strengthening social rehabilitation and relapse prevention.

Community activities carried out are based in 23 out of 24 associations of the mentally ill and their family members. These activities are the following:

- Psycho-education
- Advocacy and sensitization of local authorities
- Psychosocial rehabilitation
- Outpatient medical consultation of members of OPROMAMER Groups

2.3.7. Pharmacy

Psychotropic drugs are essential drugs for Neuro-Psychotropic Hospital CARAES Ndera. Though there are rarely available on the local market, the hospital has managed to get supply of psychotropic drugs from Belgium on the hospital budget, but some psychotropic drugs were not delivered by the supplier due to COVID-19 pandemic.

2.3.7.1 Aims of the hospital Pharmacy

The primary mission of the Neuro-Psychiatric Hospital's Pharmacy is to manage the use of psychotropic medications and other pharmaceutical products of the hospitals. Its goals include the selection, prescription, procurement delivery, administration and review of medication to optimize patient outcomes. The hospital pharmacy gives importance in ensuring that the right patient, right route of administration, right drug, information and documentation are respected when any medication is used.

2.3.7.2 Consumption analysis of psychotropic drugs in 2020-2021

The consumption of psychotropic drugs, which are the essential medicine for Neuro-Psychiatric Hospital, was very high in almost all products during the year 2020-2021 because the number of patients has increased. The Neuroleptics drugs are mostly psychotropic drugs used for the hospitals, antiepileptic drugs have been used in the second place for epileptic patients also as mood stabilizer; and then antidepressants, benzodiazepines and hypnotics are less used, respectively. The most used neuroleptic, are chlorpromazine tablets, haloperidol 5mg tablets, dipiperon 40mg tablets, sulpride 200mg tablets, nozinan 20mg tab and risperidal 2mg tablets. The most used antiepileptic drugs in 2020-2021 are Sodium valproate all dosage, carbamazepine 200mg tab, phenobarbital all dosage and Keppra all dosage. The supply of psychotropic drug was done by ORBI-PHARMA Belgium and IMRES the Netherlands, the two suppliers helped the hospital get the psychotropic drugs as planned by the management.

The value of psychotropic drugs consumed during 2020-2021 by using the **purchase price** at Ndera Neuro-Psychiatric Hospital, CARAES Butare AND Icyizere Psychotherapeutic Center is **RWF806,699,037 Rwandan Francs.**

The value of psychotropic drugs in pharmacy stock as of June 30, 2021 was **RWF251,928,251.**

i. Challenges

The main difficulty the hospital faced in 2020-2021 was the COVID-19 pandemic, which caused lack of some psychotropic drugs from the hospital suppliers; there were also delays in the delivery of many psychotropic drugs.

Another difficulty was that when the hospital tried to look for local suppliers through tender market, it turned out they do not offer psychotropic drugs, and when they do, they set high prices for some products. As a solution, the hospital always seeks psychotropic drugs in foreign countries.

2.3.7.3. Somatic drugs, Lab reagents, consumables and medical equipment

In the year 2020-2021, the hospital and their two branches have used somatic drugs in considerable quantities, especially in Neurology service and Centre Icyizere.

The supply of somatic drugs was done by RMS/former MPPD CAMERWA, BUFMAR and through internal tender committee of the hospital.

Laboratory reagents were available, and the hospital bought them from MEDISELL Ltd, and the hospital has got a donation of reagent from RMS LTD for HIV program in 2020-2021.

The following is summative presentation of somatic drugs, consumables and laboratory reagents in 2020-2021.

- The value of somatic drugs stock at the 30th June 2021 was **3,741,711Frw**
- The value of lab reagents stock at the 30th June 2021 was **4,540,250Frw**
- The value of consumables and medical equipment stock at the 30th June 2021 was **6,738,807Frw**

CHAPTER III: IMPLEMENTATION OF THE ANNUAL ACTION PLAN

3.1. Introduction

An action plan is a roadmap that helps the hospital to accomplish its program goals and objectives within a fixed period, mostly in one year. As the one of the most important hospital management process, planning helps to think and set activities required to achieve desired objectives with some ease and promptness and avoidance of doing some random activities.

To achieve its mission of providing accessible specialized healthcare, facilitating training, research and mentorship in mental health and neurology with reference to the National Health Policy, the Neuro-Psychiatric Hospital CARAES Ndera planned many activities **to provide the best quality care for psychiatric and neurologic patients and to strengthen administrative and support services for the hospital operations.**

To digitalize planning process, the hospital as a government half managed entity, is adopted the Integrated Financial Management Information System (IFMIS), an integrated software that can support government to effectively planning ,budgeting, accounting and reporting. The IFMIS played a highly considerable importance to produce many advantages to the hospital as:

- ▶ Linkage between Planning and Budget to avoid deviation of budget which does not represent Strategic Plans
- ▶ Strengthening fiscal planning and reporting
- ▶ Enhancing the correlation of programs to activities and outcomes.
- ▶ Improving hospital's capacity for aggregate fiscal management
- ▶ Enabling more efficient resource allocation mechanisms Improving information for decision making
- ▶ Increasing the hospital accountability and transparency

In the ended financial year of 2020-2021 the hospital outlined many activities to deliver required outputs under two main programs namely:

1. Administrative and sporting staff

2. Specialized health service delivery

To ensure that the action plan is being implemented, the monitoring progress through regular reports is conducted on quarterly and annual basis. In this report we are going to present you how the fiscal year 2020-2021 action plan is implemented. The performance of outputs indicators are evaluated through the implementation of planned activities whereby the unity value of measures is split in quarterly and annually targets.

3.2. Performance of action plan 2020-2021

This report presents a detailed narrative on the implementation of the Ndera Neuro-Psychiatric Hospital annual (from 1st July 2020 to 30th June 2021) action plan and present the progress for all output indicators in the action plan which are supported by statistics table on settled annual targets, and after each program, bar charts are provided to present the implementation level of each output.

3.2.1. Program: Administrative and Support Services

3.2.1.1. Output 1: Human resources management ensured

The Human Resource Service is considered as the most influential component of the hospital, as it spends the significant part of the hospital budget through employees salary payment, employees capacity building, employees motivation activities and other employees needed development. Neuro-Psychiatric Hospital CARAES Ndera plays a big role in ensuring the hospital in its human resource provides the best effective, sufficient and accessible customer care service to meet its vision and mission. In order to attain the mission, vision, planned goals and objectives CARAES Ndera believes that the hospital employees must be suitable with regards to the right quantity, quality and skills mix to perform entirely their assigned duties and responsibilities.

The human resource management as output has two indicators to manage the employees (Employee turnover rate and Number of staff to be recruited). Employee turnover, or employee turnover rate, is a management evaluation tool the hospital uses to measure the number of employees who leave during a specified period, typically one year. All kinds of employee turnover, voluntary and involuntary took place and to continue the work without any stack

caused by leave, the hospital recruited new and fit employees to fill the gap in line of achieving planned targets/objectives. Here down is statistical data of human resource management performed in the financial of 2020-2021.

OUTPUT	Indicator	Baseline	Target	Achieved
Human resources management is ensured	Employee turnover rate (%)	6%	4%	6.6%
	Number of staff to be recruited	2	3	48

3.2.1.2. Output 2: Transport and maintenance of vehicles ensured

Transport service is very important for the proper functioning of the hospital. It provides various transport related to patients such as patient transfers to other hospitals, to sensitize the population on mental illness, home visits to monitor outpatients near their living environment and strengthen their reintegration in the community, transport of purchased or requisitioned drugs or medical equipment, transport of staff in different administrative activities, etc.

The hospital ensures the proper maintenance and assuring these vehicles through simple and general maintenance, tiring, availing spare parts, car washing services and providing assurance. Here down is statistical data of transport and maintenance of vehicles performed in the financial year of 2020-2021.

OUTPUT	Indicator	Baseline	Target	Achieved
Transport and maintenance of vehicles is ensured	Rate of activities realized (%)	85%	95%	96%

3.2.1.3. Output 3: Other hospital's goods and services ensured

To deliver the specialized neuro-psychiatric health care services, the hospital has provided different goods such as: office and wards equipments, office stationeries, printed matters, water and electricity, Public relations, communication and correspondence fees, laundry machines and etc... to facilitate the effective implementation and achievement of its mission. The hospital's

planned activities to deliver the output of other hospital's goods and services are implemented at the rate of 95% of all planned activities of the other Hospital's goods and services is realized as it is demonstrated in the table below.

OUTPUT	Indicator	Baseline	Target	Achieved
Other Hospital's goods and services are ensured	Rate of activities realized (%)	83%	95%	95%

3.2.1.4. Output 4: Quality care service ensured

The hospital has adopted a correct implementation of neuro-psychiatric health interventions according to the established procedures and standards through organizing Conferences on Mental Health Care, Organize psycho-education sessions, and sensitization of vulnerable groups on matters of addiction which facilitated the Neuro-Psychiatric hospital CARAES Ndera to satisfy health system's clients and maximize health outcomes without creating health risks or unnecessary costs. Here down is statistical data of quality care service performed in the financial of 2020-2021.

OUTPUT	Indicator	Baseline	Target	Achieved
Quality care service is ensured	Number of conferences done	0	4	5

3.2.1.5. Output 5: Infrastructures and maintenance works improved

The infrastructures and maintenance works are the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of the hospital to deliver the best quality of neuro-psychiatric health care service to in and out patients. In this ended year the hospital planned to rehabilitate water source, harvest rainwater, avail electric, construction and plumbing materials for maintenance, starting to build a home stay for chronic patients at CARAES Ndera (Home Saint JULES) and Rehabilitate rooms for Hospital partners at

St Jeanne d'Arc Community. Here down is statistical data of infrastructures and maintenance works implemented in the financial of 2020-2021.

OUTPUT	Indicator	Baseline	Target	Achieved
Infrastructures and maintenance works are improved	Rate of activities realized (%)	25%	30%	20%

3.2.1.6. Output 6: Strong, reliable and efficient IT system improved

A health information system (HIS) refers to a system designed to manage healthcare data. Information systems play an important role in the production, sharing, storage and transmission of information in various fields. Hospital information management systems used in the health sector actively meet the needs of physicians, administrators, and patients in institutional processes. The neuro-psychiatric hospital information management ensures that data are collected in a correct, complete and interdependent manner through web site management provision of internet connection and security, Maintenance of IT equipment, software, materials and networks. Here down is statistical data of strong, reliable and efficient IT system works implemented in the financial of 2020-2021

OUTPUT	Indicator	Baseline	Target	Achieved
Strong, reliable and efficient IT system improved	IT system is available, functional and integrates the hospital and its branches (%)	78%	90%	90%

During 2020-2021 Fiscal year, IT service was active in the hospital by delivering a better service to all departments and other services that need every day support, since the hospital has promoted technology in all its services. The move involved mainly going paperless by getting rid of paper-based system for web-based system; which is one of the successful implementations. This has increased the number of IT services provided to the users who need support on a daily basis to fulfill their task at the hospital and its branches.

On May 31, 2021, the hospital started OpenClinic system in CARAES Butare branch and it was their first time using this hospital management system. On the side of IT service, this has required us to increase the equipment that some of them had not planned, namely computers, printers and other equipments to make easily access the system to all services of CARAES Butare.

As COVID-19 preventive measures were put in place, IT service was always updated and followed the rules and regulations from the Ministry of Health. Since physical meetings were not allowed, our service facilitated online meetings whenever the hospital's member of staff needed to meet and discuss any issues; we helped them in using the online platforms, to avoid unnecessary movements. We started live streaming system as one of the best ways to link many people from different places, such as YouTube, Instagram, Twitter and Facebook, etc. So far, we have received all the required tools and the installation is all set. This precisely means that all events our hospital organizes will be followed live.

3.2.1.7. Output 7: Capacity building of employees ensured

The hospital has invested in Capacity-building of employees to develop and strengthen their skills, abilities, processes and resources through continuous training to both health staff and supporting staff, that the hospital need to survive, adapt, and thrive in a fast- objective achievement. An essential ingredient in capacity-building is transformation that is generated and sustained over time from within; transformation of this kind goes beyond performing tasks to changing mindsets and attitudes. Here down is statistical data of capacity building of employees implemented in the financial of 2020-2021.

OUTPUT	Indicator	Baseline	Target	Achieved
Capacity building of employees is ensured	Number of employees trained	109	155	119
	Trainees and internees performance level at the end of practice	75	80	80

3.2.1.8. Output 8: Improved evidence based practices and research aimed at filling the gap in knowledge about mental and neurology health and associated healthcare interventions

The Neuro-Psychiatric Hospital CARAES Ndera recognizes the importance of research as a scientific basis for clinical practice, to improve patient outcomes from planned activities such as conducting research in neurological field, assessment "to measure effect of outreach activities in mental health", conducting feasibility of a large pragmatic clinical study to assess the value of Paliperidone Palmitate in Rwanda in collaboration with J&J to conduct a research in addiction and depression. All research activities in Neuropsychiatric hospital must meet ethical and legal standards as well as Hospital requirements. The following researches are published in the financial year of 2020-2021:

1. Validity, reliability and cut-offs of the Patient Health Questionnaire-9 as a screening tool for depression among patients living with epilepsy in Rwanda
2. Validity, reliability, and diagnostic cut-off of the Kinyarwanda Version of the Hamilton Depression Rating Scale in Rwanda
3. Mortality of all causes and sudden unexplained death in epilepsy (SUDEP) in a cohort of 235 persons living with epilepsy in Rwanda using WHO Verbal Autopsy Questionnaire

OUTPUT	Indicator	Baseline	Target	Achieved
Improved evidence based practices and research aimed at filling the gap in knowledge about mental and neurology health and associated healthcare interventions.	Number of research published	1	1	3

Bar chart 1: Presentation of the achievements against baseline and targeted output

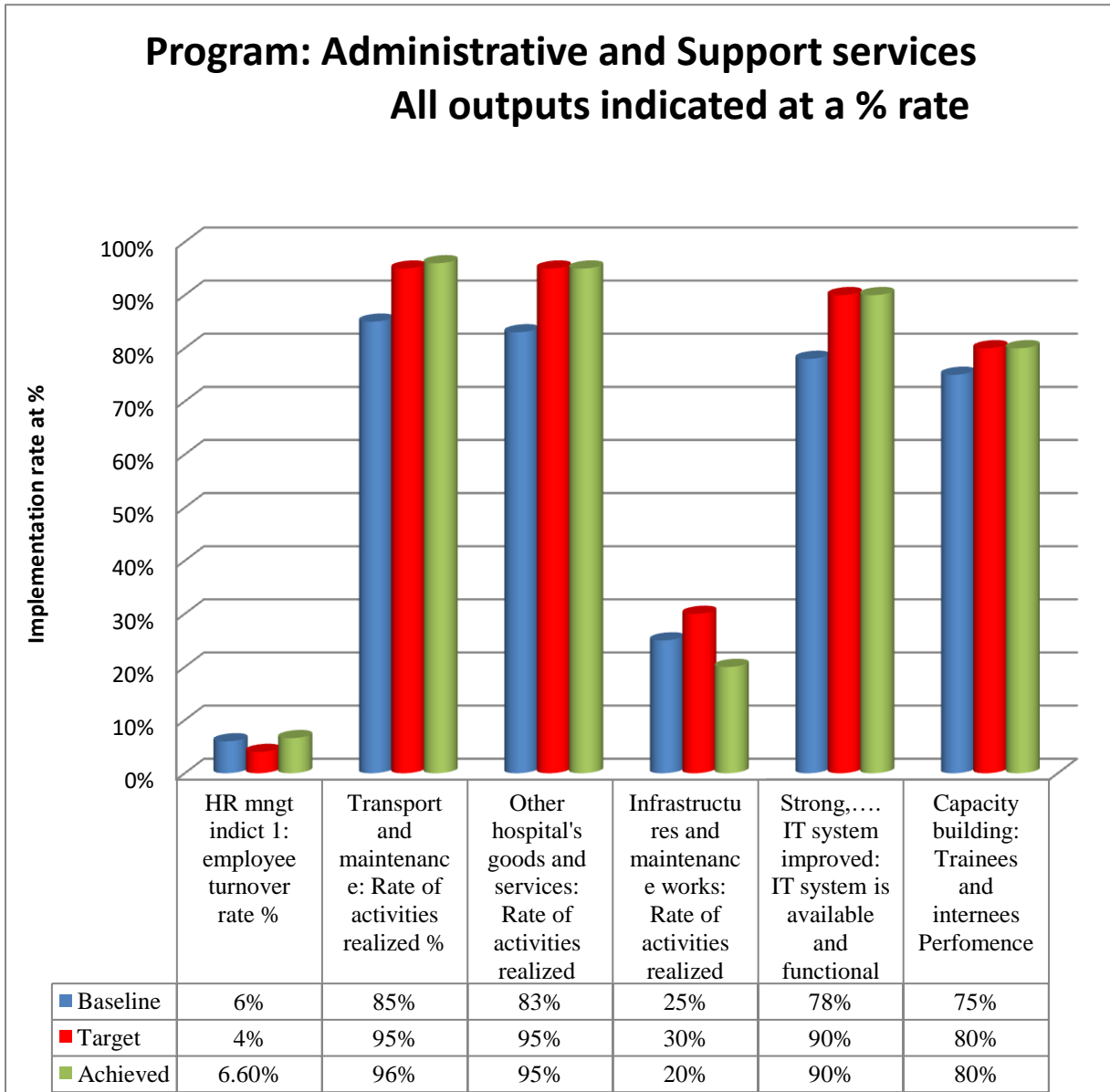


Figure 12: All outputs indicated at a % rate

Bar chart 2: Presentation of the achievements against baseline and targeted output#

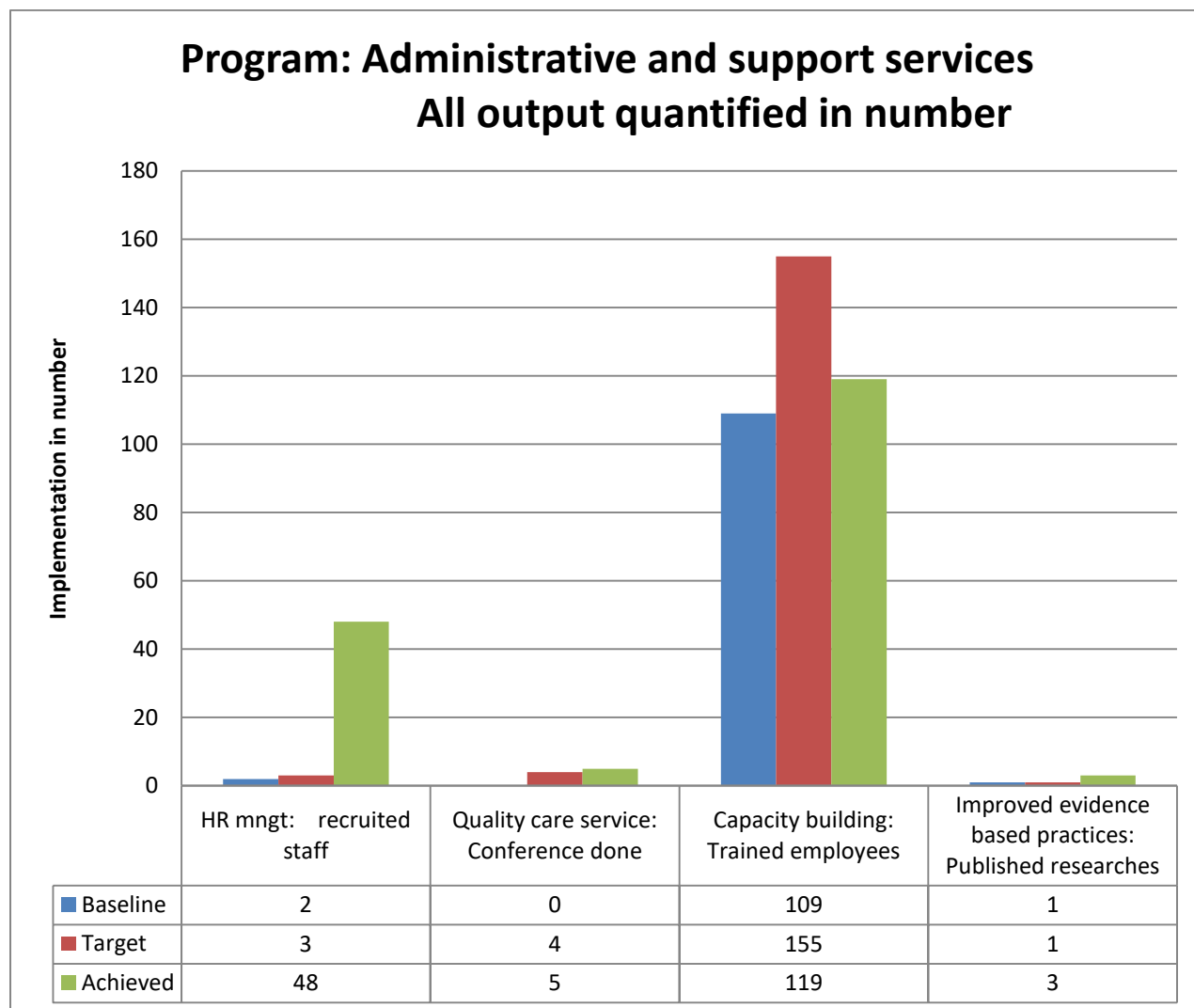


Figure 13: All output quantified in number

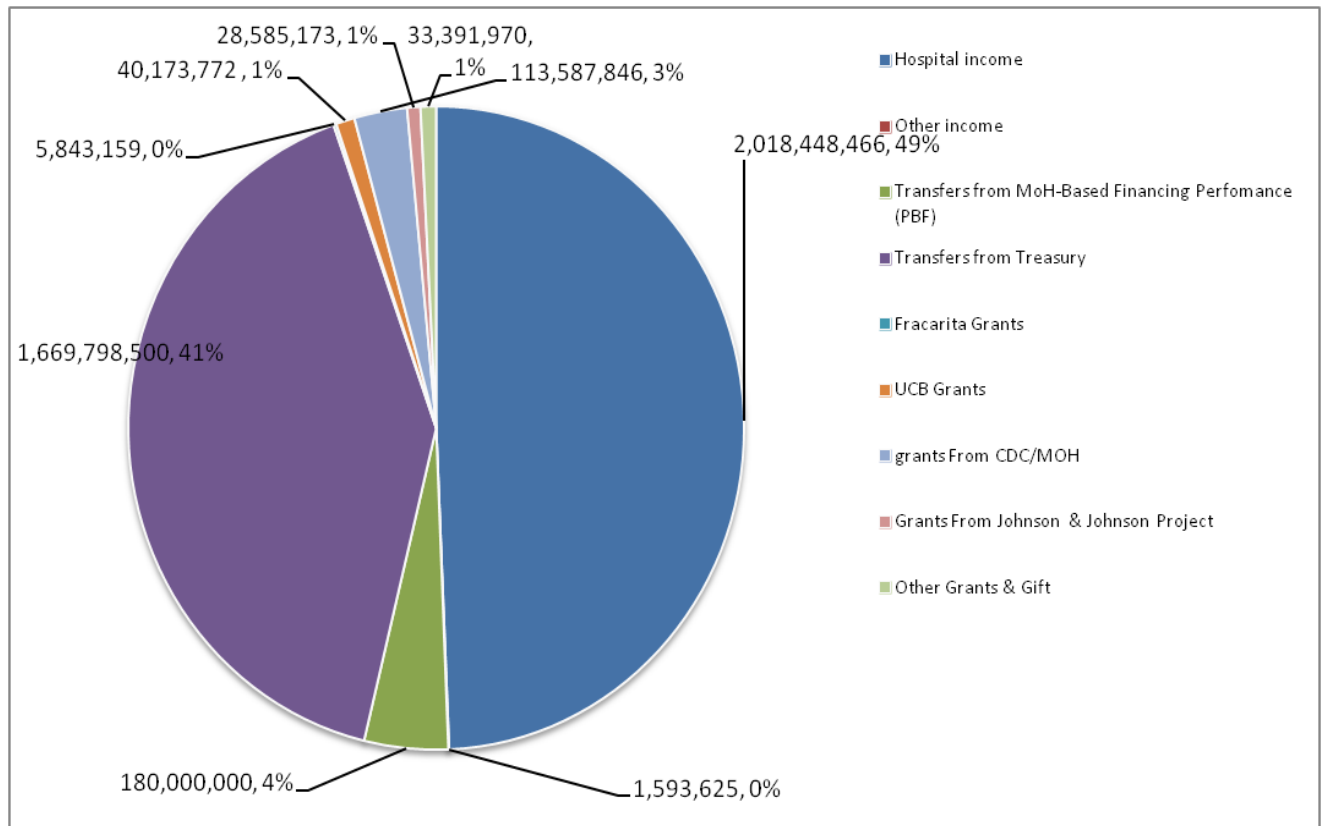
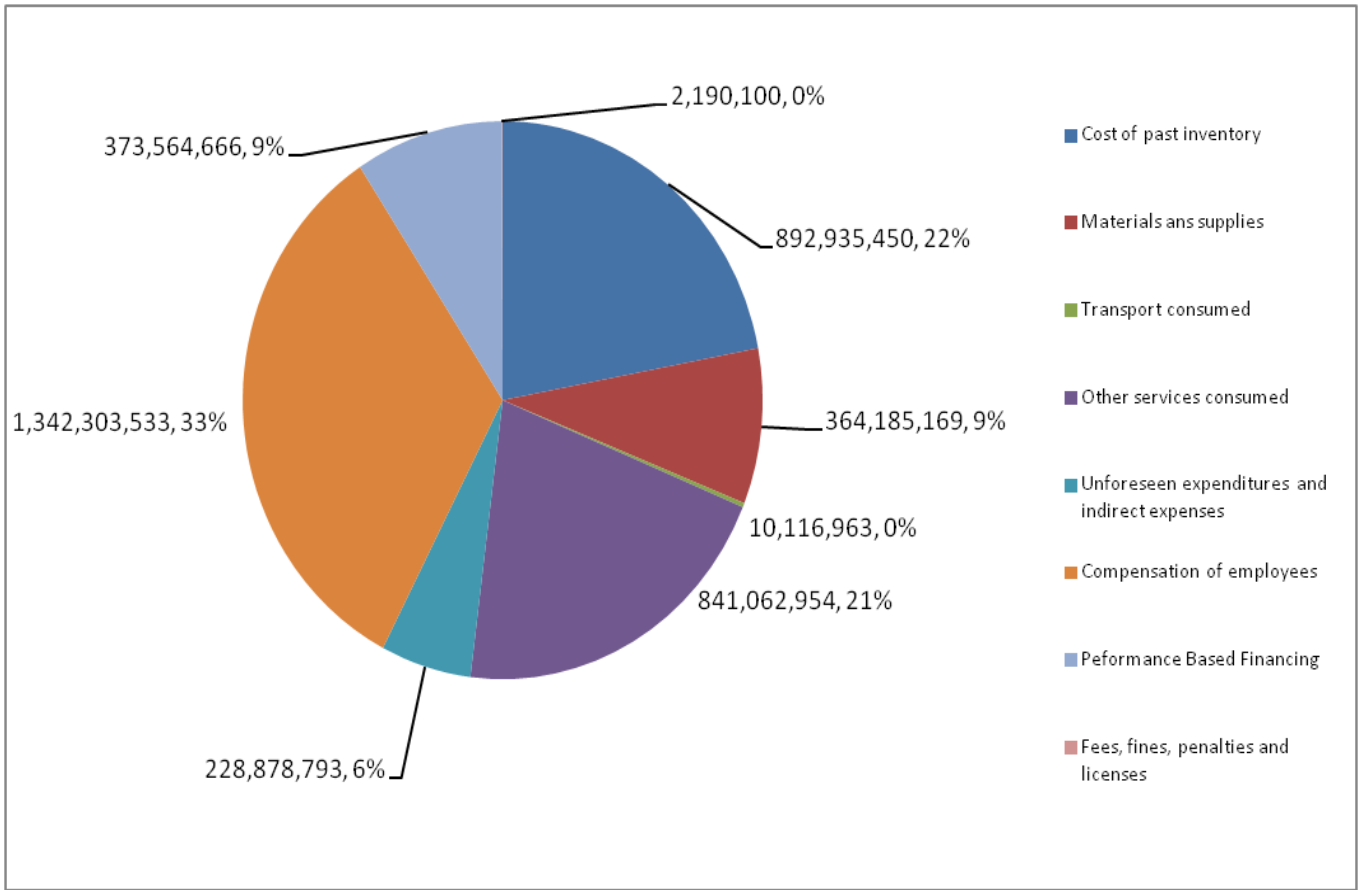
3.2.1.9. Finance

The management of the hospital's budget is entrusted mainly to the Director General of the Neuro Psychiatric Hospital CARAES Ndera, in his capacity as Chief Budget Manager assisted by the financial management committee of the hospital. This budget is made up of operating subsidies granted by the Government of Rwanda, subsidies from the Brothers of Charity, CARAES Belgium / Fracarita, own revenues and other partners.

The table below shows the different sources of finance as well as the charges

EXPENDITURES /CHARGES (In Rwf)			INCOME/PRODUITS (In Rwf)		
<i>Charges d'exploitation</i>	2020	2019	<i>Produits d'exploitation</i>	2020	2019
Cost of past inventory	892,935,450	590,890,151	Hospital income * Invoices - customers not paid	2,018,448,466 -373,868,507	1,823,968,679 -673,492,700
Materials and supplies consumed	364,185,169	259,752,774	Other income	1,593,625	2,149,355
Transport consumed	10,116,963	5,966,126	Transfers from MoH-Based Financing Performance (PBF)	180,000,000	240,000,000
Other services consumed	841,062,954	544,080,300	Transfers from Treasury	1,669,798,500	1,383,944,284
Unforeseen expenditures and indirect expenses	228,878,793	98,869,196	Fracarita Grants CARAES Belgium	5,843,159	37,268,265
Compensation of employees	1,342,303,533	1,063,252,191	UCB Grants	40,173,772	69,160,866
			grants From CDC/MOH	113,587,846	104,969,759
Performance Based Financing	373,564,666	333,080,220	Grants From Johnson & Johnson Project	28,585,173	88,687,475
Fees, fines, penalties and licenses	2,190,100	1,395,414	Other Grants Gifts	33,391,970	1,799,956
Result	36,184,883	854,662,267			
TOTAL	4,091,422,511	3,751,948,639	TOTAL	4,091,422,511	3,751,948,639

Figure 14: Sources of finance as well as the charges



3.2.2. Program: Specialized Health Services

3.2.2.1. Output 9: Neuro-physiologic service strengthened

The Neuro-Psychiatric Hospital CARAES Ndera as a sole specialized referral and teaching hospital in mental and neurology health care in Rwanda, is striving to provide the best and effective neurology health care service, in this branch of medicine which concerned with the study and treatment of disorders of the nervous system, and its rehabilitation through physiotherapy which is often used to help recover motor function and movement of joints, muscles and tendons in individuals who are affected by disability, illness or injury. By keeping the muscles active and the joints flexible, it prevents wasting and deterioration of function, as well as promoting rehabilitation.

The aim of neuro-physiologic service is to help rehabilitate physical impairments caused by neurological conditions as already mentioned. It is tailored to the specific needs of each individual with a personalized goal-oriented target. Rehabilitation will depend on the extent of the brain damage/injury, as well as how early neuro-physiotherapy begins.

According to the 2020-2021 annual consultations done in neurology, there is an increase in the number of cases of neurodegenerative diseases such as dementia, Parkinson disease, neurovascular diseases such as stroke and neuromuscular diseases such as paralysis which are a major cause of hospitalization and this service like any others has faced a challenge of irregular patients' appointment as consequence of COVID-19 pandemic, which laid transport barriers to neurologic patients from different districts of the country. The hospital copied with this challenges by establishing new measures and strengthening values of hard working, team working, availability, accountability, communication and consider planned activities like providing care to in and out neurologic patients; availing hospitalization facilities; organize appointments for in and out patients; Follow up, identification, advocacy for patients with long stay hospitalization by multidisciplinary team and orient them to community services and purchasing appropriate medical equipment.

OUTPUT	Indicator	Baseline	Target	Achieved
Neuro-physiologic service is strengthened	Number of patients consulted by a neurologist	22,668	28,152	25,410

3.2.2.2. Output 10: Ensured quality nutrition and special needs for hospitalized mental patients

The hospital receives neuro-psychiatric patients from different corner of the country and foreign countries, and from different background, some are known by address, name, families,... and there are others who are brought to the hospital by security agents (like Police, DASSO organ, etc...) from different streets in the country who know nothing about themselves (eg: don't know their own names, their parents, their relatives, their origin, etc...). All these patients need a special and individual consideration. The hospital thrived to optimize orders of nutrition and special need for inpatients to ensure that every patient has healthy life basic needs.

OUTPUT	Indicator	Baseline	Target	Achieved
Quality nutrition and special needs for hospitalized mental patients is ensured	% of stock out avoided	100%	100%	100%

3.2.2.3. Output 11: Improved quality care of mental patients with Addiction and increased awareness on risk of substance abuse

Substance abuse is a chronic, relapsing illness. A large proportion of individuals who have been treated for addiction tend to re-use drug shortly after treatment. Factors such as stress, depression, anxiety, positive mood, social pressure, adverse life events, work stress, marital conflict, family dysfunction, and a lower level of social support have been reported as relapse reasons. The hospital knew the decrease in number of addicted patients treated and the number of sensitization provided on substance abuse in 2020-2021 as consequence of COVID-19 pandemic, which laid barriers to patient's movement from different districts of the country and to the physical meetings.

OUTPUT	Indicator	Baseline	Target	Achieved
Improved quality care of mental patients with Addiction and increased awareness on risk of substance abuse	Number of addicted patients treated	2,633	2,723	1,177
	Number of sensitization sessions provided on substance abuse	44	46	17

3.2.2.4. Output 12: Pedo-psychiatric services strengthened

Pedo-psychiatry or Psychiatry of Childhood and Adolescence is the medical specialty capable of attending to the age group from 0 to 17 years old, performing the screening, diagnosis and treatment of psychic, emotional and behavioural disorders as well as their prevention.

Through follow up in post hospitalization for children with special needs and Provision of material for Child care, the hospital has deployed all effort to strengthen the service care delivery in Pedo-psychiatry to reduce as much as possible the psychological suffering of the patients so that the child/adolescent is able to resume his/her normal psycho affective development. That effort was not in vain as it is demonstrated below that the number of pedo-psychiatric patients treated in 2020-2021 and their satisfaction is increased.

OUTPUT	Indicator	Baseline	Target	Achieved
Pedo-psychiatric services are strengthened	Number of pedo-psychiatric patients treated	3,500	5,912	13,330
	Rate of patients satisfied with health care services (%)	85	93	93

3.2.2.5. Output 13: Occupational therapy strengthened

Occupational therapy is a type of health care that helps to solve the problems that interfere with a person's ability to do the things that are important to them everyday things like: Self-care (getting dressed, self hygiene, eating, moving around the house,...), Being productive (going to work or to school, participating in the community activities,...), and leisure activities (sports, gardening, social activities, music, etc....). The hospital ensured that the occupational therapy service is strengthened by hiring two occupational therapists and availing a new and fitting building for the service, which can host any number of patients who may receive occupational therapy services on medical prescription. That effort is proved in the increase rate to a 100% of performance as is shown here below.

OUTPUT	Indicator	Baseline	Target	Achieved
Occupational therapy is strengthened	Rate of patients who received occupational therapy services on medical prescription (%)	10%	50%	100%

3.2.2.6. Output14: Pharmacy service strengthened and sustained

The number of patients coming to hospital is increasing day after day and the more, the hospital receive many patients that brings implication to the need of pharmaceutical products and laboratory services. The pharmacy policy as an integral part of National Health Policy aim is to provide and continually improve upon the equitable availability of essential and affordable medication, health commodities and technologies that are of high quality and effective for patients. Despite the challenge that the hospital pharmacy is facing like a lack of 80% of essential psychotropic drugs on local market, the hospital optimizes pharmaceutical and laboratory purchasing orders in a timely manner and pays attention to the patients trends to avoid stock out.

Indicator	Baseline	Target	Achieved
Percentage of stock outs avoidance for tracer drugs	97%	98%	100%

3.2.2.7. Output 15: Laboratory services strengthened

Number of medical tests (in types of tests)	55	60	68
Number of medical tests (in quantity of tests)	37,188	39,044	54981

3.2.2.8. Output 16: Hygiene and environmental services ensured

No one goes to a health care facility to get sick; reasonably people go there to get better. In that context, the hospital developed hygiene and environmental infrastructures that intervene in the improvement of good management of solid waste, waste water and environmental management. And during this critical pandemic period of covid-19 the hygiene was prioritized in the every

corner of the hospital, not only infrastructure as hand washing stations at every entrance and many policies and protocols are adopted as such as:

- Washing hand with water or hand sanitizer before and after receiving a service
- Wearing face masks
- Social distancing
- Placing hygiene measures posters in public places
- Creation and equipping isolation room for detected positive cases of covid-19
- Keeping hospital green and etc.....

All these mentioned infrastructures, policies and protocols were accompanied by different planned activities as providing detergent supplies; contract with a cleaning company; contract with waste management company; purchasing hygiene materials; water sewage; purchasing drinking water filters; purchasing a water testing kit; fight against mosquitoes; maintaining green spaces; availing hand hygiene facilities; purchase fire fighting equipments; refilling fire fighting materials, to smoothen the effective implementation of action plan and to meet the health facilities hygiene and environmental cleanliness standards in the hospital.

OUTPUT	Indicator	Baseline	Target	Achieved
Hygiene and environmental services are ensured	Performance rate of hygiene and environmental cleanliness (%)	86%	95%	98%

3.2.2.9. Output 17: Neuro-psychiatric care strengthened (in/out patients)

Care provision to Neuro- psychiatric patients is the core service delivery of the hospital, as it is said in the introduction that Ndera Neuro-psychiatric hospital is leading institution and the unique referral and teaching hospital that is specialized in neurology and psychiatry in country wide. The big effort is deployed to achieve a maximum of standard of service care delivery.

The Hospital thrived to ensure that neuro-psychiatric care for in and outpatients is strengthened by Provision of quality care to neuro-psychiatric in/outpatients; provision of substitute medication to maintain abstinence and relapses prevention; organizing appointments for in and out patients; purchasing appropriate medical equipments and provision of psycho-social

intervention to PTSD victims to increase the patients satisfaction rate and to reduce the relapse rate of patients with PTSD as the table below presents.

OUTPUT	Indicator	Baseline	Target	Achieved
Neuro-psychiatric care is strengthened (in patients and out patients)	Relapse rate of patients with PTSD (%)	13%	10%	10%
	Rate of patients satisfied with health care services (%)	75%	80%	93%

3.2.2.10. Output 18: Improved Community and Rehabilitation psychiatric care for long term patients

Patients with psychosocial disabilities are likely to live like other people and their full autonomy requires strong community rehabilitation. In this line, the hospital had set the efforts to improve the quality of life of people with psychosocial disabilities by providing assistance to peer support group and fostering outreach and mentorship to districts hospitals, the implementation of planned activities faced many challenges of total lockdown/district or province quarantine, no physical meeting, and limited movement as measures against the spread of COVID-19 pandemic which reduced the expected number of rehabilitation activities.

OUTPUT	Indicator	Baseline	Target	Achieved
Community and Rehabilitation psychiatric care for long term patients is improved	Number of Rehabilitation activities done	68	84	39

3.2.2.11. Output 19: Improved care for mental patients living with HIV/AIDS aiming at reduction of morbidity and mortality

People living with mental health problems are at higher risk of HIV due to the low access to the information and knowledge of HIV, including how to prevent it, injecting drug use, sexual contact with people who inject drugs, sexual abuse, unprotected sex and low use of condoms. In addition, people living with HIV are highly at the great risk of developing mental health problems, often suffering from depression and anxiety as they adjust to their diagnosis and adapt to living with a chronic infectious disease.

Integrating mental health and HIV programs prevents new HIV infections and improves the health and well-being of people living with and affected by HIV.

The hospital has planned different activities like organizing support group meetings to improve the adherence to ART and CTX; providing a comprehensive care and support to PLHIV not yet eligible for ART according to national guidelines; planning and conducting home visits once a week for all patients who have missed appointments; conducting clinical mentorship on integration of HIV & MH in 30 DHs; organizing a training on integration of HIV and mental health to 60 HCPs from 30 DHs and organizing and conducting bi-annual case sharing on HIV and mental health with DH health care providers to improve the health and wellbeing of two entities as ensuring data management and Quality control and viral load tests for each enrolled patient based on the national guideline. The implementation of all these planned activities faced many challenges caused by Covid-19 pandemic which reduced the expected number of session activities to be conducted.

OUTPUT	Indicator	Baseline	Target	Achieved
Care for mental patients living with HIV/AIDS aiming at reduction of morbidity and mortality is improved	Number of session activities conducted	48	48	39

3.2.2.12. Output 20: Integrated somatic care in mental health services improved

To have mental illness doesn't mean that the patient is free from any other sickness or disease which can affect the rest of the body, for this reason the hospital integrated somatic care in mental health services to provide a holistic care to the hospitalized patients and the hospital hired a part time internist doctor for the service and provided somatic medical supplies.

OUTPUT	Indicator	Baseline	Target	Achieved
Integrated somatic care in mental health services improved	Number of patients with Comorbidity consulted by an internist	1,350	1,485	1,568

3.2.2.13. Output 21: strengthened physiotherapy and other neurological rehabilitation services

Physiotherapy is often used to help recover motor function and movement of joints, muscles and tendons in individuals who are affected by disability, illness or injury. The aim of neuro-physiotherapy is to help rehabilitate physical impairments caused by neurological conditions. The hospital strengthened physiotherapy and other neurological rehabilitation services by providing appropriate equipment and materials to the service.

OUTPUT	Indicator	Baseline	Target	Achieved
Physiotherapy and other neurological rehabilitation services are strengthened	Number of physiotherapy sessions done	2,925	3,364	3,436

3.2.2.14. Output 22: Hospital health and safety ensured

The hospital ensured the implementation of health and safety within all the hospital services to avoid or minimize fire risks for all patients, visitors, and staff in the hospital buildings, a lack of appropriate fire safety may cause serious harm to the staff, patients, and environment.

The hospital has rehabilitated buildings, sanitary infrastructures and walk ways according to safety requirements; provided and maintained fire fighting materials; provided risk insurance (for infrastructures, equipment and stores) and contracts with security companies to increase implementation rate of recommendations from environmental risks assessment at 90%.

OUTPUT	Indicator	Baseline	Target	Achieved
Hospital health and safety are ensured	Rate for implementation of recommendations from environmental risks assessment (%)	70%	90%	90%

3.2.2.15. Output 23: Supervision and Mentorship aiming at strengthening mental health care decentralization

Based on national mental health policy and the national mental health strategic plan, mental health care has been decentralized in general hospitals and integrated into primary health care. Mentorship and supervision are aimed to improve not only the health condition of patients but

also the knowledge and skills of health providers through formative supervisions in mental health care services to DHs and conducting clinical mentorship on integration of HIV & MH in 30 DHs and Ndera branches. The hospital target to train 160 health care providers at the district hospitals is decreased to 120.

OUTPUT	Indicator	Baseline	Target	Achieved
Supervision and Mentorship aiming at strengthening mental health care decentralization	Number of healthcare providers at the district hospitals trained	160	164	120
	Number of district hospitals supervised	30	30	30

3.2.2.16. Output 24: Reduced stigma and discrimination against epilepsy and mental health patients

“The single most important barrier to overcome in the community is the stigma and associated discrimination towards persons suffering from mental and behavioural disorders.” Stigma is a well-documented barrier to health seeking behaviour, engagement in care and adherence to treatment across a range of health conditions globally. Through the implementation of Ijwi ry'Umurwayi program, sensitization, follow up, home visits and advocacy for neuro-psychiatric patients in need, decreased the stigma and discrimination against epilepsy and mental health problems and in the other hand have increased the awareness of patients right to mental and epileptic health care service which augmented the number of patients who came to the seek treatment at the hospital.

OUTPUT	Indicator	Baseline	Target	Achieved
Stigma and discrimination against epilepsy and mental health problems is reduced	Number of patients consuming epilepsy and mental health services	57,609	73,675	91,653

Bar chart 3: Presentation of the achievements against baseline and targeted output#

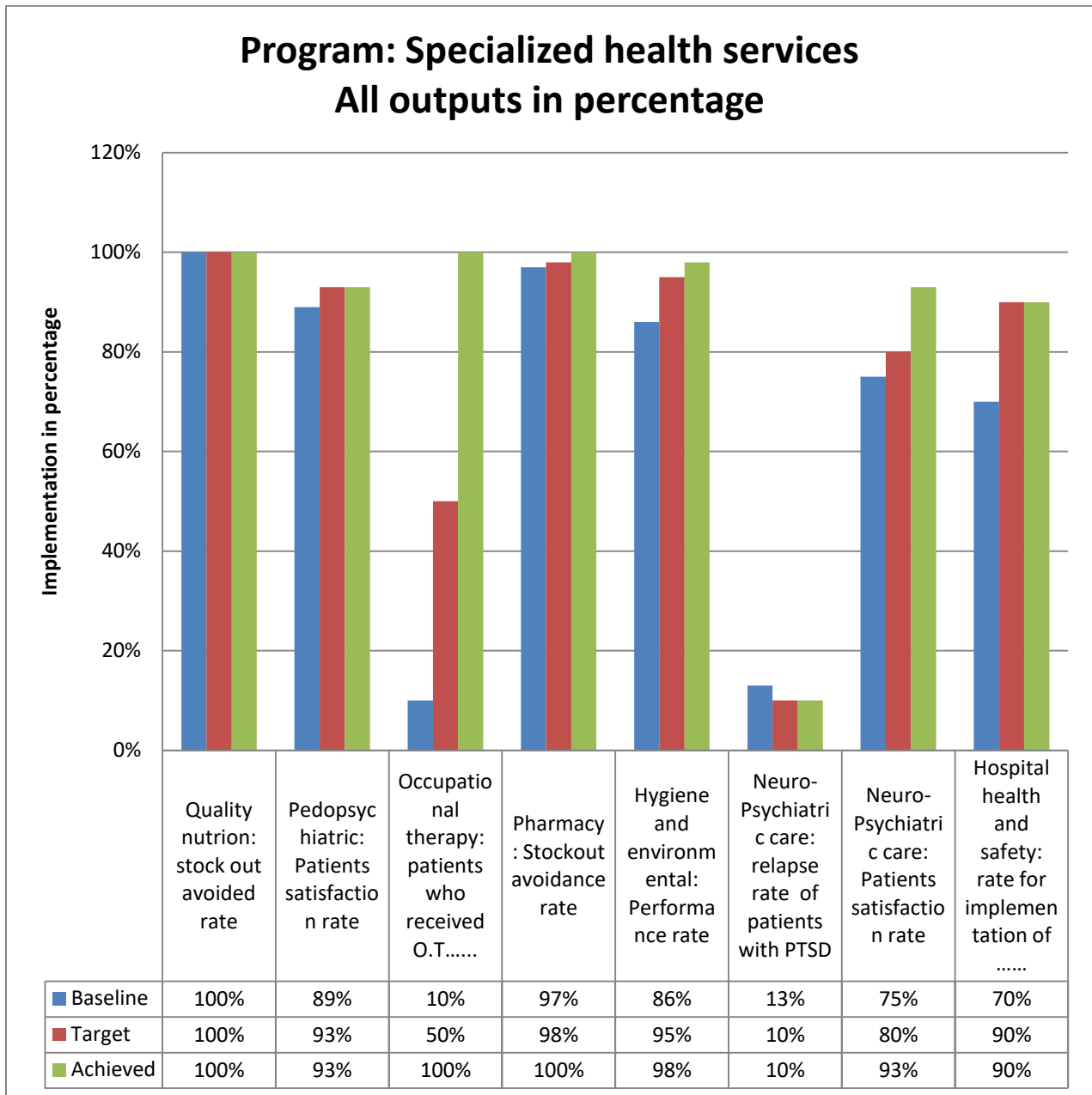


Figure 15: Specialized health services

Bar chart 4: Presentation of the achievements against baseline and targeted output#

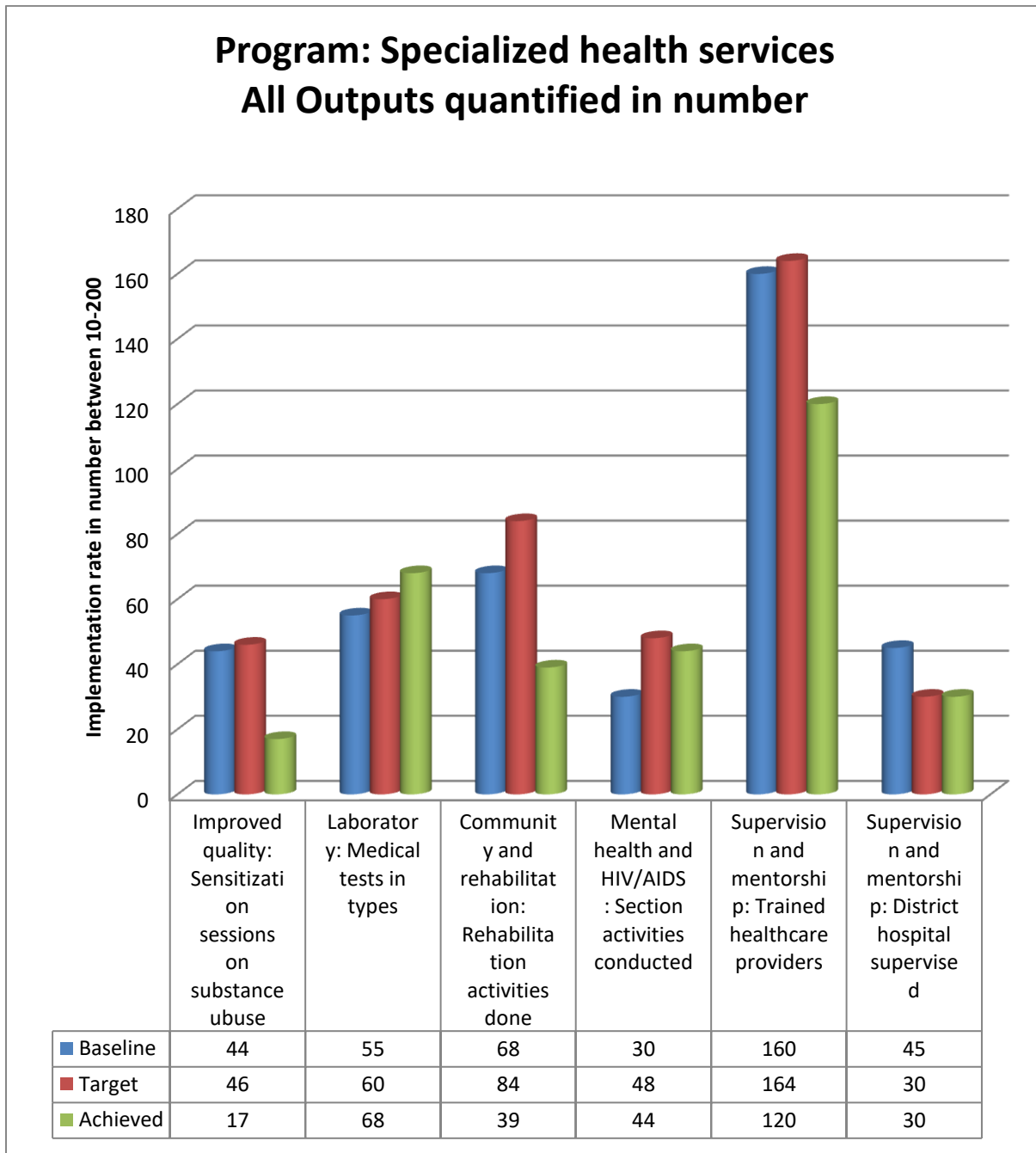


Figure 16: Specialized health services

Bar chart 5: Presentation of the achievements against baseline and targeted output#

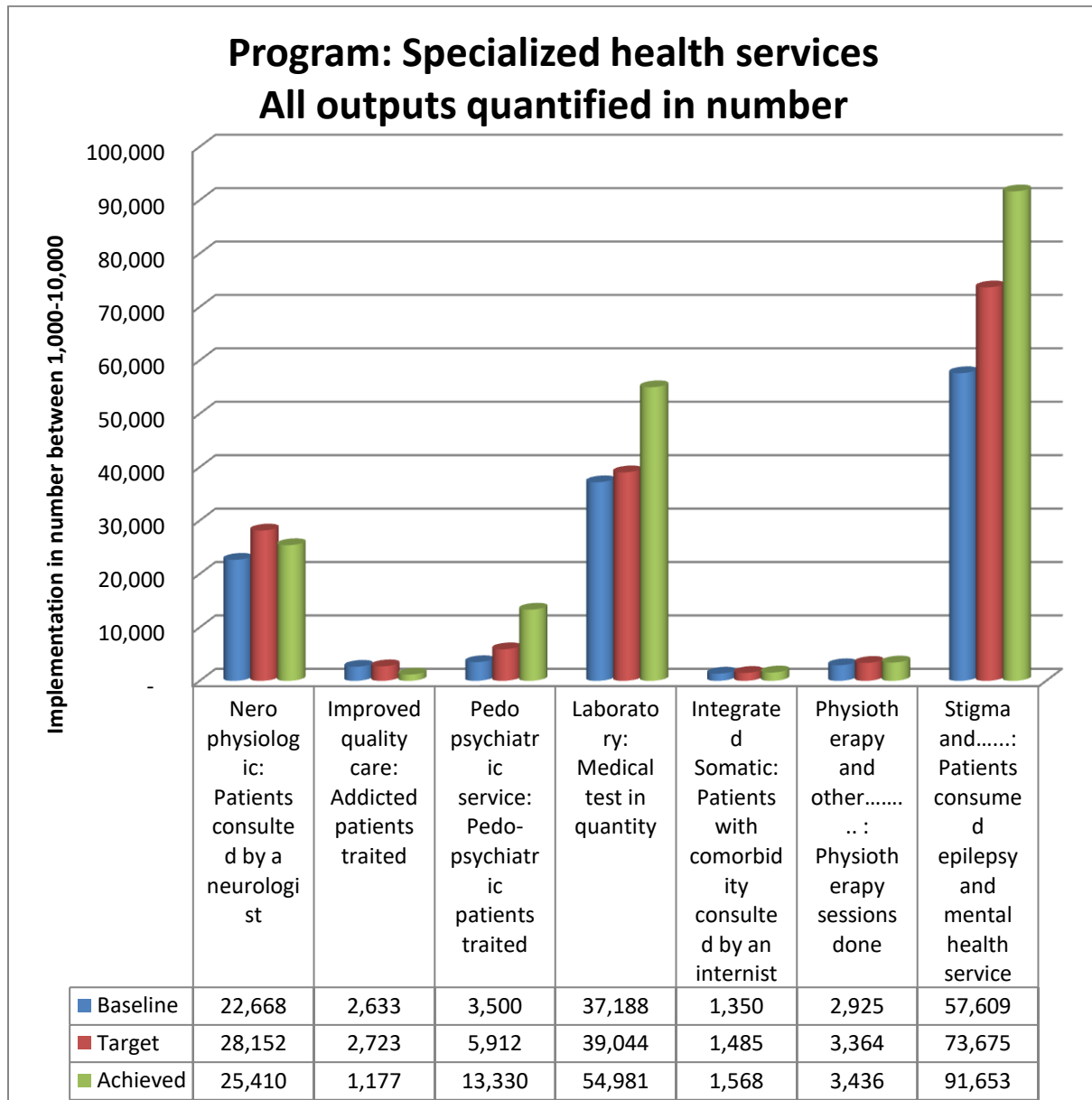


Figure 17: Specialized health services. All outputs quantified in number

CHAPTER IV: OTHER OUTSTANDING ACHIEVEMENTS IN LINE WITH THE HOSPITAL MANDATE

4.1. Department of Education, Research, CPD and Quality improvement

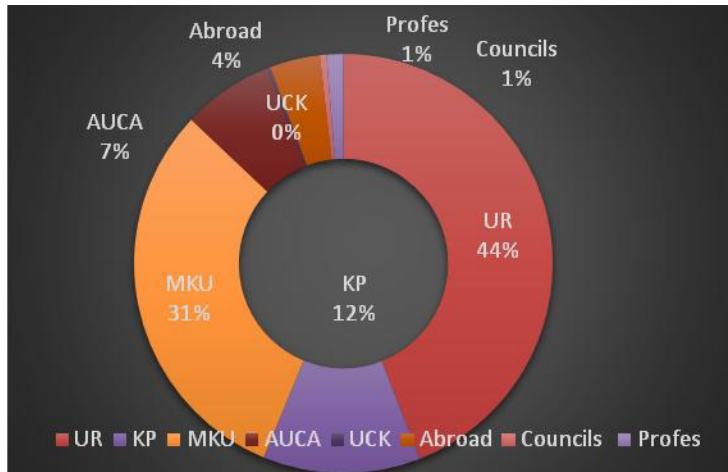
4.1.1. Education

Being a unique hospital specialized in neurology and psychiatry in Rwanda, the Neuro-Psychiatric Hospital CARAES Ndera has a strong collaboration with academic institutions, in providing education to students from different universities and higher learning institutions.

The table below shows the number of students trained and their institutions of provenance

No	Domains	UR	KP	MKU	AUCA	UCK	Abroad	Councils	Profes	Total
1	General Nurses	2	47	118	27	0	0	0	2	196
2	Mental health Nurses	28	0	0	0	0	0	0	0	28
3	Clinical psychology	7	0	1	0	0	4	2	2	16
4	Medical students	117	0	0	0	0	11	0	0	128
5	Occupational therapy	14	0	0	0	0	0	0	0	14
6	Social work	0	0	0	0	0	0	0	0	0
7	IT	0	0	0	0	1	0	0	0	1
8	Residency in psychiatry	2	0	0	0	0	0	0	0	2
9	EEG	0	0	0	0	0	0	0	3	3
Total		170	47	119	27	1	15	2	5	407

Table 19: Number of students trained and their institutions of provenance



The University of Rwanda tops other universities to send students for clinical practice (44%, almost a half of all received interns), Mount Kenya University comes second on the list with 31%, followed by Kibogora Polytechnics with 12% and the 4th is AUCA with 7%. A number of 407 interns have been received in entire fiscal year 2020/2021. We have noticed a good collaboration with national or international higher learning institutions.

4.1.1.1. Members of staff on academic training abroad

Some members of staff were sent on training in institutions outside the country. The following were sent for **Master in Neurology** at the Cheikh Anta Diop University Dakar (Senegal), Faculty of Medicine, Pharmacy and Odonto stomatology:

- **Dr Arlene Ndayisenga** goes into the final year. Her research thesis topic is the psychosocial and reproductive health of women living with epilepsy seen at the neurology department of the Neuropsychiatric hospital CARAES.
- **Dr Sylvestre Mutungirehe** enters the final year. His research thesis topic is ‘The ILAE 2017 classification of epilepsy onset and syndromes in 572 PwE’
- **Dr Delphine Kajeneza** enters the third year.

4.1.2. Continuing Professional Development

As a referral hospital, the Neuro-Psychiatric Hospital CARAES Ndera has a mandate to train health professionals. The Continuing Professional Development (CPD) serves to maintain, develop or increase the knowledge, skills, and professional performance.

During this COVID-19 period, however, face-to-face trainings for staff members were not possible; only online trainings were encouraged.

The table below displays the trainings completed at Neuro-Psychiatric Hospital CARAES Ndera during the fiscal year 2020/2021

No	Title of training	Participants	Numbers
1	Training on basics of Mental Health & Cleaning technique, de-escalation techniques, fire fighting	Supportive staff(cleaners)	85
2	Training on basics of Mental Health & de-escalation technique, fire fighting	Nurses	20
4	Fire fighting	staff& supportive	120
5	Fundamental of Risk based auditing	Audit	1
6	Auditing human resources	HR staff	3
7	HIV & mental health integration	HC staff	60
8	Pharmaco vigilance & ADRS system	Pharmacy staff	1
9	Management of COVID19 &	All	136
10	Triage management in psychiatry	Psychiatric wards	15
	Training for CPD credits/ MOH	All clinical staff	Online
	Training for CPD credits offered by Coursera, RNMU, NCNM and other councils	All clinical staff	Online
11	Strategic management plan	Responsible/ head of wards	22

Table 20: Trainings completed at Neuro-Psychiatric Hospital CARAES Ndera

Based on the annual training plan we had for this fiscal year, the Continuous Professional Development was achieved at the level of 99%, as displayed in the table above.

4.1.2.1. Members of staff on academic training abroad

Some of the members of hospital staff were sent out of the country for studies. The following are doing **Master in Neurology** at the Cheikh Anta Diop University Dakar (Senegal), Faculty of Medicine, Pharmacy and Odonto stomatology:

- **Dr Arlene Ndayisenga** goes into the final year. Her research thesis topic is the psychosocial and reproductive health of women living with epilepsy seen at the neurology department of the Neuropsychiatric hospital CARAES.
- **Dr Sylvestre Mutungirehe** enters his final year. His research thesis topic is ‘The ILAE 2017 classification of epilepsy onset and syndromes in 572 PwE’ .
- **Dr Delphine Kajeneza** enters the third year.

4.1.3. Research Activities

Neuropsychiatric hospital CARAES Ndera is a referral and teaching hospital, and has a mandate of carrying out researches in the field of neurology and psychiatry. During the fiscal year 2020/2021, different researches were completed and others are underway of completion.

Among the completed researches, we can mention:

1. ***Validity, reliability and cut-offs of the Patient Health Questionnaire-9 as a screening tool for depression among patients living with epilepsy in Rwanda. Sebera F. Et al.***

Patients with epilepsy (PwE) have an increased risk of active and lifetime depression. Two in 10 patients experience depression. Lack of trained psychiatric staff in low- and middle-income countries (LMIC) creates a need for screening tools that enable detection of depression in PwE. The research describes the translation, validity and reliability assessment of the Patient Health Questionnaire-9 (PHQ-9) as a screening tool for depression among PwE in Rwanda.

2. ***Validity, Reliability, and Diagnostic Cut-off of the Kinyarwandan Version of the Hamilton Depression Rating Scale in Rwanda. Dedeken P, Sebera F, Boon PA.J.M, Rutembesa E & Teuwen E.D.***

In Rwanda, major depressive disorder affects 11.9% of the population and up to 35% of genocide survivors. Mental health services remain underutilized due to stigma and lack of awareness. Increasing the ability and capacity to diagnose and treat mental disorders is considered important to close this gap. The research describes the translation, validity, and reliability assessment of the Hamilton Depression Rating Scale (HDRS) as a diagnostic tool for moderate to severe depression in Rwanda.

3. ***Mortality of all causes and sudden unexplained death in epilepsy (SUDEP) in a cohort of 235 persons living with epilepsy in Rwanda using WHO Verbal Autopsy Questionnaire.***
Sebera F, Uwacu HB, Nsanzabaganwa W, Umwiringirwa J, Dedeken P, Teuwen D.E, Boon P.A.J.M.

Mortality in persons living with epilepsy (PwE) is 1.6-9.3-fold higher than in the general population. Mortality from definite/probable Sudden Unexpected Death in Epilepsy (SUDEP) is estimated at 1.2 per 1000 person-years. The research reports mortality and SUDEP rate in a cohort of Rwandan PwE.

4. ***The PhD Research project: Epilepsy and depression as comorbidity: The study is part of the PhD research programme of Dr Fidele Sebera with Prof. Dr Paul Boon and Prof. Dr Leon Mutesa as promoter and co-promoter, respectively.***

Other notable research projects:

- i. Epilepsy knowledge, attitudes and practices of community health workers
- i. Prevalence of epilepsy using a door-to-door survey
- ii. Effectiveness of the involvement of community health workers
- ii. Re-admission of patients with mental conditions at the CARAES neuro-psychiatric hospital at Ndera (Kigali, Rwanda)
- iii. Forthcoming research entitled: Framework for an international collaboration adapted to the COVID-19 pandemic for cross-cultural translation of questionnaires on Quality of Life, disability, stigma, self-esteem, and wealth into Kinyarwanda using a mixed multistep approach with early patient involvement
- iv. Master in Health Economics and Pharmacoeconomics
- v. Master in Public Health by Ms. Josiane Umwiringirwa, registered at the Mount Kenya University for a Master in Public Health. Under progression

4.1.4. Quality improvement

4.1.4.1. Accreditation

It is regarded as one of the key benchmarks for measuring the quality health service of an organization and the hospital standards are organized in a framework of 5 risk areas:

RA I: Leadership process and accountability,

RA II: Competent and capable workforce,

RA III: Safe environment for staff and patients,

RA IV: Clinical care of patients

RA V: Quality improvement

It is designed to support facilities to achieve three levels of effort to measure progressive achievement to reach expectations for each standard:

- Level I: Requires developing and communicating policies, procedures and plans required to describe the level of quality required in all areas within the facility.
- Level II: Requires implementing policies, procedures and plans that were developed in Level I.
- Level III: Requires monitoring the effectiveness of the processes implemented in Level II. For this level, data will need to be used as evidence to identify opportunities for improvement and to develop action plans for improvements.

Levels I and II should be achieved within 2 years each, and Level III should be achieved within 3-5 years.

- Thus the self-assessment done on June, 2021 showed that Level I was not achieved with a total score of 79%

The following activities were evaluated:

- The policies and document were done and available in different services
- 60% of interviewed staff were aware of sampled policies and procedures
- Education of patients was done in different services
- Incidents from services were documented and analyzed
- Patient satisfaction report was done and discussed in different wards
- Accreditation meetings were done and reported
- Patients suggestions were reported and managed according to the policy and procedures

In the accreditation process, we have achieved level I and we are seeking to achieve Level II.

4.1.4.2. Quality

The hospital assesses its level of health service delivery on a quarterly basis. The assessments are conducted both in the administrative and clinical services. During this 2020/2021 fiscal year, the average score of performance of the hospital activities was 84.6%.

The hospital also conducts patient satisfaction survey on annual basis to ensure continuous improvement in healthcare service delivery based on patients' expectations or opinions. The average score of patient satisfaction survey conducted during this year was 85.4%. By implementing the recommendations from this year's survey, the hospital expects to reach at least 90% next year.

In addition, the hospital ensures the regular collection of patients' complaints and suggestions from suggestion boxes placed in all hospital services. Establishing the suggestion boxes, collecting complaints/suggestions, analyzing them and developing an action plan for the provision of solutions, are part of "Ijwi ry'Umurwayi" program, or The Patient's Voice program, aimed at improvement of healthcare service delivery.

The main suggestions by the patients were; COVID-19 testing before their hospitalization and getting a COVID-19 vaccine. As a response to these suggestions, all patients are tested for COVID-19 before hospitalization, and most vulnerable patients were vaccinated against COVID-19. Some patients also complained about a long waiting time at the cashiers' desks; this issue was addressed, with the hospital creating new cashier desks.

CONCLUSION

COVID-19 pandemic affected mental healthcare services and the implementation of some plans; nevertheless, the level of achievement of the Neuro-Psychiatric Hospital CARAES Ndera's 2020/2021 action plan was tremendous. There was an increase in consultations, hospitalization as well as the quality of the services provided at the hospital.

We kept working on quality improvement of our services because the patients' satisfaction is our priority. Therefore, to improve the quality, we built up employee capacity building in order to equip them with needed skills to perform their duties more effectively. As a referral hospital, we are also delighted to have given practice opportunities to students from different universities and higher learning institutions in Rwanda and abroad; which does not only contribute to their career development, but also creates more actors in mental healthcare in Rwanda.

We thank the Government of Rwanda, the Brothers of Charity and other partners who made a huge contribution to the development of the hospital. We value everyone's role in the realization of the 2020/2021 action plan; the Ministry of Health, Rwanda Biomedical Center (RBC) and other partners, as well as the hospital's staff. The hospital targets to increase the level of achievement of the coming year's action plan.