



REPUBLIC OF RWANDA

NDERA

**NEUROPSYCHIATRIC
TEACHING HOSPITAL**



BROTHERS OF CHARITY



ANNUAL REPORT

2021-2022

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EXECUTIVE SUMMARY

Ndera Neuropsychiatric Teaching Hospital provides specialized healthcare in psychiatry and neurology in accordance with the professional ethics and policy of Rwanda National Health Sector. Located in Ndera Sector, Gasabo District, City of Kigali, the Hospital also has two branches; CARAES Butare in Huye District, Southern Province and Icyizere Psychotherapeutic Centre, in Kicukiro District, City of Kigali.

The fiscal year 2021/2022 was marked by a large increase of patients consultations at the Hospital; in total, 96,357 patients were received, up from 74,363 consultations in 2020-2021, which is a 29.6% increase of the patients received at Ndera and the two branches. The daily consultation average was 264 patients, which is an increase of 60 patients per day. The reason for the large increase of the patients can be attributed to Covid-19 pandemic.

The number of patients received at CARAES Ndera, the main centre, is 64,105, which constitutes 66% of all patients. CARAES Butare had 19,811 consultations (21%), while Icyizere Psychotherapeutic Centre recorded 12,439 consultations (13%). The most prevalent pathologies are schizophrenia (37%), epilepsy (14%), acute psychotic disorders (11%), bipolar disorders (11%) and depression (8%). Despite the increase of all pathologies compared to the previous year, depression is new on the list of top five pathologies this year; as it increased from 1,743 to 7,817, a 348.48% increase. Though Covid-19 may be the main reason for the increase of depression, a particular research is required for more precision.

In total, 5,271 patients, including new and old cases were hospitalized; they include 3,731 (71%) patients admitted to CARAES Ndera, 1,201 (23%) patients at CARAES Butare, and 339 (6%) patients at Icyizere Center.

Other activities carried out during this fiscal year include community outreach programmes, which involved the hospital staff's contribution in capacity building for healthcare professionals at district hospitals level to boost mental health care. The hospital also supported the association of ex-service users (OPROMAMER) in relapse prevention and social rehabilitation.

Being specialized in neurology and psychiatry in Rwanda, the hospital conducted various activities in research and education. In the year 2021-2022, precisely 1,429 students from different universities and higher learning institutions, both local and international, conducted their clinical practice at the Hospital, mainly general nursing students (51.19%), medical students (35.71%), and mental health nurses (5.46%), with the highest number of students coming from University of Rwanda (57.8%), Mount Kenya University (29.6%) and Kibogora Polytechnics (10.1%). In research, by the end of the year, there were 10 ongoing researches.

Since the emergence 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 positive for Covid-19 were successfully treated.

Generally, despite the impact of Covid-19 on some activities as well as a large increase of patients, the action plan of the Hospital for the year 2021/2022 was successfully implemented, and 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

Ndera Neuropsychiatric Teaching Hospital is a university teaching hospital specialized in psychiatry and neurology in accordance with the professional ethics and policy of Rwanda National Health Sector. Founded in 1968, the hospital is one of the works of the Congregation of the Brothers of Charity, a religious institution, in partnership with the Government Rwanda, with the Government of Rwanda providing regular personnel, especially medical staff and other health professionals, and the Congregation assuring the management of the hospital and the availability of infrastructure, equipment, psychotropic drugs, somatic medicine and consumables. Following its inauguration at Ndera, Gasabo District, City of Kigali, the hospital saw a remarkable growth in all aspects, mainly the creation of two branches; CARAES Butare in Huye District, Southern Province in 1976 and Icyizere Psychotherapeutic Centre, in Kicukiro District, City of Kigali in 2003. Other notable achievements also include the creation of new services, strengthening of existing ones, and most recently, Ndera Hospital was upgraded to the level of University Teaching Hospital (Prime Minister's Instructions N° 001/03 of 10/08/2022), which comes with a responsibility of bringing together medical education, research, and patient care in a unique environment where the next generation of doctors, nurses, and other health professionals are trained.

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 modern medical training.

1.3. Mission Statement

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. Core values

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.

1.5. Human Resource Service

The service main responsibility of the Human Resource Service is to assist the hospital management in dealing with employee salary payment, employee statutory deductions declarations, employee recruitment and orientation process, employee capacity building, employee performance evaluation, administration policy and benefits, employee labor law and labor relations, employee safety and risk compliance, among others.

The Human Resource Service contributes to the success of the hospital by:

- Recognizing the uniqueness 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.

To promote employee working capacity, skills and experience, Human Resource Service ensures that employee performance evaluations are done completely on a monthly basis through performance evaluation and hospital self-assessment; this helps in identifying employee need for capacity building through different workshops, trainings, coaching, online short courses and other means which result in promoting teamwork at all levels, in order to achieve the hospital's mission, vision and goals.

1.5.1. 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 sets goals to achieve within a month and at the end of the month, together with his/her immediate supervisor, they 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.

1.5.2. Achievements

1. The Human Resource service have trained and assisted hospital employees on how to use the Result Based Performance Management (RBM) system in setting up performance contracts “Imihigo” and reporting achieved results after evaluation (Guhigura).

2. Ndera Neuropsychiatric Teaching Hospital is working closely with Rwanda Development Board in offering professional internship to fresh graduates.

1.5.3. 2022/2023 Human Resource Service project

The Human Resource Service will focus its efforts on:

1. Improving service delivery through accreditation process, where we are striving to achieve level three;
2. Strengthening employee development through capacity building and coaching;
3. Proceeding Horizontal step promotion process to eligible employees.

1.5.4. Hospital staff

Ndera Neuropsychiatric Teaching Hospital, at the end of the financial year 2021/2022, had **344 employees** where 182 employees were Under Statute, 155 employees were Under Contract and **7 employees** were Under Contract in CDC-COAG Project.

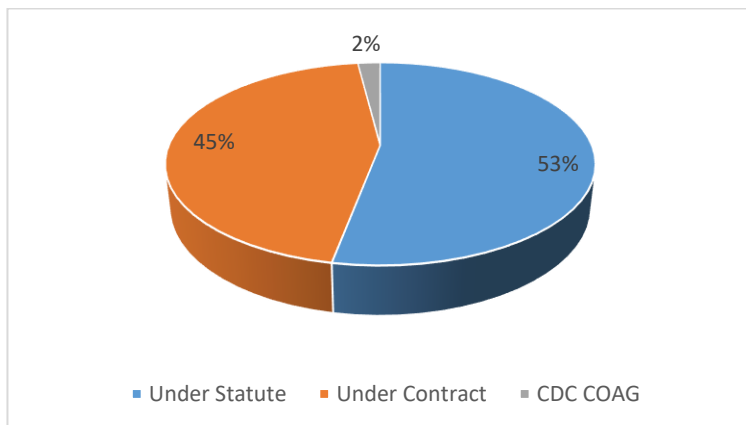


Figure 1: Hospital staff

1.5.4.1. Staff by Gender

As the financial year 2021/2022 ended, Ndera Neuropsychiatric Teaching Hospital had 344 employees, among them 154 employees are female and 190 employees are male.

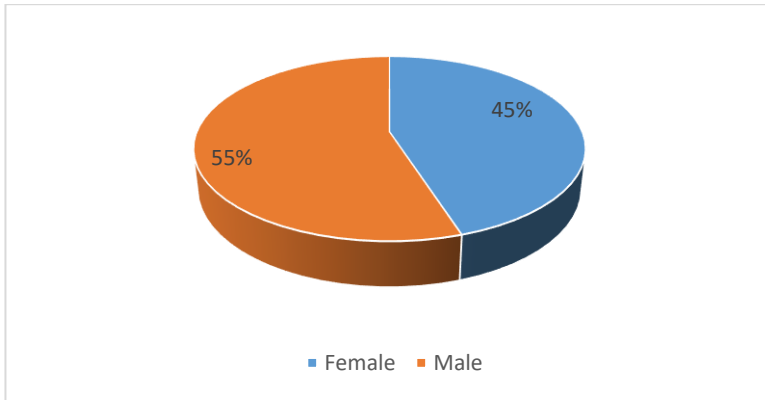


Figure 2: Staff by Gender

1.5.4.2. Staff per department

As it is in Official Gazette n° 47 of 21/11/2016, the hospital counts 7 employees in DG’s Office, 42 employees in Administration and Finance, 7 employees in Education, Research, CPD and Quality Improvement, 43 employees in Medical and Allied Health Sciences, 104 employees in Mental Health and General Nursing, 63 employees at CARAES Butare branch, 32 employees at Icyizere Psychotherapeutic Center branch and 47 employees who work as support staff.

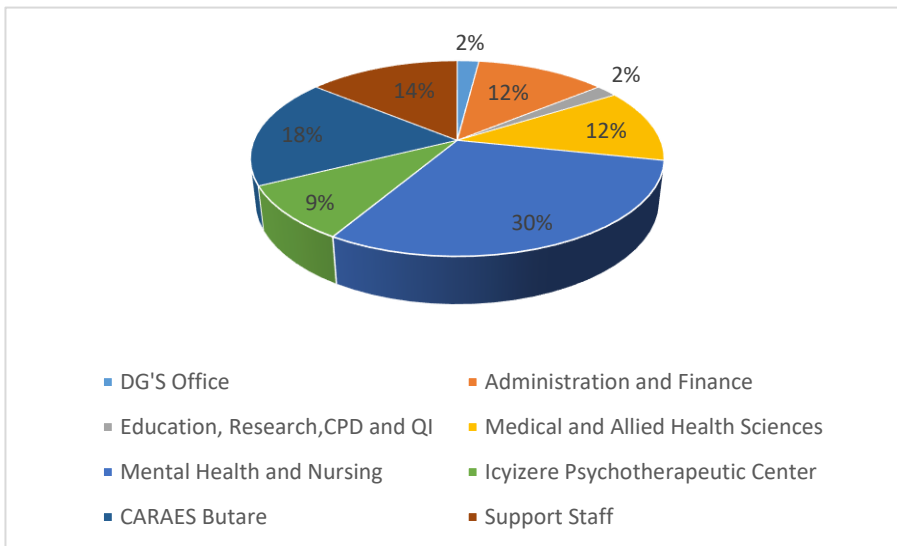


Figure 3: Staff per department

1.5.5. Employee recruitment

As per this financial year, Ndera Neuropsychiatric Teaching Hospital recruited has 51 employees, among them, 19 were for Nursing Department, 14 for Medical and Allied Health Sciences Department, 10 for Administration and Finance Department and 8 support staff.

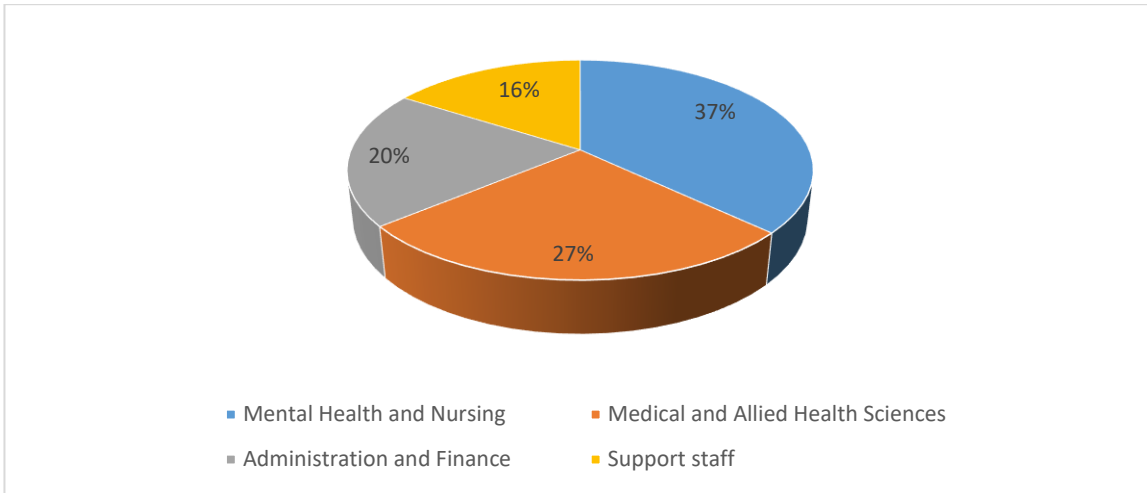


Figure 4: Employee recruitment

1.5.6. Employee turnover

During the course of this financial year 2021/2022, 17 employees have left Ndera Neuropsychiatric Teaching Hospital due to contract termination, retreat, voluntary dismissal and vocation mission.

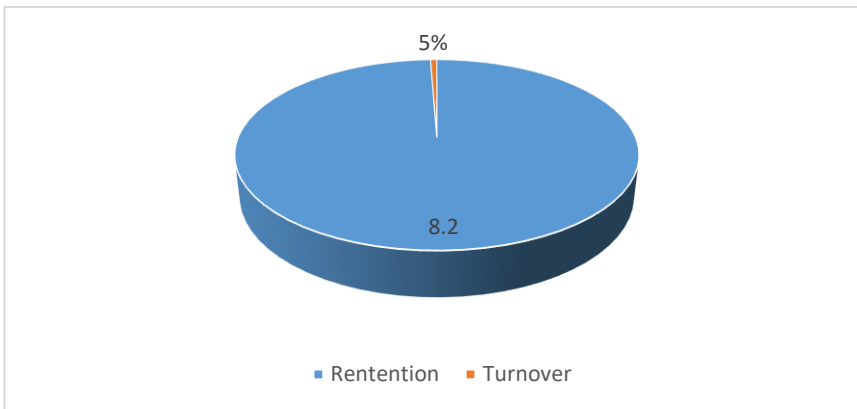


Figure 5: Employee turnover

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 following Month, Year, Age, New and Old cases

Month	Place of care	NC	OC	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	
July	NC	44	36	83	61	56	51	4	3	14	5	7	4	4	0	19	10	6	6	413		
	OC	640	322	960	781	763	812	73	88	357	288	288	413	49	30	253	185	150	203	6,655		
Aug.	NC	69	84	123	101	62	84	0	3	9	4	6	10	7	3	24	17	9	8	623		
	OC	701	351	1,090	797	717	771	121	91	501	427	301	507	33	26	280	204	139	216	7,273		
Sept.	NC	78	64	179	105	59	89	2	5	6	4	4	8	4	2	23	11	7	3	653		
	OC	703	347	1,040	773	692	800	82	95	379	314	311	422	44	31	284	201	145	201	6,864		
Oct.	NC	82	64	196	70	87	72	1	2	5	4	2	4	14	4	40	13	14	4	678		
	OC	721	412	1071	756	788	878	120	88	376	317	331	431	42	29	296	200	250	232	7,338		
Nov.	NC	104	64	110	89	85	78	3	3	19	10	8	4	12	7	18	14	13	6	647		
	OC	707	400	1,081	830	790	887	82	84	354	269	238	473	52	29	321	198	160	217	7,172		
Dec.	NC	94	61	129	89	83	66	5	4	17	5	5	8	3	2	27	12	14	6	630		
	OC	704	363	1,113	806	801	861	111	90	376	328	324	435	48	27	306	209	176	248	7,326		
Jan.	NC	88	62	154	94	88	117	3	1	14	7	1	0	14	9	29	11	16	8	716		
	OC	1,041	564	1,594	1,182	1,175	1,227	87	76	356	262	225	383	44	35	266	182	160	236	9,095		
Feb.	NC	78	89	69	89	52	111	9	8	23	17	4	14	5	6	29	12	18	8	641		
	OC	656	348	964	716	743	795	112	81	353	285	273	444	35	21	235	138	130	198	6,527		
Mar.	NC	116	67	149	62	93	75	10	14	40	17	5	15	9	2	30	16	12	12	744		
	OC	793	411	1,110	845	835	942	98	73	340	223	286	408	47	41	302	224	192	237	7,407		
Apr.	NC	91	69	100	85	65	86	14	7	33	20	10	14	13	3	34	14	12	8	678		
	OC	754	391	1,059	762	842	955	83	70	303	292	219	395	64	39	286	205	193	255	7,167		
May	NC	94	67	118	66	64	96	14	6	19	14	4	14	8	10	19	23	15	9	660		
	OC	786	442	1,090	828	869	986	116	86	361	337	270	462	69	37	302	187	189	259	7,676		
June	NC	104	88	126	85	75	70	40	36	43	21	16	29	8	10	19	23	15	9	817		
	OC	783	432	1,152	792	914	1,045	163	77	480	281	379	426	69	27	302	187	189	259	7,957		
TOT		10,031	5,598	14,860	10,864	10,798	11,954	1,353	1,091	4,778	3,751	3,517	5,323	697	430	3,744	2,496	2,224	2,848	96,357		

Table 1: Consultations done per month, year and age categories, new and old cases

2.1.1.1. Monthly consultations distribution

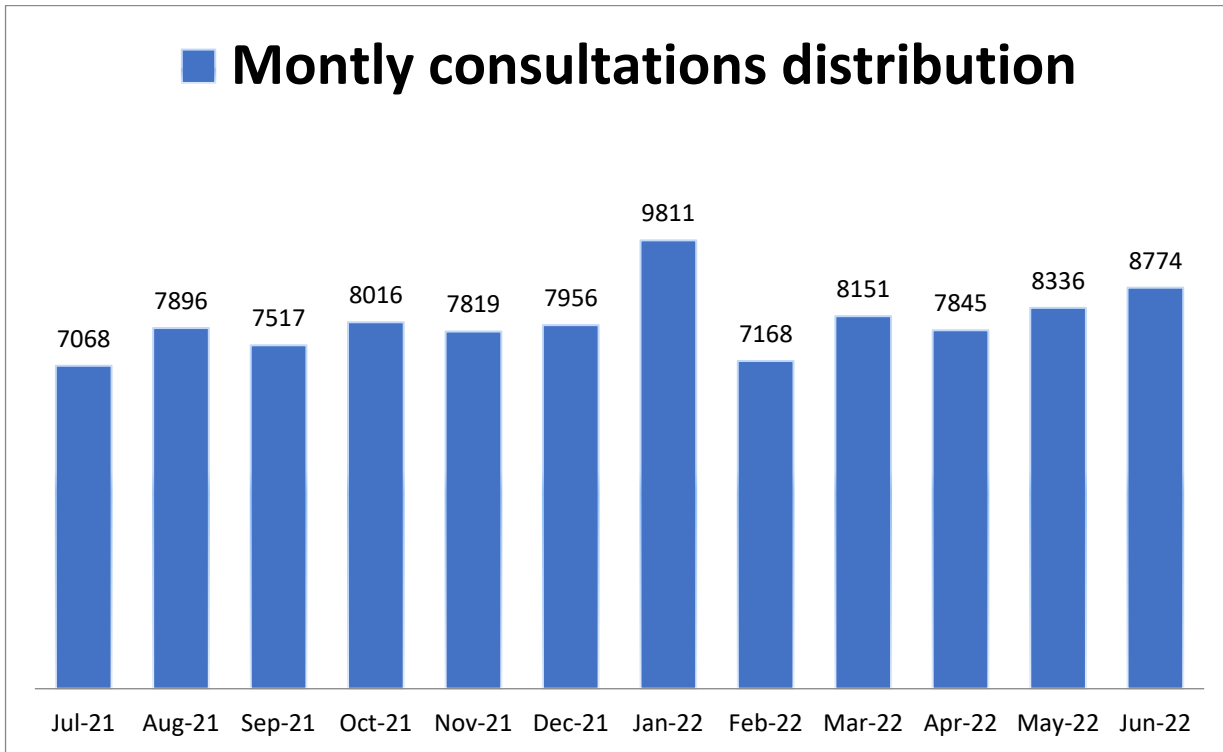


Figure 6: Monthly consultations distribution

January 2022 recorded the highest number of hospitalization, while July 2022 registered the lowest during the year 2021-2022.

2.1.1.2. Consultation per branch

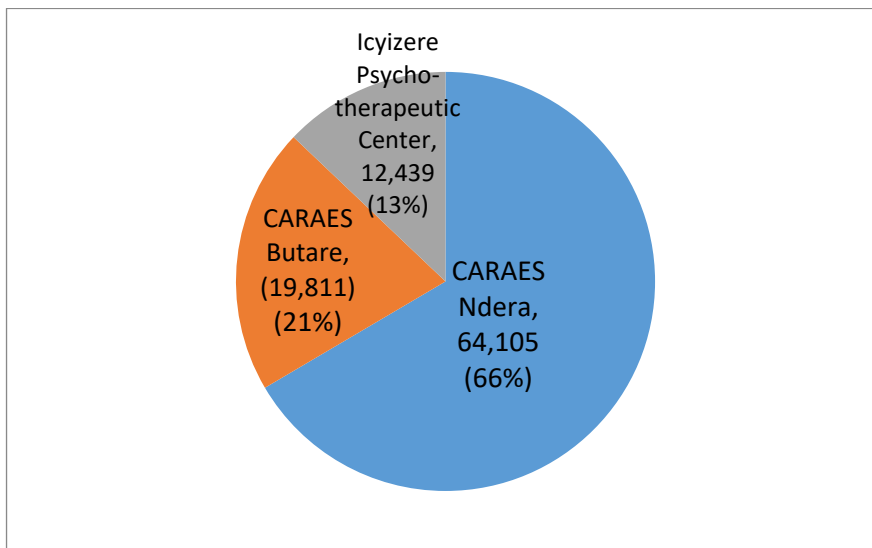


Figure 7: Consultation per branch

Overall, 96,357 patients (all ages), including new and old cases were consulted in the Ndera Neuropsychiatric Hospital. A total of 64,105 patients consulted CARAES Ndera, who comprise 66%

of all the patients, the remaining patients consulted Icyizere Psychotherapeutic Center and CARAES Butare.

2.1.1.3. Consultation per gender

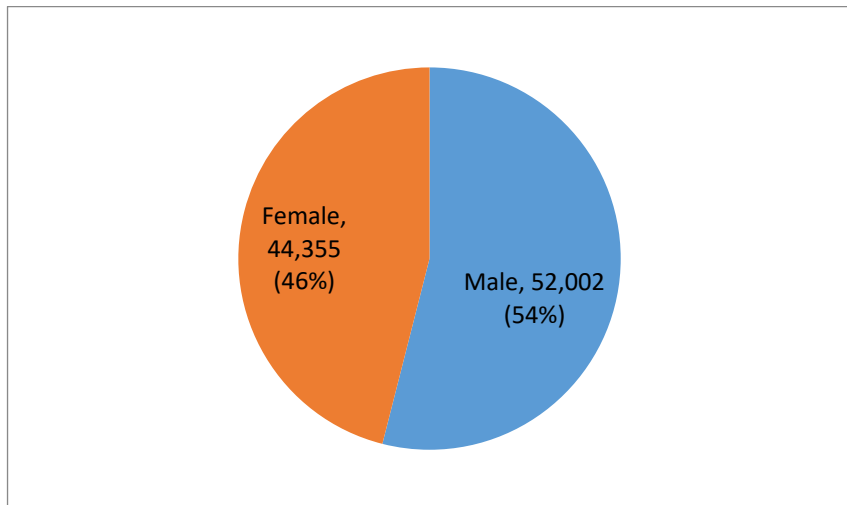


Figure 8: Consultation per gender

The graph shows that the proportion of male consultations is greater than female; males represent 54% whereas females represent 46%.

2.1.1.4. Consultations per age group

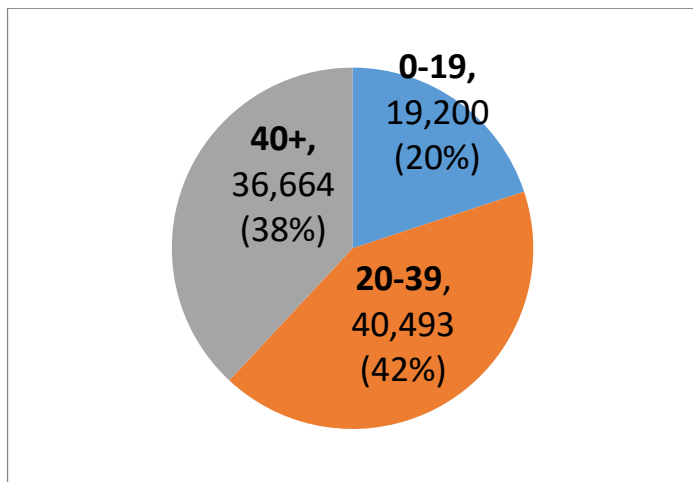


Figure 9: Consultations per age group

Most of the patients were between 20-39 years of age (42%), followed by those above 40 years (38%). The under-19 patients represent 20%.

2.1.1.5. Consultations by provenance

The number of patients consulted from Provinces and City of Kigali

Provenance	Patients received at Ndera	Patients received at Butare	Patients received at Icyizere Center	TOTAL	%
City of Kigali	29,611	861	8,526	38,998	40.47
Northern Province	7,054	1,563	1,004	9,621	9.98
Western Province	6,714	4,954	962	12,630	13.11
Eastern Province	9,892	5,247	941	16,080	16.69
Southern Province	8,537	7,188	977	16,702	17.33
Foreigners	6	0	29	35	0.04
Non specified	2,291	0	0	2,291	2.38
Total	64,105	19,811	12,439	96,357	100%

Table 2: Consultations by provenance

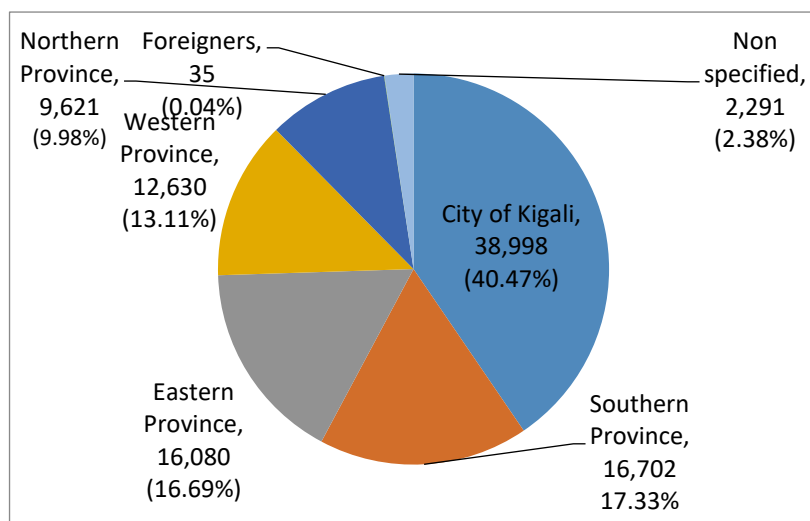


Figure 10: Consultations by provenance

The majority of patients consulted came from the City of Kigali (40.5%), Southern Province (17.3%) and Eastern Province (16.7%).

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

Ward	Patients in crises ward	Patients in improved Ward	Total
Men (Wards A & B)	60	40	100
Women (Wards C & D)	68	40	108
Ituze Center	6	-	6
Pedopsychiatry (Centre Kundwa)	17	-	17
Neurology	-	24	24
Home St Jules	-	19	19
CARAES Butare	59	50	109
Icyizere Center	-	29	29
Total			412

Table 3: Bed capacity

Ndera Neuropsychiatric Teaching Hospital has a capacity of 412 beds, including 109 beds in CARAES Butare and 29 beds in Icyizere Psychotherapeutic Centre. In the fiscal year 2021/2022, the bed occupation rate (Tx) reached 126.3%. (Calculated by applying this formula: $Tx = \frac{\text{Total nights stayed} \times 100}{\text{Number of beds} \times \text{Number of days of year}}$. $Tx = \frac{189896 \times 100}{412 \times 365} = 126.3\%$)

The table below, show inpatients hospitalization according month and Hospital services

Place of care	Caraes Ndera							Caraes Butare		Centre Icyizere		TOTAL
	M	F	Children & Adolescents		HSJ	Neurology		M	F	M	F	
			M	F		M	F					
Month												
July	90	63	13	5	13	12	5	46	32	11	8	298
Aug.	86	105	8	8	13	12	6	49	60	13	16	376

Sept.	131	75	14	7	13	9	8	76	43	21	12	409
Oct.	125	104	12	6	13	6	7	65	44	14	10	406
Nov.	168	114	7	11	13	7	14	58	50	12	9	463
Dec.	156	151	6	9	13	7	5	44	39	8	13	451
Jan.	134	87	6	8	13	13	6	25	24	11	12	339
Feb.	126	130	13	6	13	8	12	66	55	12	13	454
Mar.	164	172	15	11	13	12	19	67	40	11	12	536
Apr.	174	145	6	12	13	11	8	67	31	10	8	485
May	194	118	14	9	13	5	14	65	66	9	10	517
June	160	156	11	8	13	12	4	54	35	44	40	537
TOT	1,708	1,420	125	100	156	114	108	682	519	176	163	5,271

Table 4: Admissions

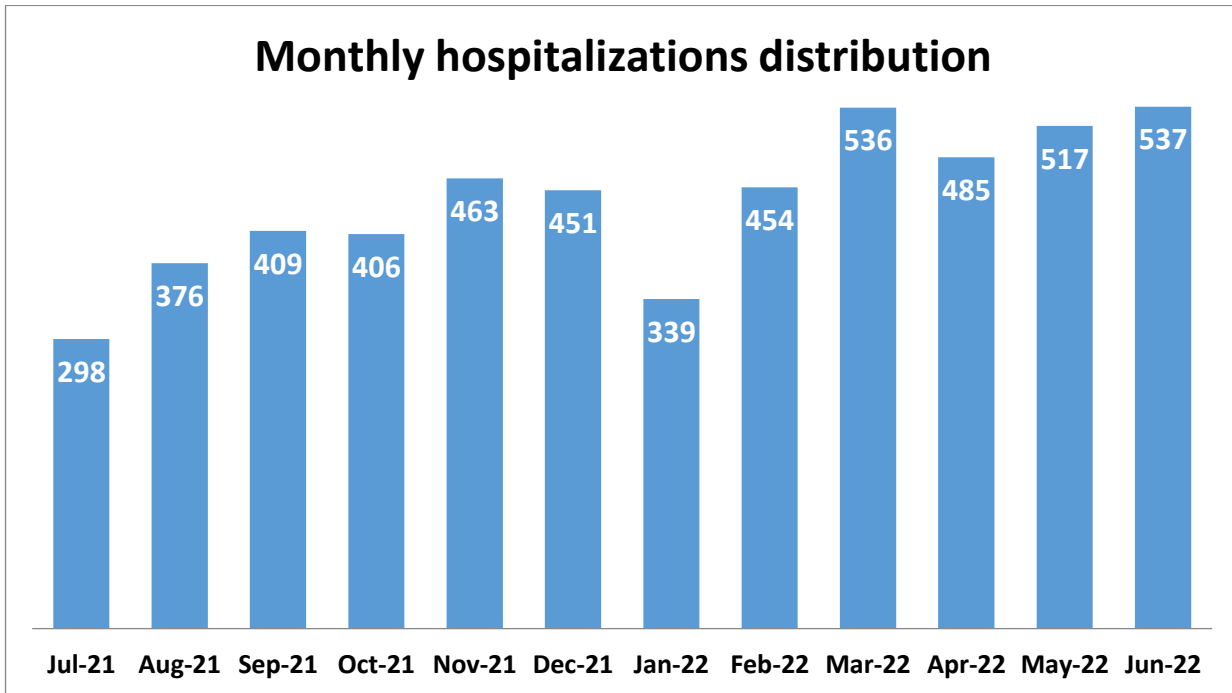


Figure 11: Monthly hospitalizations distribution

The Admission rate has been increased for March, May and June.

2.1.2.2. Hospitalization per branch

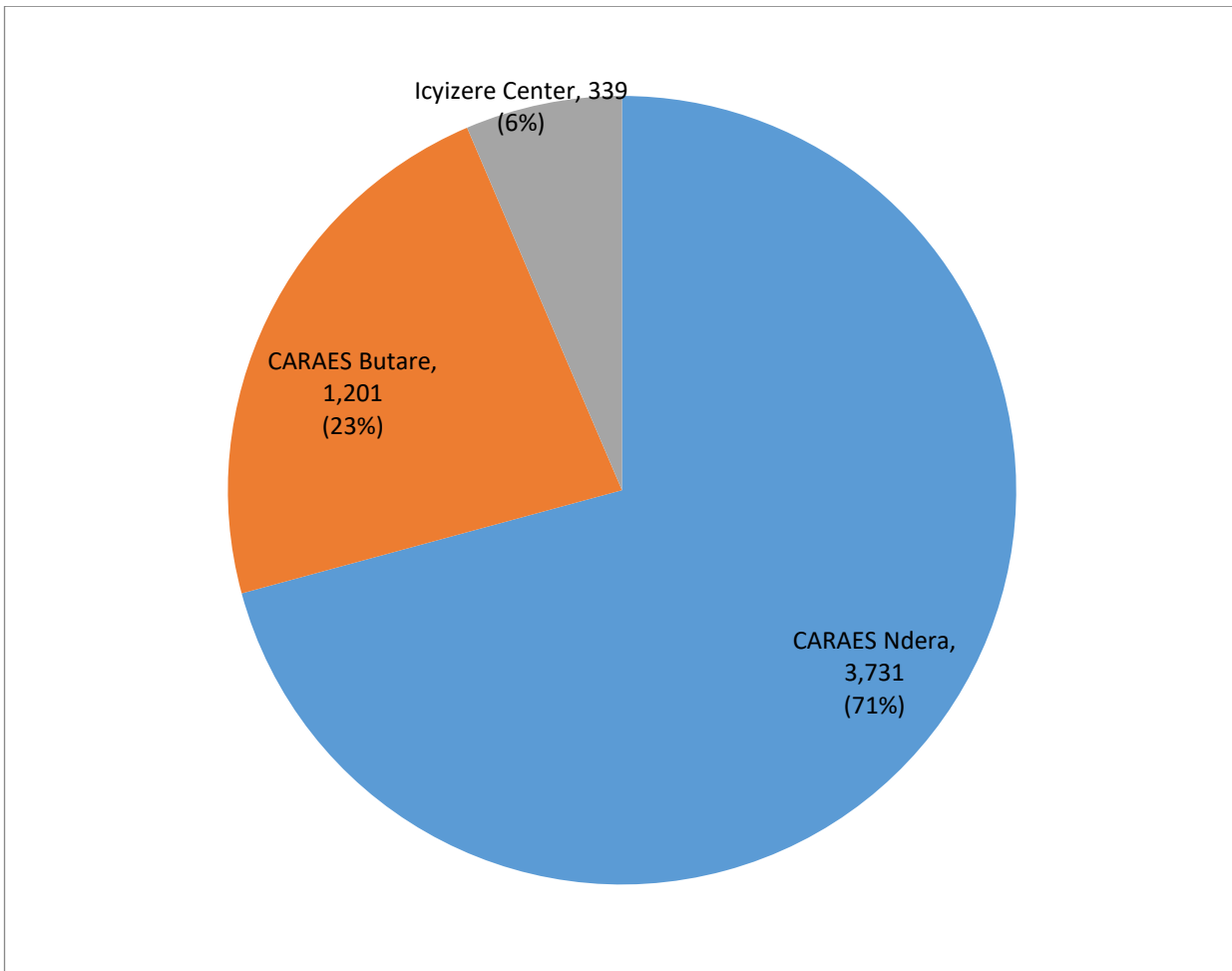


Figure 12: Hospitalization per branch

Overall, 5,271 patients (all ages), including new and old cases were hospitalized in the Ndera Neuropsychiatric Teaching Hospital. A total of 3,731 (71%) patients were hospitalized in CARAES Ndera, 1,201 (23%) patients in CARAES Butare, and 339 (6%) patients in Icyizere Center.

2.1.2.3. Total nights stayed (nuits effectifs)

Place of care	Caraes Ndera					Caraes Butare	Centre Icyizere	TOTAL
	M	F	C& A	HSJ (M+F)	Neurology (M+F+C)	(M+ F)	(M+ F)	
Month								
July	3,766	1,762	320	4,745	432	4,163	541	15,729
Aug.	3,456	1,815	430	4,745	450	3,550	312	14,758
Sept.	3,352	1,525	521	4,745	421	3,254	389	14,207
Oct.	3,620	1,795	680	4,745	203	3,312	421	14,776
Nov.	3,900	2,015	821	4,745	123	3,254	418	15,276
Dec.	3,980	3,850	785	4,745	450	3,510	467	17,787
Jan.	3,850	3,650	451	4,745	228	3,320	540	16,784
Feb.	3,720	4,235	468	4,745	240	3,412	512	17,332
Mar.	3,065	3560	321	4,745	302	4,512	375	16,880
Apr.	3,385	2,591	483	4,745	391	3,325	475	15,395
May	2,782	3,650	401	4,745	445	3,015	402	15,440
June	3,229	3,344	345	4,745	254	3,263	352	15,532
TOT.	42,105	33,792	6,026	56,940	3,939	41,890	5,204	189,896

Table 5: Total nights stayed (nuits effectifs)

2.1.2.4. Length of stay

For the FY 2021/2022, the average of the patient's length of stay in hospitalization was 25 days (calculated by applying this formula: Total nights stayed - nights for Home Saint Jules / Number of admissions; thus the Length of stay = $189896 - 56940 / 5271 = 25$ days). Being a referral hospital in mental health, the average length of stay in our hospital is reasonable 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 following table shows the number of patients discharged during 2021/2022.

Place of care	Caraes Ndera					Caraes Butare	Centre Icyizere	TOTAL
	M	F	C&A	HSJ (M+F)	Neurology (M+F+C)	(M+ F)	(M+ F)	
Month								
July	86	46	22	0	27	77	21	279
Aug.	87	44	23	0	28	78	22	282
Sept.	109	50	15	0	21	90	29	314
Oct.	113	47	9	0	14	44	12	239
Nov.	94	62	6	0	12	48	14	236
Dec.	89	72	10	0	10	45	16	242
Jan.	88	35	8	0	14	47	12	204
Feb.	82	44	7	0	17	42	13	205
Mar.	72	54	6	0	13	65	9	219
Apr.	113	86	9	0	12	48	12	280
May	75	65	11	0	13	42	10	216
June	68	90	14	0	14	50	12	248
TOTAL	1,076	695	140	0	195	676	182	2,964

Table 6: Official discharges

Precisely 2,964 patients were officially discharged by the hospital during the year 2021/2022.

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 202 patients who left the treatment without the doctor's advice.

Place of care Month	CARAES NDERA					CARAES BUTARE	CENTRE ICYZERE	TOTAL
	M	F	C&A	HSJ (M+F)	Neurology (M+F+C)	(M+ F)	(M+ F)	
July	12	2	0	0	0	1	1	16
Aug.	5	2	0	0	0	2	0	9
Sept.	8	3	0	0	0	3	0	14
Oct.	10	2	0	0	0	3	1	16
Nov.	9	4	0	0	1	3	0	17
Dec.	12	5	0	0	0	4	0	21
Jan	10	4	1	0	0	4	1	20
Feb.	12	2	0	0	0	2	2	18
Mar.	8	10	0	0	0	1	0	19
Apr.	11	2	0	0	0	3	1	17
May	7	3	0	0	0	0	0	10
June	15	5	0	0	1	3	1	25
Total	119	44	1	0	2	29	7	202

Table 7: Abandoned care (Non official discharge)

2.1.2.7. Transfers

Transfers to Ndera Neuropsychiatric Teaching Hospital have been done in two steps. Either patients have been transferred by Referral Hospital at Ndera or patients hospitalized at Ndera transferred to others referral hospital for appropriate care.

2.1.2.8. Patients Hospitalized referred by District Hospital and Teaching Hospital by month

Place of Care	CASES NONE REFERRED	TOTAL

Month	CASES REFERRED BY DISTRICT HOSPITAL AND TEACHING HOSPITAL		
July	82	187	269
August	90	293	383
September	120	328	448
October	152	297	449
November	130	322	452
December	114	321	435
January	102	342	444
February	76	356	432
March	180	343	523
April	129	343	472
May	160	346	506
June	93	433	526
TOTAL	1428	3911	5,339
PERCENTAGE	26,75%	73,25%	100%

Table 8: Patients Hospitalized referred by District Hospital and Teaching Hospital by month

2.1.2.9. Transfer and counter transfer to referral hospitals and District Hospitals

MONTH	Destination	TRANSFER AND COUNTER TRANSFER TO REFERRAL AND DISTRICT HOSPITAL	PERCENTAGE
July		41	2.32
August		144	8.14
September		150	8.48
October		166	9.39
November		137	7.75
December		157	8.88
January		182	10.29
February		138	7.81
March		160	9.05
April		137	7.75
May		153	8.65
June		203	11.48
TOTAL		1,768	100%

Table 9: Transfer and counter transfer to referral hospitals and District Hospitals

2.1.2.10. Patients accompanied by Police

Those patients have been found on the road by Rwanda National Police, and brought to Ndera for their security and the public movement. Some of them have no social assistance and are in errance.

The table below shows the number of patients brought by the Police.

Place of care Month	Caraes Ndera		Caraes Butare	Centre Icyizere	TOTAL
	M	F	(M+ F)	(M +F)	
July	5	1	4	0	10
Aug.	3	3	3	0	9
Sept.	4	5	2	0	11
Oct.	7	4	3	0	14
Nov.	6	3	1	0	10
Dec.	3	4	4	0	11
Jan.	5	3	0	0	8
Feb.	2	4	1	0	7
Mar.	8	4	1	0	13
Apr.	4	6	4	0	14
May	5	4	3	0	12
June	8	6	4	0	18
TOTAL	60	47	30	0	137

Table 10: Patients accompanied by Police

2.1.2.11. Deaths

The numbers of Death registered are presented into the table below.

Place of care	Caraes Ndera					Caraes Butare	Centre Icyizere	TOTAL
	M	F	C&A	HSJ (M+F)	Neurology (M+F+E)	(M +F)	(M +F)	
Month								
July	0	0	0	0	0	0	0	0
Aug.	0	0	0	0	0	0	0	0
Sep.	1	0	0	0	0	0	0	1
Oct.	0	1	0	0	0	0	0	1
Nov.	0	0	0	0	0	1	0	1
Dec.	0	0	0	0	0	0	0	0
Jan.	1	0	0	0	1	0	1	3
Feb.	0	3	0	0	0	0	0	3
Mar.	0	1	0	0	0	0	0	1
Apr.	0	0	0	0	0	0	0	0
May	0	2	0	0	0	0	0	2
June	1	1	0	0	1	0	0	3
TOTAL	3	8	0	0	2	1	1	15

Table 11: Deaths

2.1.2.12. Comparison of activities for 5 years

ACTIVITES	2017	2018	2019	2020/2021	2021/2022
Consultations	70,444	69,888	73,675	74,363	96,357
Hospitalizations	5,003	5,329	5,364	4,736	5271
<i>Nuits effectifs</i>	175,858	188,341	206,599	269,045	189,896
Discharges	3,166	3,226	3,582	3,024	2,964

Table 12: Comparison of activities for 5 years

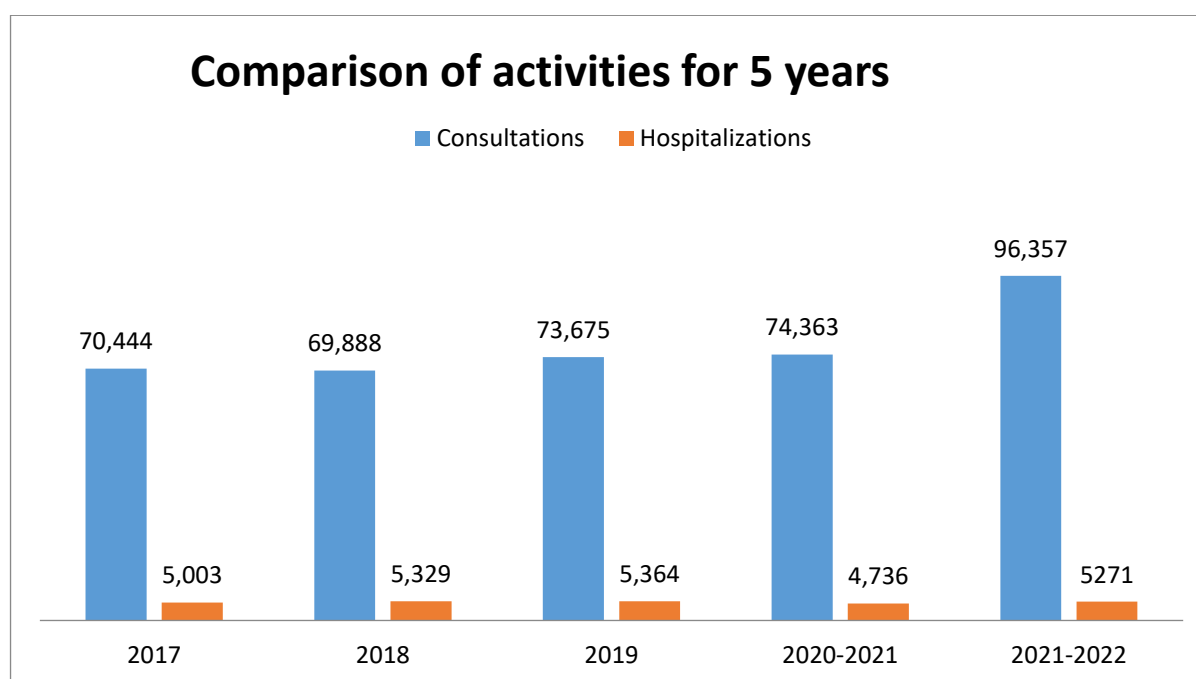


Figure 12: Comparison of activities for 5 years

The number of patients in outpatients' consultation has been increasing over the last four years, and reached a record high in 2021/2022, while hospitalizations have once again increased from the previous year.

2.1.3. Diagnostics

The following statistics show the pathologies that make patients come to Ndera Neuropsychiatric Teaching Hospital.

2.1.3.1. Diagnostics in psychiatric outpatients department

N°	PATHOLOGIES	AGE			TOTAL	%
		0-19 y/o	20-39 y/o	40 +		
F00-F09	Organic, including symptomatic, mental disorders	10	6	192	208	0.27
F10	Mental and behavioral disorders due to use of alcohol	40	208	201	449	0.58
F14	Mental and behavioral disorders due to use of cocaine	0	1	1	2	0.00
F12	Mental and behavioral disorders due to use of cannabinoids	58	412	302	772	1.01
F10-F19	Mental and behavioral disorders due other psychoactive substances	50	350	78	478	0.62
F20	Schizophrenia	5,480	1,5850	14,251	35,581	46.35
F23	Acute and transient psychotic disorders	356	5,580	5,125	11,061	14.41
F20-F28	Other psychotic disorders (Other Psychological problems)	54	450	352	856	1.12
F32	Depression	108	5,125	2584	7,817	10.18
F30	Mania	58	215	86	359	0.47
F31	Bipolar disorders	2548	5,215	3214	10,977	14.30
F30-F39	Other mood disorders	8	45	85	138	0.18
F45	Somatoform disorders	687	2,154	3420	6,261	8.16
F43.1	Post-Traumatic Stress Disease (PTSD)	14	28	88	130	0.17

F40-F48	Other Neurotic disorders (Neurological problems)	78	245	308	631	0.82
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors	6	30	20	56	0.07
F60-F69	Disorders of adult personality and behavior	5	8	6	19	0.02
F70-F79	Mental retardation	88	67	11	166	0.22
F80-F89	Disorders of psychological development	22	0	13	35	0.05
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence	94	25	7	126	0.16
F99-F99	Unspecified mental disorder	14	21	5	40	0.05
	NCDs	0	5	55	60	0.08
	Others comorbidity	3	61	84	148	0.19
	Without Diagnosis	23	128	201	352	0.46
	Others	9	12	25	46	0.06
	TOTAL	9,813	35,941	31,014	76,768	100

Table 13: Diagnostics in psychiatric outpatients department

Frequent pathologies in psychiatry consultation

1. Schizophrenia (46.35%)
2. Acute and transient psychotic disorder (14.41%)
3. Bipolar Disorder (14.30%)

4. Depression (10.18%)

5. Somatoforms (8.16%)

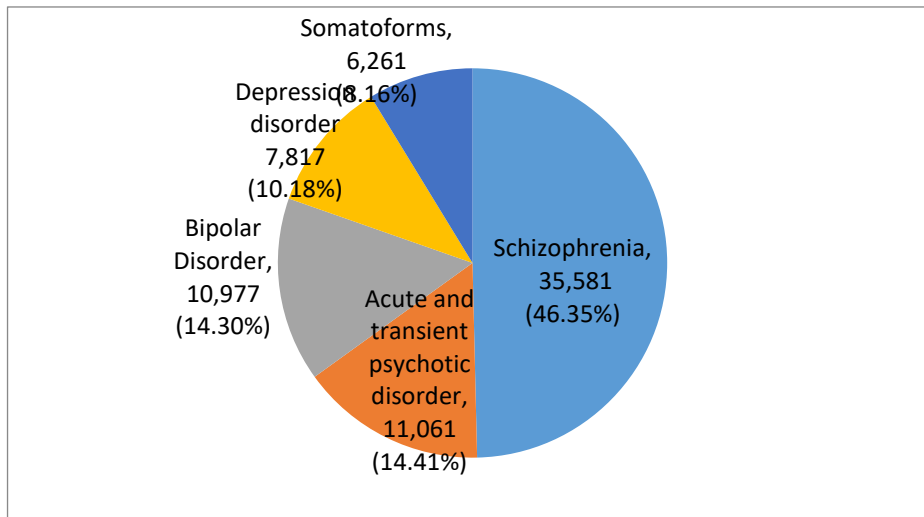


Figure 13: Frequent pathologies in psychiatry

2.1.3.2. Diagnostics in neurology outpatient department

N0	PATHOLOGIES	0-19 y/o	20-39 y/o	40 y/o & above	TOTAL	%
G10-G14	Systemic atrophies primarily affecting the central nervous system	0	0	5	5	0.03
G30-G32	Other degenerative diseases of the nervous system	0	0	8	8	0.04
G20	Parkinson disease	0	316	529	845	4.27
G20-G26	Other Extra pyramidal and movement disorders	2	89	145	236	1.19
G35-G37	Demyelinating diseases of the central nervous system	0	1	6	7	0.04
G40	Epilepsy	8,851	3,003	1,483	13,337	67.41
G41	Status epilepticus	85	32	8	125	0.63
G43	Migraine	258	421	354	1,033	5.22
G44	Other headache syndromes	852	1546	1,235	3,633	18.36

G45	Transient cerebral ischemic attacks and related syndromes	0	0	5	5	0.03
G46	Vascular syndromes of brain in cerebrovascular diseases	0	0	5	5	0.03
G47	Sleep disorders	3	58	65	126	0.64
G50-G59	Nerve, nerve root and plexus disorders	0	12	24	36	0.18
G60-G64	Polyneuropathies and other disorders of the peripheral nervous system	0	5	18	23	0.12
G70-G73	Diseases of myoneural junction and muscle	0	9	14	23	0.12
G80-G83	Cerebral palsy and other paralytic syndromes	0	4	1	5	0.03
G90-G99	Other disorders of the nervous system	2	8	8	16	0.08
	NCD'S	0	6	1	7	0.04
	Without Diagnosis	8	25	52	85	0.43
	Others comorbidity	1	1	0	2	0.01
	Others	5	8	12	25	0.13
	TOTAL	10,067	5,544	3,978	19,785	100

Table 14: Diagnostics in neurology outpatient department

Frequent pathologies in Neurology:

1. Epilepsy (67.41%)
2. Headaches (18.36%)
3. Migraine (5.22%)
4. Parkinson (4.27%)
5. Other extra pyramidal and movement disorders (1.19%)

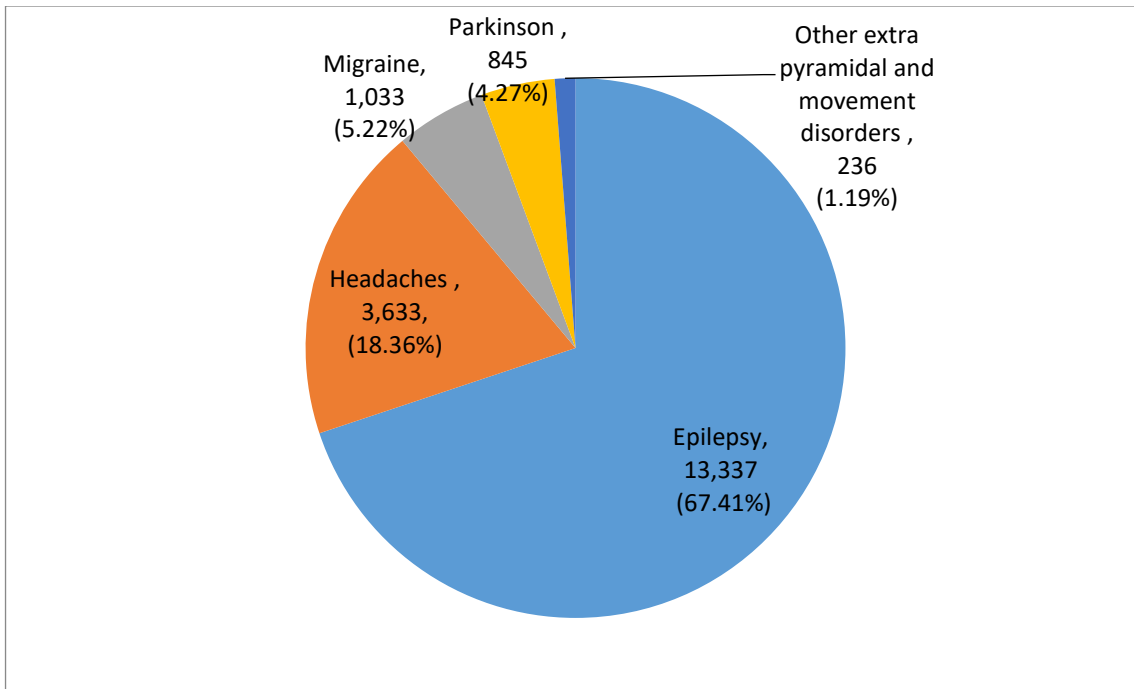


Figure 14: Frequent pathologies in Neurology

2.1.3.3. Overall top five pathologies (Psychiatry & Neurology combined)

Nº	Pathology	Department	Total	Percentage
1	Schizophrenia	Psychiatry	35,581	36.93%
2	Epilepsy	Neurology	13,337	13.84%
3	Acute and transient psychotic disorders	Psychiatry	11,061	11.48%
4	Bipolar disorders	Psychiatry	10,977	11.39%
5	Depression	Psychiatry	7,817	8.11%

Table 15: Overall top five pathologies (Psychiatry & Neurology combined)

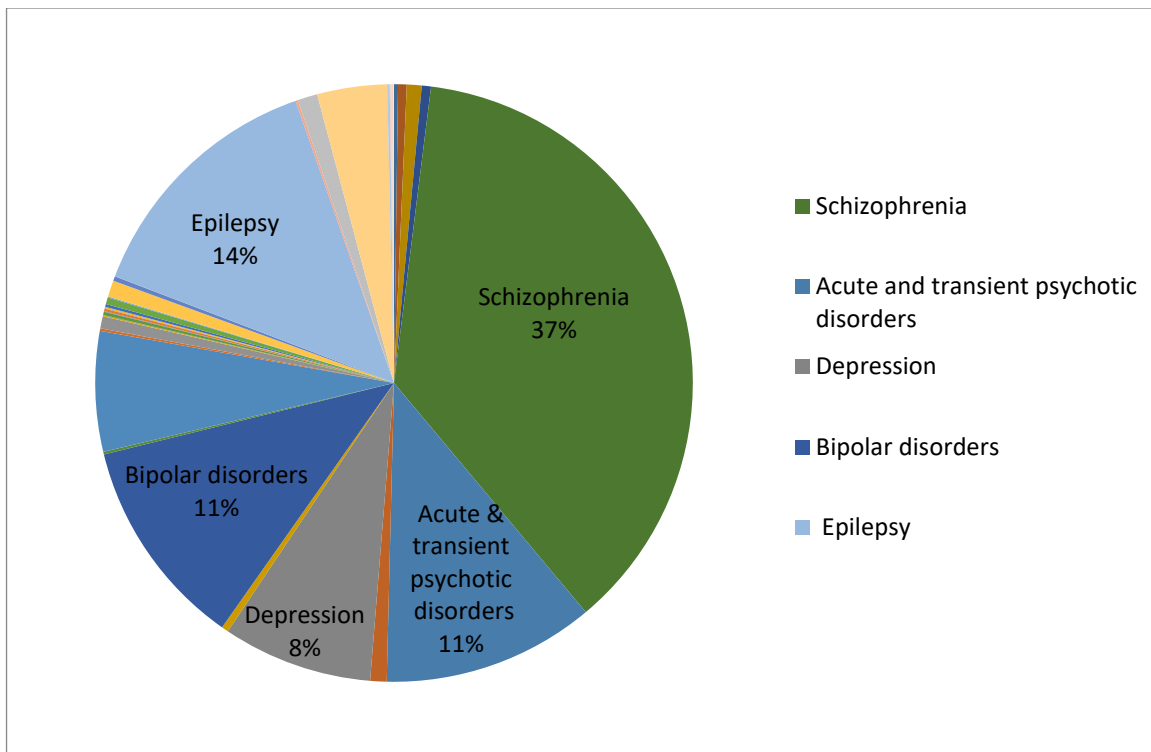


Figure 15: Top five pathologies (Psychiatry & Neurology combined)

Schizophrenia leads among all pathologies recorded at the Hospital, with 35,581 cases, which make 37% of all cases registered. Epilepsy is the only neurological disorder on the list of top 5 pathologies, with 14% prevalence. Despite the increase of all pathologies compared to the previous year, depression is new on the list of top five pathologies this year.

2.1.3.4. Causes of hospitalization in psychiatry department

N°	PATHOLOGIES	AGE			TOTAL	%
		0-19 y/o	20-39 y/o	40 y/o and above		
F00-F09	Organic mental disorders	0	0	4	4	0.12%
F10	Mental and behavioral disorders related to alcohol use	8	80	30	118	2.33%
F14	Mental and behavioral disorders related to cocaine use	0	2	1	3	0.06%
F12	Mental disorders and behavioral disorders related to the use of cannabis	27	160	20	207	4.1%

F10-F19	Mental disorders and behavioral disorders related to the use of other substances	18	87	16	121	2.39%
F20	Schizophrenia	165	1,071	661	1,897	37.57%
F23	Acute and transient psychotic disorders	100	766	288	1,154	22.85%
F20-F28	Other psychotic and schizotypal disorders	9	110	55	172	3.41%
F32	Depression	10	80	37	127	2.51%
F30	Mania	10	130	16	156	3.09%
F31	Bipolar affective disorder	35	431	340	806	16%
F30-F39	Other mood disorders	0	2	1	3	0.19%
F45	Somatoform Disorders	65	50	4	119	2.35%
F43.1	Post-traumatic stress disorder (PTSD)	1	3	9	13	0.35%
F40-F48	Other neurotic disorders	1	7	0	8	0.04%
F50-F59	Behavioral syndromes associated with physiological disturbances	8	1	0	9	0.04%
F60-F69	Adult personality and behavioral disorders	0	0	1	1	0.02%
F70-F79	Mental retardation	18	5	0	23	0.45%
F80-F89	Psychological developmental disorders	0	0	0	0	0.06%

F90-F98	Behavioral and emotional disorders in childhood or adolescence	30	5	0	35	0.69%
F99-F99	Mental disorders not specified	14	49	8	71	1.40%
	TOTAL	519	3,039	1,491	5,049	100

Table 16: Causes of hospitalization in psychiatry department

Top five causes of hospitalization in psychiatry department

1. Schizophrenia (37.57%)
2. Acute and transient psychotic disorders (22.85%)
3. Bipolar disorders (16%)
4. Mental and behavioral disorders related to the use of cannabis (4.1%)
5. Other psychotic and schizotypal disorders (3.41%)

2.1.3.5. Causes of Hospitalization in neurology department

N0	PATHOLOGIES	0-19 ans	20-39 ans	40 et plus	TOTAL	%
G10-G14	Systemic atrophies primarily affecting the central nervous system	0	0	3	3	1.35%
G30-G32	Other degenerative diseases of the nervous system	0	3	0	3	1.35%
G20	Parkinson disease	1	2	2	5	2.25%
G20-G26	Other Extrapyrarnidal and movement disorders	1	1	1	3	1.35%
G35-G37	Demyelinating diseases of the central nervous system	0	0	2	2	0.90%
G40	Epilepsy	107	43	29	179	81.08%
G41	Status epilepticus	0	0	0	0	0.27%

G43	Migraine	1	10	2	13	5.85%
G44	Other headache syndromes	0	0	3	3	1.35%
G45	Transient cerebral ischemic attacks and related syndromes	0	0	1	1	0.45%
G46	Vascular syndromes of brain in cerebrovascular diseases	0	1	1	2	0.90%
G47	Sleep disorders	0	0	0	0	0%
G50-G59	Nerve, nerve root and plexus disorders	0	0	0	0	0%
G60-G64	Polyneuropathies and other disorders of the peripheral nervous system	0	0	0	0	0%
G70-G73	Diseases of myoneural junction and muscle	0	0	0	0	0.55%
G80-G83	Cerebral palsy and other paralytic syndromes	0	0	0	0	0.55%
G90-G99	Other disorders of the nervous system	5	1	2	8	3.60%
	TOTAL	115	61	46	222	100

Table 17: Causes of Hospitalization in neurology department

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

1. Epilepsy (81.08%)
2. Migraine (5.85%)
3. Other disorders of the nervous system (3.60%)
4. Parkinson disease (2.25%)
5. Other headache syndromes (1.35%)

2.2. Nursing Department

2.2.1. Introduction

The year 2021/2022 was marked by various nursing activities, including the activities against Covid-19 pandemic, where the mental health and somatic care have been provided. Most of activities have been continued, namely clinical case review, medical round for hospitalized patients, coaching of nurses, colloquium, patient group and nursing care and interviews.

The Nursing Department is comprised of: Emergency Service, Men's crisis Ward (WA), ward for improved men (WB), Women's crisis Ward (WD), and ward for improved female (WC), Private Hospitalization Service, Neurology Service, Kundwa Center, Home Saint Jules (HSJ), Icyizere Psychotherapeutic Center and CARAES Butare.

2.2.2. Clinical case review

Clinical case review is a multidisciplinary team, in which doctors, psychologists, physiotherapist, social workers, nurses, and occupational therapists meet for a common understanding and review the management of the patients as a whole, using a multidisciplinary approach to provide health care services. All hospital services perform this activity in the chosen days, depending on the availability of the multidisciplinary team, where the discussion is done using SBAR approach to maximize the number of patients to be discussed.

2.2.3. 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.

2.2.4. Coaching of nurses

Coaching is a process aimed at improving the behaviour and performance of the health care providers to provide quality specialised health service. Ndera Neuropsychiatric Teaching Hospital has initiated the coaching system for nurses from 2014. Every ward in the hospital and its branches has nominated assistant coaches who work collaboratively with coaching coordinator in a supportive manner for nurses.

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

2.2.5. 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.

2.2.6. Patient group

Patient group is an organized gathering of patients with psychiatric and other conditions with multidisciplinary team. It helps on evaluation of mental state, evolution of illness and health education through a chosen 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 Thursday due to particular activities.

The table below shows the aforementioned summarized activities frequency in the hospitals:

Service	Medical round	Patient group	Colloquium
WA	177	132	31
WB	85	333	47
WC	101	139	38
WD	123	126	40
CK	99	70	51
Private Hospitalization	178	139	51
Neurology	198	0	42
Total	961	939	300

Table 18: Nursing activities frequency

The table above shows that 961 of medical round have been performed for inpatients. The biggest number of medical round executed was observed in Neurology Service. Each patient hospitalized is

visited by medical staff at least four 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 939 in total. Each hospital service organizes patient group therapy at least 4 days a week. The high number of patient groups performed is observed at ward B and we experienced exponential increase of Covid-19.

Colloquium or multidisciplinary teams performed in hospital wards/services are 300 in total. The colloquium is planned and executed at least one time a week to discuss on patients health condition and evolution. The highest number of colloquium performed is observed in the Private Hospitalization Service and Kundwa Center.

2.2.7. Interviews

The psychiatric interview refers to the set of tools that a mental health providers use in order to know the information of the patient's illness (background, chief complaint, mental status, disease and personal history) and providing psychoeducation. This is done during admission, hospitalization, at family member visit and before discharge, and it involves patients, health care providers, family members or both. Every patient/family member in psychiatric settings underwent interview (data collection, psycho-education, family/group therapies) during the hospitalization period.

2.2.8. Nursing Care (Vital signs, wound dressing, drug administration, patient hygiene)

Nursing care involves all nursing interventions done by nurses to meet and safe guards the patients' needs like vital signs, wound dressing, drug administration and patient hygiene.

2.2.8.1. 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, they are taken three times a day.

2.2.8.2. 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.

2.2.8.3. 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.

2.2.8.4. 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.

2.2.9. Health education in hospitalization

It is done during patient group, 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...), planned calendar like HIV/AIDS, chosen topic during patient group.

2.2.10. Home Saint Jules

Home Saint Jules is a residence for the chronic mental patients, social cases of the Ndera Neuropsychiatric Teaching Hospital, 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 2021/2022, the hostels had 17 patients and the majority of them are above 45 years old. The service has 11 members of staff: 6 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 though they have psychological, physical and/or moral difficulties.
- Helping them to take care of their body and clothes.
- 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.

2.2.11. Challenges in general

- Different services still need enough resuscitation materials
- The emergency service should have a waiting room for 24 hours observation
- The ward in crisis still has the problems of over clouding of patients
- Small number of private room
- One ambulance is not enough we are requesting two more
- Small number of nurses compared with the number of the hospitalized patients (Ward C, Private Hospitalization Service, Emergency, Caraes Butare and Icyizere Center).

2.2.12. Recommendations

- ✚ The hospital administration should help to find the enlargement of emergency service for 24hrs observations of admitted patient before being transferred to different wards.
- ✚ The hospital management together with medical service should reinforce the counter transfer mechanism to reduce the over clouding of the patients in acute wards, we are suggesting that patients who accompanied by Police ,and security should pass to nearest District Hospital, then district hospital can transfer the patient by following the structure of transferring structured by the Ministry of Health.
- ✚ Private rooms need to be increased to accommodate all VIP patients in need of service.
- ✚ The enlargement of the hospital need to be complying with the number of staffs (nurses)

2.2.13. HIV Service

2.2.13.1. Introduction

In Rwanda, a pilot program was initiated at Ndera Neuropsychiatric Teaching Hospital, 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 here concerned with those patients with co-morbidities HIV and mental disorder that are followed on a daily basis. Actually, in service there are social worker and mental health nurses, psychologist and medical doctor who are working with the patient day to day providing holistic care to our clients suffering from co-morbidity of HIV and Psychiatric conditions according to protocol and National guidelines 2018-2019. Furthermore, there are service entry point such as hospitalization unit, outpatient department (OPD), Clients with other neurological conditions and Transfer in from other health settings. The total number of clients enrolled includes those who transferred, 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 counseling if need.

In addition, the service has different activities working daily to daily includes PIT, counseling 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. This apart of the report will describe main activities including HIV testing and counseling (PIT), patient linkage to care and treatment report, post- exposure prophylaxis (PEP), enrollment and ART, number of patients on ART, Total number of patients on ART regimens, STIs and OIs screening report followed by recommendations and suggestions and limitations of our service.

2.2.13.2. Main activities with achievements

a. HIV Testing and Counseling (PIT)

	05 years -19 Years		20-24 years		25-49 years		50-above	
	Male	Female	Male	Female	Male	Female	Male	Female

Client counseled and tested for HIV through HTC	27	36	40	49	163	247	31	23
Client tested HIV positive through HTC	0	0	0	0	1	9	1	0
Number of HIV positive client linked to care and treatment	0	0	0	0	1	9	1	0
Couples counseled and tested for HIV through HTC	0	0	0	0	0	0	0	0
Discordant couples identified through	0	0	0	0	0	0	0	0

Table 19: HIV Testing and Counseling (PIT)

b. Post- Exposure Prophylaxis (PEP)

No		Numbers
1	Clients at risk of HIV infection as a result of rape/sexual assault	2
2	Clients at risk of HIV infection as a result of rape/sexual assault who received PEP	2
3	Clients at risk of HIV infection as a result of other non-occupational exposure including road's accidents	1
4	Clients at risk of HIV infection as a result of other non-occupational exposure including road's accidents who received PEP	1
5	Clients at risk of HIV infection as a result of occupational exposure	7
6	Clients at risk of HIV infection as a result of occupational who received PEP	7

Table 20: Post- Exposure Prophylaxis (PEP)

c. Enrollment and ART

	10-14 years		15-19 years		20-24 years		25 and above years	
	male	female	male	female	male	female	male	female

Total number of clients initiated on ART.	0	0	0	0	0	4	8	1
Total number of clients with recent HIV infection among initiated on ART	0	0	0	0	0	0	0	0

Table 21: Enrollment and ART

d. Number of Patients on ART

	10-14 years		15-19 years		20-24 years		25 and above years	
	male	female	Male	female	male	female	Male	Female
Total number of clients on ART	0	1	2	0	2	4	39	96

Table 22: Number of Patients on ART

e. Total number of patients on ART regimens line

	Adult (>= 15 years)	
	Male	Female
Patients on 1 st line regimen	38	97
Patients on 2 nd line regimen	4	3
Patients on 3 rd line regimen	0	0

Table 23: Total number of patients on ART regimens line

f. Sexually Transmitted Infection (STI)

	29days to 14 years	15 to 19 years	20 to 24 years	25years to above
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Clients who received screening and counseling on STI	3	16	230	887
Clients confirmed positive for STIs	0	0	0	0
Clients confirmed positive for STIs who are HIV positive	0	0	0	0
STIs cases treated	0	0	0	0

Table 24: Sexually Transmitted Infection (STI)

2.2.13.3. Limitations

In general, the HIV-Mental health integration service meets with limitations, where the patient disobeyed their appointment for pharmacy visit and support group, leading them to poor adherence due to relapse of psychiatric disorder and social issues of patient, such as life style and conditions. Therefore, as service team followed patient on a daily basis are trying to overcome those situations, in order to improve and ensure prevention, treatment, care and support of people with both HIV and mental problems.

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 2021/2022.

In/out patients

In/out	Numbers	Percentage
Outpatient	1,388	70%

Hospitalization	592	30%
total	1,980	100%

Table 25: In/out patients in physiotherapy

The table above indicates that 70% of treated cases are outpatients whereas 30% are inpatients.

Category per pathologies

Type of cases	Numbers	Percentage
Neurology	1,439	73%
Orthopedic	78	3%
Traumatic	117	5%
Psychiatric	205	11%
Rheumatology	141	8%
Total	1,980	100%

Table 26: Category per pathologies

The above table indicates that 73% of the cases treated in Physiotherapy Service are neurological, others are psychiatric 11%; Rheumatology 8%, traumatic are 5% and orthopedic 3%.

2.3.2. General Laboratory

2.3.2.1. Introduction

The Ndera Neuropsychiatric Teaching Hospital has a General Laboratory Service performing various laboratory tests contributing to the effectiveness of patient monitoring. This service has five (7) Laboratory Technicians, (4 at CARAES Ndera, two (2) at CARAES Butare and One at Psychotherapeutic Centre ICYIZERE) and provides health diagnostic in the following tests: Biochemistry, Hematology, Bacteriology, immunoserology, serology, parasitology, dosage of drugs, Toxicology and Covid 19 tests.

In general, 96,702 tests were done, this shows increase of 25.7% compare to the tests of previous year; at CARAES NDERA 69,026 tests were done with increase of 22.9% compared to the first year, at Icyizere Psychotherapeutic Center 5,973 tests were done, with 30.9% increase compared to first year, while 21,705 tests were done at CARAES Butare, with 45.05% increase compared to previous year.

2.3.2.2. Laboratory tests carried out

Below are the details on the tests carried out throughout the year 1st July 2021 to 30th June 2022

a. Laboratory tests carried out at Caraes Ndera

N0	Services	Laboratory Tests	Positive	Negative	Total
1	PARASITOLOGY	Thick smear	10	310	320
		Stool analysis			134
2	BACTERIOLOGY AND MYCOBACTERIOLOGY(TB)	Urine Direct examination			190
		Urine Gram staining			32
		Vaginal swab Direct examination			33
		Vaginal swab Gram stain			15
		Uretral swab			6
		Uretral gram			2
		CSF& Body fluids			3
3	BIOCHEMISTRY&IONOGRAM	Glucose			3,584
		Urea			3,881
		Creatinine			3,868
		Alanine aminotransferase (ALAT/SGPT)			3,835
		Aspartate Aminotransferase (ASAT/SGOT)			3,843
		Gamma-Glutamyltransferase (GGT)			3,320
		Glycosuria			30
		Total Protein			1,928
		Proteinuria(Urine Protein)			54
		Alkaline Phosphatase (ALP)			2,643
		Total Bilirubin (Bil-T)			2,826
		Direct Bilirubin (Bil-D)			2,803
		Uric Acid			1,982
		Low Density Lipoprotein(LDL-Cholesterol)			928
		High Density Lipoprotein (HDL-Cholesterol)			946
		Cholesterol			948
		Triglycerides			917
		dehydrogenase Lactate (LDH)			1,714
		Creatine Kinase(CKL)			124
		Creatine kinase-MB (CK-MB)			39
Albumin			2,552		
Glycated Hb			239		

		Vitamine B12 Blood concentration			65
		Folic Acid(B9 Vitamin)			49
		Ferritin			24
		IRON			17
		Sodium (Na+)			3,186
		Potassium (K+)			3,189
		Lithium (Li+)			172
		Magnesium (Mg++)			199
		Calcium			241
		Chloride(Cl ⁻)			3,066
	SEROLOGY&IMMUNOLOGY	C-Reactive proteine (CRP)			2,566
		VDRL/RPR	6	43	49
		Pregnancy test	18	226	244
		HCV test(Hepatitis C test)	35	2,142	2,178
		AgHBs(Hepatitis B test)	40	2,059	2,100
		Arthri-Test/RF			122
		ASLO			83
		PSA			31
5	HEMATOLOGY	Erythrocyte Sedimentation rate			80
		Full Blood Count			4,287
		ABO Rhesus/Cross Matching			13
6	DRUG MONITORING/TOXICOLOGY	PHNY2(Phenytoin)			41
		PHNO2(Phenobarbatal)			64
		VALP2(Valproid Acid)			323
		CARB2(Carbamazepine)			141
		CANNABINOIDS			63
7	ENDOCRINOLOGY	T3(Triiodothyronin)			808
		T4(Thyroxin)			822
		TSH(Thyroid Stimulating Hormon)			584
		Others tests			480
	Total				69,026

Table 27: Laboratory tests carried out at Caraes Ndera

b. Laboratory tests at Icyizere Psychotherapeutic Centre

N0	Services	Laboratory Tests	Positive	Negative	Total
1	PARASITOLOGY	Thick smear	0	4	4
		Stool analysis			2

2	BACTERIOLOGY AND MYCOBACTERIOLOGY(TB)	Urine Direct examination		3
		Vaginal swab examination/Gram		0
		Uretral swab/ gram		0
		CSF& Body fluids		0
3	BIOCHEMISTRY&IONOGRAM	Glucose		238
		Urea		289
		Creatinine		285
		Alanine aminotransferase (ALAT/SGPT)		293
		Aspartate Aminotransferase (ASAT/SGOT)		293
		Gamma-Glutamyltransferase (GGT)		279
		Glycosuria		8
		Total Protein		210
		Proteinuria/albiminuria		3
		Alkaline Phosphatase (ALP)		241
		Total Bilirubin (Bil-T)		263
		Direct Bilirubin (Bil-D)		263
		Uric Acid		173
		Low Density Lipoprotein(LDL-Cholesterol)		112
		High Density Lipoprotein (HDL-Cholesterol)		99
		Cholesterol		122
		Triglycerides		122
		dehydrogenase Lactate (LDH)		146
		Creatine Kinase(CKL)		1
		Creatine kinase-MB (CK-MB)		0
		Albumin		257
		Glycated Hb		23
		Vitamine B12 Blood concentration		3
		Folic Acid(B9 Vitamin)		3
		Ferritin		2
		IRON		7
		Sodium (Na+)		254
		Potassium (K+)		253
		Lithium (Li+)		18
		Magnesium (Mg++)		1
		Calcium		4
		Chloride(Cl ⁻)		254
SEROLOGY&IMMUNOLOGY	C-Reactive proteine (CRP)		239	

		VDRL/RPR	0	5	5
		Pregnancy test	1	7	8
		HCV test(Hepatitis C test)	1	217	218
		AgHBs(Hepatitis B test)	1	216	217
		Arthri-Test/RF			0
		ASLO			0
		PSA			0
5	HEMATOLOGY	Erythrocyte Sedimentation rate			0
		Full Blood Count			299
		ABO Rhesus/Cross Matching			1
6	DRUG MONITORING/TOXICOLOGY	PHNY2(Phenytoin)			0
		PHNO2(Phenobarbital)			1
		VALP2(Valproic Acid)			1
		CARB2(Carbamazepine)			2
		CANNABINOIDS	28	64	92
		Other Drug of abuse			328
					10
7	ENDOCRINOLOGY	T3(Triiodothyronin)			11
		T4(Thyroxin)			11
		TSH(Thyroid Stimulating Hormon)			11
		Others tests			2
	Total				5973

Table 28: Laboratory tests at Icyizere Psychotherapeutic Centre

c. Laboratory tests at Caraes Butare

N0	Services	Laboratory Tests	Positive	Negative	Total
1	PARASITOLOGY	Thick smear	0	94	94
		Stool analysis	55	15	70
2	BACTERIOLOGY AND MYCOBACTERIOLOGY(TB)	Urine Direct examination	80	35	115
		Vaginal swab examination/Gram	38	0	38
		Uretral swab/ gram	1	0	1
		CSF& Body fluids			0
3	BIOCHEMISTRY&IONOGRAM	Glucose			1,803
		Urea			1,834
		Creatinine			1,813
		Alanine aminotransferase (ALAT/SGPT)			1,830
		Aspartate Aminotransferase (ASAT/SGOT)			1,820
		Gamma-Glutamyltransferase (GGT)			1,517

		Glycosuria	0	17	17	
		Total Protein			30	
		Proteinuria/albiminuria	0	17	17	
		Alkaline Phosphatase (ALP)			34	
		Total Bilirubin (Bil-T)			44	
		Direct Bilirubin (Bil-D)			44	
		Uric Acid			27	
		Low Density Lipoprotein(LDL-Cholesterol)			429	
		High Density Lipoprotein (HDL-Cholesterol)			429	
		Cholesterol			73	
		Triglycerides			48	
		dehydrogenase Lactate (LDH)			0	
		Creatine Kinase(CKL)			0	
		Creatine kinase-MB (CK-MB)			0	
		Albumin			46	
		Glycated Hb			0	
		Vitamine B12 Blood concentration			0	
		Folic Acid(B9 Vitamin)			0	
		Ferritin			0	
		IRON			0	
		Sodium (Na+)			38	
		Potassium (K+)			38	
		Lithium (Li+)			20	
		Magnesium (Mg++)			0	
		Calcium			0	
		Chloride(Cl ⁻)			38	
	SEROLOGY&IMMUNOLOGY	C-Reactive proteine (CRP)	82	658	740	
		VDRL/RPR	49	1328	1,360	
		Pregnancy test	9	200	209	
		HCV test(Hepatitis C test)	26	1229	1,255	
		AgHBs(Hepatitis B test)	18	1328	1,343	
		Arthri-Test/RF	11	626	637	
		ASLO	23	641	664	
		PSA			0	
5		HEMATOLOGY	Erythrocyte Sedimentation rate			787
			Full Blood Count			1,962
			ABO Rhesus/Cross Matching			38
6		DRUG MONITORING/TOXICOLOGY	MULTIDRUG	5	18	23

7	ENDOCRINOLOGY	T3(Triiodothyronin)			0
		T4(Thyroxin)			0
		TSH(Thyroid Stimulating Hormon)			0
		Others tests			380
	Total				21,705

Table 29: Laboratory tests at Caraes Butare

2.3.2.3. Achievements

- The laboratory is participating in research of CASPAR by carrying out and following-up the examinations of patients.
- Laboratory has participated in helping the diagnosis of Covid-19 patients and their follow up.
- The laboratory scored 18/18 in hospital Laboratories Accreditation in Rwanda 2022.
- The laboratory is 24 working as tests increased and need from patients clinicians follow up.

2.3.2.4. Suggestions

- ✓ To strengthen the 24 hours working Laboratory, the lab needs an increase of staff as lab activities and tests request increase at CARAES Ndera and at the 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.
- ✓ For management of waste in branches there is need of autoclave machines at hospital branches Laboratory.

2.3.2.5. Planning for the future:

- ✓ For the Laboratory of Ndera Neuropsychiatric Teaching Hospital continuity in different researches participation, there is a need to be registered and monitored in external accreditation bodies alongside the trainings.
- ✓ We plan to make a rehabilitation of Laboratory to attend request of accreditation bodies.

2.3.3. Medical Imagery

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

Electromyography (EMG) is a diagnostic procedure to assess the health of muscles and the nerve cells that control them (motor neurons). EMG results can reveal nerve dysfunction, muscle dysfunction or problems with nerve-to-muscle signal. During the test, one or more small needles (also called electrodes) are inserted through the skin into the muscle.

Electrocardiogram (ECG) 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.

The table below shows the EEG, EMG and ECG exams that were done during the year 2021-2022.

Pathologies / Months	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Tot
Epilepsy and brief convulsive disorders	345	322	327	243	393	346	349	461	487	308	365	449	4395
Headache	45	78	89	95	106	98	85	105	123	56	89	82	1051
Brief psychotic	66	53	35	64	48	25	54	93	67	42	60	31	638
Behavioral disorders	39	36	34	63	48	29	57	112	44	14	22	26	524
Others	56	29	11	32	33	10	73	56	44	28	37	18	427
Total / EEG	551	518	496	497	628	508	618	827	765	448	573	606	7,035

ENMG/EMG	15	8	6	34	53	1	28	26	45	26	19	23	284
ECG	7	2	4	4	9	2	1	3	9	5	3	3	52

Table 30: EEG, EMG and ECG exams done during the year 2021-2022

As statistics show, the major causes of EEG requests are Epilepsy and seizure disorders. Etiological assessment of psychological disorders and behavioral disorders showed an important place, because often the organic and biological causes of these disorders were ignored. The requests mainly come from hospitals and other different institutions covering the entire region of our Country.

The average number of examinations performed is 91 patients per month. The request for the EMG/ENMG examination made during this year is 284 examinations which represent 24 patients per month.

* The request for an electrocardiogram (ECG) examination was considered less frequent, because only 52 ECG examinations were done during the year 2021-2022, around 4 patients per month.

2.3.4. Occupational Therapy

Disability need not be an obstacle to success. 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 meaningful and purposeful 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.

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 2021-2022, as grouped into 6 categories.

Type of activity	ADLs	Revalidation	Arts	Expressive	Sport	Psycho-Education
Participation of crisis units	11,926	1,593	1,962	2,728	3,455	61
Participation of improvement units	4,428	1,481	2,693	4,956	10,062	451

Table 31: Participation in different occupational activities

This diagram above illustrates the number of patients who participated in different group activities throughout the year 2021-2022, some of them are performed in the occupational therapy department and others took place outside.

SPORT includes walking, dancing, gymnastics, volleyball, basketball and soccer.

ADL: Activity of daily living includes peeling potatoes, Cooking, Dressing, Cleaning, toilet and tooth brushing.

2.3.4.1. Therapeutic activities with regular monitoring and evaluation (July 2021- June 2022)

Table 32: Therapeutic activities with regular monitoring and evaluation

Month	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	Total
Participants	31	15	12	23	11	10	29	19	16	14	10	17	228

The diagram above summarizes the number of patients followed in occupational therapy on a regular basis. The follow-up is either individual or individualized in the group, and the follow-up is based on the diagnosis of each client and expected outcome.

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. We would also like to strengthen therapeutic kitchen as all required equipment are available. In addition we would like to bring about innovation and creativity and strengthen income generating activities like Gardening, Sewing, Basketry and knitting.

2.3.4.2. Suggestions and recommendation

In order to improve the quality of occupational therapy service, we suggest that the faced challenges should be addressed.

1. There is a need of continuous professional development through trainings for occupational therapy staff in order to improve the quality of care.
2. As there is increase in number of patients we suggest that the number of staff may be increased in all branches in order to avoid disruption of activity in absence of one staff.
3. ICYIZERE CENTER is in need of adequate infrastructure for occupational therapy department.
4. Exchange and harmonizing activities between Ndera NPTH and its branches so that none of them is left behind is still needed by sharing experiences from each center.
5. It should be better if occupational therapy is prescribed by other health care providers which will help the patients who are really in need and take them to a better level.
6. As occupational therapy service payment is not yet approved, we suggest that a minimum amount should be paid privately for those holding Mutuelle de Santé as insurance while for those holding commercial insurances we suggest that they should pay the bill.

2.3.5. Clinical Psychology

The Clinical Psychology service at Ndera Neuropsychiatric Teaching Hospital and its branches is composed of 12 full time staff members and 1 part time and senior clinical psychologist working under contract.

2.3.5.1. Daily activities

The 12 team members that compose the Clinical Psychology Service participated in the following activities:

- Participating in multidisciplinary team in their various assigned wards
- Conducted individual, couple, family therapy, and group therapy
- Supervise and coach students on training and internship
- Conducted groups for drug abusers
- Participated in case presentations and supervision
- Attended workshops and seminars
- Performed any other duties assigned by administration

2.3.5.2. Number of patients who consulted the service

The Service has seen an increase in the number of patients who consult for both in and out-patient services. Patients who consult are referred by the doctors, nurses, or self-referred. For those who are admitted, each ward is assigned a psychologist operating there as part of the medical team. Below is a summary presentation of patients served in the service.

Category	New case	Old case	Total
Outpatients	908	1,494	2,402
Inpatients	544	911	1,455
Group for drug abusers	380	387	767
Total			4,624

Table 33: Number of patients who consulted the Clinical Psychology Service

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

2.3.5.3. Achievements

- ✓ New members of staff were added to the existing members of staff to make a total of seven.
- ✓ New and convenient office space was provided and given office equipment.
- ✓ Staff members received different trainings as part of continuous professional development.

2.3.5.4. Challenges and suggestions

- ✓ The need to train in Psychological testing (psychometrics) is still wanting.
- ✓ The need to have supervision to help members deal with daily challenges and the demands of work is necessary.

2.3.6. Social Services

Social action is based on a global knowledge of the situation of a person in order to be able to initiate actions aimed at improving their living conditions on the social, health, family, economic, professional and cultural levels. It is in this regard that the Social Service of Neuropsychiatric Teaching Hospital plays an important role in improving the living conditions of patients.

2.3.6.1. Activities

In collaboration with the hospital's multidisciplinary team, the social service was able to carry out the various activities summarized in the table below:

ACTIVITIES	7	8	9	10	11	12	1	2	3	4	5	6	Total
Number of individual interviews	63	60	51	52	63	46	63	62	72	64	57	69	722
Number of interviews with families	20	28	24	24	26	32	27	31	37	33	23	37	342
Number of radio announcements	0	0	0	0	0	0	1	0	1	0	0	0	2
Number of phone calls	28 5	31 6	26 3	23 8	23 4	29 1	25 7	30 9	22 8	234	30 2	27 2	3,229
Number of discharges	17 7	26 3	19 9	20 6	24 2	35 5	18 4	16 1	27 3	262	23 8	24 7	2,807
Number of transfers	0	0	0	0	0	0	2	2	0	2	5	2	13
Number of SSAM	5	10	6	8	5	15	4	14	13	17	3	14	114
Number of deaths	1	0	1	1	1	0	1	2	1	0	2	2	12
Number of identified social cases	26	45	36	35	30	26	31	46	48	34	38	47	442

Number of field visits:													
• Home visits	5	3	1	0	3	2	3	1	1	3	4	3	29
• Social reintegrations	0	0	0	0	2	0	0	5	1	2	2	2	14
• Contacts and collaboration with other services	25	35	37	36	21	38	31	34	28	42	27	32	386

Table 34: Social Service activities

During the year 2021-2022, the social service of the hospital carried out various activities, with the aim of helping patient get discharged or adapt to the socio-family situations in which they were.

These activities are individual interviews, interviews with families, telephone calls (families, local authorities, etc.), identification of social cases, support for cases transferred to other specialized hospitals, visits to the field for the social reintegration, the preparation of patients scheduled to leave the hospitalization, as well as the collaboration with local authorities and / or other social institutions that could help us in solving certain patient problems.

Interviews with patients and families allowed us to identify patient problems and to intervene in order to see how to help the patients in question to come out of the socio-family difficulties that could be at the root of their crisis.

To be in contact with the resource persons (families, social institutions, local authorities, etc.) of our patients, we made various telephone calls to help us in solving the socio-family problems of hospitalized patients. .

The external services with which social service collaborated are as follows: Districts of Rulindo, Bugesera, Ruhango, Nyarugenge, Gasabo, Kicukiro, Nyanza, HUYE, Nyaruguru, Rutsiro, Gakenke, Nyaruguru, Kayonza, different RIB agents who bring patients, different hospitals, refugee camps, NCDA for children, Rwanda Demobilization and Reintegration commission (RDRC, Partners in Health, Word Vision, Compassion International, among others.

With the aim of the social reintegration of psychiatric patients with social cases, social service has made field visits for those who have been rejected or abandoned by their families in hospital. The reintegrated patients have arrived in their places of origin. Social service tried to involve the different people in their care in order to prevent relapses and facilitate their social rehabilitation.

In addition to the social reintegration of the social cases, in collaboration with the HIV Service, we have made home visits for patients living with HIV-AIDS. The objective of these visits was their follow-up outside the hospital, with regard to adherence to medication and psychosocial follow-up.

The field visits took place in the following districts:

- Nyarugenge District: Kigali Sector
- Kicukiro District: Niboye Sector
- Gasabo District: Rusororo, Nduba and Ndera sectors
- Bugesera District: Nyamata Sector
- Gisagara District: Mukindo Sector
- Huye District: Huye Sector
- Ruhango District: Ruhango Sector
- Nyanza District: Kigoma and Ntyazo sectors
- Rulindo District: Ntarabana Sector
- Gatsibo District: Rugarama Sector
- Ngoma District: Kazo Sector
- Kirehe District: Kigina Sector
- Rwamagana District: Kigabiro and Fumbwe sectors
- Musanze District: Nkotsi Sector
- Ruhango District: Ruhango Sector
- Kamonyi District: Rugarika and Musambira sectors

In addition to the social reintegration of patients who were in hospital, social workers carried out community follow-up of patients grouped in associations. During this follow-up, they did psychoeducation on health, advocacy and sensitized local authorities on mental illnesses and their role in the community rehabilitation of psychiatric patients, and medical visits were made.

These activities are aimed at helping people lead meaningful, satisfying, productive and independent lives in their respective home communities. Thanks to the activities, patients have been able to realize that despite having had the misfortune of falling ill, life can go on, if they try to follow the advice given by caregivers and to value themselves through work in society.

As for the families, they have learned quite a bit of information about mental illness and what to do to support their family members who are mentally ill. They have also started to come out of self-stigma as they have had testimonies from other people they share the same issues with.

As these associations have income-generating activities (agriculture, livestock, or trade), savings and credit; the stigma and discrimination of the mentally ill is reduced as the population has noticed that despite the mental illness, the members are able to do the economic activities.

In collaboration with the HIV Service, medical consultations were carried out with the aim of strengthening community rehabilitation, preventing relapses and facilitating the movement of patients who cannot afford to come and consult doctors in Ndera while they needed it.

Community monitoring was done in the districts below:

Nº	PLACES	ASSOCIATIONS
1	RUHANGO	UBUZIMA BWIZA
2	KAMONYI	IMBEREHEZA
3	RUSHAKI/GICUMBI	DUTABARANE
4	MURARA/RUBAVU	DUKURANEMUBWIGUNGE
5	MBUYE/RUHANGO	ABIHUJE
6	HUYE/SOVU	DUSANGIRUBUZIMA
7	MUKUNGU/KARONGI	ABAHUJE
8	MUSHISHIRO/MUHANGA	ABISHYZEHAMWE A&B TWISEUNGANE & EJO HEZA
9	NGOMA/MUGESERA	UMUNTUNKUNDI
10	ZAZA/NGOMA	DUHARANIREKwigira
11	KIZIBERE/RUHANGO	TUZAMURANE
12	NYARUREMA/NYAGATARE	TWITEKUBUZIMABWACU
13	KIRAMBI/NYANZA	DUHARANIREKUBAHO
14	KABGAYI/MUHANGA	TUVEMUBWIGUNGE
15	HIGIRO/GISAGARA	TUZAMURANE and EJO HEZA
16	KIVUMU/RUTSIRO	ABAHUJUMUGAMBI
17	NDERA/GASABO	ABISUNGANYE

2.3.6.2. Encountered challenges

We cannot ignore the 46 social case patients who remain in hospital. They were brought by the National Police and/or with the local authorities or various hospitals. We have the problem of reintegrating them into society because we do not know their backgrounds. Among these social cases, we have 12 foreigners (4 Ugandans, 4 Burundians, 2 Congolese, 1 Tanzanian, 1 Malian) who pose the problem of discharge because they are not able to return to their respective countries themselves.

We have collaborated with the immigration service, but due to Covid-19, the processes to reintegrate them into their respective countries have delayed.

2.3.7. Pharmacy

2.3.7.1. Introduction

Psychotropic drugs are essential drugs for Ndera Neuropsychiatric Teaching Hospital. Psychotropic drugs are not easily found on the local market in Rwanda, during the year 2021-2022, we also missed some of our psychotropic drugs from our suppliers in Europe. This caused the hospital pharmacy to run a stockout of some essential drugs. In the 2021-2022, Ndera Hospital has gotten few donations of psychotropic drugs, from UCB Belgium, and Jansen Pharmaceutica Belgium.

2.3.7.2. Aims of Neuropsychiatric hospital Pharmacy

The main mission of the Hospital Pharmacy is to manage the use of psychotropic drugs and other health commodities of the hospitals. Its goals include the selection, 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.

2.3.7.3. Consumption analysis of psychotropic drugs in 2021-2022

- The consumption of psychotropic drugs, which are the essential medicines for the Hospital, was very high in almost all products during the year 2021-2022; the number of patients on psychotropic drugs has increased. The Neuroleptics drugs are mostly psychotropic drugs used for the hospitals; antiepileptic drugs have been used in the second place in epileptic patients also as mood stabilizer; then antidepressants. Benzodiazepines and hypnotics are less used respectively. Some neuroleptics were used in large quantities in 2021-2022, those are chlorpromazine tablets, haloperidol 5mg tablets, dipiperon 40mg tablets, nozinan 20mg tab and risperidal 2mg tablets, haloperidol decanoas

50mg/ml, Haloperidol injection 5mg/ml and chlorpromazine injection 25mg/ml-2ml. The most used antiepileptic drugs in 2021-2022 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 to get the psychotropic drugs as decided by the hospital management, because of lack of psychotropic drugs at the local market, but they have been delay of delivery for some psychotropic drugs, some medicines on the purchase order did not come, and the hospital experienced a stock out of some psychotropic medicines like Zolpidem 10mg tablet, Clonazepam 2mg tablet, clonazepam 0.5mg tablet, clorazepate 10mg tablet, Phenobarbital 50mg tablet , Phenobarbital 100mg tablet ,olanzapine 5 mg ,olanzapine 10mg tab ,Clonazepam 50 mg/ml, dipiperon 40mg/ml gouttes, pimozide 1mg tab , pimozide 4mg tab, carbamazepine 100mg/5ml syrup, Ergotamine tartrate 1mg/Caffeine and Valproate Sodium 200mg/5ml-200ml. Among 68 psychotropic drugs, 15 products have been in stock out in different time.

- In attachment, there is the comparison diagram between the consumption of the year 2020-2021 and the year 2021-2022 for the randomly selected psychotropic drugs. This comparison shows how the consumption was very high during 2021-2022 for psychotropic drugs.
- The rate of stock out of psychotropic drugs in 2021-2022 was 22% because of lack of psychotropic drugs at local market of the country and in the suppliers of Europe. This rate was very high compared to the previous year.
- Some psychotropic drugs have not more used, compared to the previous years, among them Flupentixol retard 20mg/ml, Trazodone 100mg tablet and Sulpride 200mg tablet.
- The value of psychotropic drugs consumed during 2021-2022 by using the purchase price at CARAES Ndera , CARAES Butare and Icyizere Center reached **1,281,176,670 Rwf.**
 - The value of psychotropic drugs received during the year 2021-2022 was **1,617,231,244.78 Rwf.**
 - The value of psychotropic drugs in pharmacy stock as of the 30th of June 2022 was **610,430,898.44 Rwf.**

2.3.7.4. Challenges

- The main problem got in 2021-2022 was the lack of some psychotropic drugs from hospital suppliers, there was also delay in delivering a lot of psychotropic drugs, they removed some psychotropic drugs on the list we used to make a purchase order (Flomuralium). The hospital

did not find also psychotropic drugs in RMS LTD, BUFMAR and MEDIASOL, except for a very few products.

- Another problem was that, when the hospital tried to search for local suppliers through tender market, they do not give their offers on psychotropic drugs or give high prices for some products, and as solution, the hospital always seeks psychotropic drugs in foreign countries.

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

In the year 2021-2022, the Hospital and their two branches have used somatic drugs in considerable quantities, especially in Neurology service and Icyizere Center.

The supply of somatic drugs was done in RMS/former MPPD CAMERWA, BUFMAR, and MEDIASOL 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 in HIV program in 2021-2022.

The following is summative presentation of somatic drugs, consumables, and laboratory reagents in 2021-2022.

- The value of somatic drugs stock, consumables and medical equipment on the 30th of June 2022 was **17,940,197.78 Rwf**.
- The value of lab reagents stock on the 30th of June 2022 was **5,388,074Rwfs**.

2.3.7.6. Recommendations

- To the Hospital, to avail enough budget for buying psychotropic drugs in sufficient quantities, because the consumption has been more increased than previous year.
- To the Central level, Rwanda Medical Supply, BUFMAR and MEDIASOL, respectively to their scope, to avail all products psychotropic drugs as other essential medicines, as our hospital has given them the procurement plan for all psychotropic drugs in their quantification.

2.3.7.7. Drug and Therapeutic Committee of the Hospital

The Drug and Therapeutics committee (DTC) is an essential component of a health care organization's medicine selection, use, and distribution program. This committee has many different functions that will contribute to the goal of improving medicine selection and rational use of medicines.

In 2021-2022, DTC has got challenges in organizing quarterly meeting as usual in the two first quarters of this year, and to perform some activities because of Covid-19 pandemic, but the committee has implemented some activities:

- Revising the list of somatic drugs to be used by the Hospital
- Revising the pharmaceutical products' prices twice this year
- Analyze and take intervention of the incident report regarding medication errors and adverse drug reaction received in reporting.

CHAPTER III: IMPLEMENTATION OF THE ANNUAL ACTION PLAN

3.1. Introduction

To carry out the mission of the Hospital, which is to provide accessible and specialized healthcare, to facilitate training, research and mentorship in mental health and neurology with reference to the National Health Policy, the Hospital settled a strategic plan of five years as a principal vision of all planned activities to provide the best quality care to psychiatric and neurologic patients and To strengthen administrative and support services for the hospital operations as stipulated in the following objectives of the strategic plan of the hospital:

1. Enhance health service delivery and customer experience
2. Essential pharmaceutical products, drugs access and medical equipment
3. Expand specialized services
4. Enhance financial performance and management
5. Enhance human resource management and capacity building
6. Promote research, performance management and quality improvement
7. Improve infrastructure, environment, safety and equipment
8. Strengthen health information system

In Ndera Neuropsychiatric Teaching Hospital, planning is a management process, concerned with defining goals for a future direction and determining on the mission and resources to achieve those targets. Planning may be understood as “thinking in advance what is to be done, when it is to be done, how it is to be done and by whom it should be done”. In simple words we can say, planning is setting up of objectives and targets and formulating an action plan to achieve them within a fixed period of time.

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. Just as there are different ways to get to a destination, the Ndera Neuropsychiatric Teaching Hospital found that there are different ways, a program can take to reach goals, meet objectives, and achieve outcomes through action plan.

Therefore planning as the one of the most important hospital management process, helps to think and set activities required to achieve desired objectives with some ease and promptness and avoidance of doing some random activities.

The main advantages of planning in the hospital are as follows:

1. It increases the efficiency of the hospital.
2. It reduces the risks involved in activities.
3. It facilitates proper coordination within the hospital.
4. It facilitates proper utilization with maximum efficiency the available time and resources
5. It gives a right direction to the organization.
6. It is important to maintain good control.
7. It helps to achieve the objectives of the hospital.
8. It motivates the personnel of the hospital.
9. It encourages hospital managers' creativity and innovation.
10. It also helps in decision making.

To digitalize planning process, the hospital is adopted the Integrated Financial Management Information System (IFMIS) which is 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 2021-2022 the hospital outlined many activities to deliver required outputs under two main program namely:

1. Administrative and supporting staff
2. Specialized health service delivery

To ensure that the action plan is being implemented, the hospital management appointed Monitoring and evaluation officer to monitor the implementation progress of action plan through regular reports conducted on Quarterly and annual basis.

3.2. Performance of action plan 2021-2022

This report presents a detailed narrative on the implementation of the Ndera Neuropsychiatric Teaching Hospital annual action plan of the financial year of 2021-2022 (from 1st July 2021 to 30th June 2022) and present the progress for all output indicators in the action plan which are supported by statistics table on settled annual targets, bar charts and photos are provided are provided to present the implementation level of each planned output.

In this report we are going to present the performance of outputs indicators evaluated through the implementation of planned activities whereby the unity value of measures is split in quarterly and annually targets.

3.2.1. Program I: Administrative and Support Services

3.2.1.1. Output 1: Human resources management is 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 for development. Ndera Neuropsychiatric Teaching Hospital plays a big role in ensuring the hospital's human resource to provide 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 (Rate of staff rights are met as per Rwandan law and Number of staff to be recruited). Rate of staff rights are met as per Rwandan law, this indicator was assessed via a survey conducted by the internal accreditation team which used a questionnaire for staff satisfaction.

The hospital recruited new and fit employees to fill the gap in line of achieving planned targets/objectives, we cannot ignore the negative side effect caused by the Covid-19. Here down is statistical data of human resource management performed in the financial of 2021-2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Human resources management is ensured	Rate of staff rights are met as per Rwandan law	80%	89%	89%
	Number of staff to be recruited	20	30	28

Table 36: Human resource management ensured

3.2.1.2. Output 2: Hospital security is ensured

Security is a key for the Hospital services; the provision of quality health care goes along with protection of the patients, staff, visitors and environment. The hospital ensures that security within is sustained by fighting against anything that can cause fire risks, human harm, material accident, and environment pollution.



Figure 16: CCTV Cameras for internal security

The hospital has signed contract with security company and recruited a staff in charge of internal security, security cameras were provided in every corner, maintenance and refilling of existing fire extinguisher took place, and risk insurance of hospital premises (Buildings, store,...) were provided according to safety requirements, to increase implementation rate of recommendations from environmental risks assessment at 90%.

OUTPUT	Indicator	Baseline	Target	Achieved
Hospital security is ensured	Rate for implementation of hospital safety (%)	90%	98%	98%

Table 37: Hospital security is ensured

3.2.1.3. Output 3: Transport and maintenance of vehicles is 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, and 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 of 2021-2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Transport and maintenance of vehicles is ensured	Rate of activities realized (%)	90%	95%	95%

Table 38: Transport and maintenance ensured

3.2.1.4. Output 4: 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 service actively meet the needs of physicians, administrators, and patients in institutional processes for instance the Open clinic. The Ndera Neuropsychiatric Teaching 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 2021-2022

OUTPUT	Indicator	Baseline	Target	Achieved
Strong, reliable and efficient IT system is developed	IT system is available, functional and integrates the hospital and its branches (%)	90%	95%	78%

Table 39: IT system developed

3.2.1.5. Output 5: Other hospital's goods and services are ensured

To deliver the specialized neuropsychiatric health care services, the hospital has provided different goods such as: office and wards equipment, office stationeries, printed matters, water and electricity, Public relations, communication and correspondence fees, laundry machines, 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 97% as they were 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 (%)	93%	97%	97%

Table 40: Goods and services ensured

3.2.1.6. Output 6: Capacity building of employees is 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 2021 -2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Capacity building of employees is ensured	Number of neuropsychiatry clinical staff trained	187	216	216
	Number of staff trained on infection control and health care waste management	302	341	341
	Number of staff trained on integration of HIV and mental health in DHs and HIV management protocols	166	166	166
	Number of Administrative and supporting staff trained	102	126	126

	Number of staff trained on electronic medical software and computer basic skills	131	268	266
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Table 41: Capacity building of employees ensured

3.2.1.7. Output 7: Infrastructure and maintenance works are improved

The infrastructures and maintenance works are the basic physical and organizational structures and facilities (e.g. buildings, electric power, water...) needed for the operation of the hospital to deliver the best quality of Neuropsychiatric health care service to in and out patients. In this ended year the hospital planned to drill a water source at CARAES Butare and is implemented as was planned now water is available at Caraes Butare, avail electric, construction and plumbing materials for maintenance, starting to build the Residential home for hospital partners and the first partition of Ndera rehabilitation home care known as Home Saint JULES for chronic patients at CARAES NDERA, Build Occupational Therapy service at Caraes Butare. Here down is statistical data of infrastructures and maintenance works implemented in the financial of 2021-2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Infrastructures and maintenance works are improved	Percentage rate of realized	76%	83%	83%
	Activities			
	Number of construction contract signed	3	6	6

Table 42: Infrastructure and maintenance works are improved



Figure 17: Construction of Residential home for hospital partners at CARAES Ndera

The project of building the Residential home for hospital partners was initiated by the Ndera Neuropsychiatric Teaching Hospital management to find a shelter for different partners of the hospital from abroad. This was a best solution of challenges mentioned by hospital partners that there were no hotel near the hospital to host in when they are visiting the hospital, other challenge mentioned which the residential home for hospital partners we resolve is the transport to come to the hospital and go back to the hotel.

The contract to build the residential home for hospital partners is signed between the Client (NDERA NPTH) and the contractor (MoD/Reserve Force) for the budget of one hundred ninety million, seven hundred and four thousand and three hundred and ten Rwandan franc (190,704,310Frw). The preliminary works on the building took a place on the 09 May 2022 at the project site.

At the completion of project the building will be having nine well equipped rooms, one VIP and well decent room with its living room, one laundry and its store room. The project duration is Four months as it is stipulated and agreed by both concerned parties in the contract.



Figure 18: Construction of the first partition of Ndera rehabilitation home care

The project of building the first partition of Ndera rehabilitation home care, was initiated by the management committee of the Ndera Neuropsychiatric Teaching Hospital to find a solution for overclouded wards in hospitalization due to the increasing number of patients with chronic mental illness who are from unknown families and some of the following reasons are raised to be solved by the project:

1. Old building of the existing rehabilitation home care known as Home Saint Jules
2. A high way on the Kigali master plan which took almost a third of the existing building

3. Lack of offices (of the responsible, nurses and social works,...), lack of stores, kitchen, recreation room, Laundry...
4. No ventilation in the whole building, Etc...

The contract to build the first partition of Ndera rehabilitation home care is signed between the Client (NDERA NPTH) and the contractor (MoD/Reserve Force) for the budget of Four hundred and forty two million six hundred and eighty three thousand and three hundred seventy six Rwandan Francs (**442,683,376 Frw**). The preliminary works on the building took a place on the 29 June 2022 at the project site.

At the completion of project the building will be having two well equipped dormitory each for 18 male and another for 18 female well accommodated, one main hall which will serve at the beginning as recreation hall and as well as refectory, Office of the responsible, office of nurses and store room and a bungalow. The project duration is five months as it is stipulated and agreed by both concerned parties in the contract.



Figure 19: Construction of Occupational Therapy service at Caraes Butare

The project of building Occupational Therapy service at CARAES BUTARE came as one solution among many challenges raised by Caraes Butare managers like of insufficient offices, lack of recreation hall, lack of a canteen, poor and old building which do not allow them to carry out the mission of the hospital in a nice environment.

The Occupational Therapy service will facilitate Caraes Butare to deliver the quality services in psychiatry and to solve the problems that interfere with a person's ability to do the things that are important to them every day, Being productive and useful to the community, and Leisure activities (sports, Sewing, knitting, drawing, social activities, music, etc...).

The hospital ensured that the occupational therapy service of Caraes Butare be an adequate infrastructure which will host many patients as possible who may receive occupational therapy services on medical prescription, exhibition hall, stores and office.

The contract to build the Occupational Therapy service at Caraes Butare is signed between the Client (Ndera Neuropsychiatric Teaching Hospital) and the contractor (Tron Multi System Ltd) for the budget of One hundred and twelve million, nine hundred and twenty two thousand and one hundred sixteen Rwandan Francs **112,922,116 Frw**. The preliminary works on the building took a place on the 16 March 2022 at the project site. The project duration is four months as it is stipulated and agreed by both concerned parties in the contract.

3.2.1.8. Output 8: Quality nutrition and special needs for hospitalized mental patients is ensured

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, 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 follow up. The hospital thrived to optimize orders of nutrition and special need for inpatients to ensure that every patient has a healthy meal. Here down is statistical data of Quality nutrition and special needs offered to hospitalized mental patients in the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Quality nutrition and special needs for hospitalized mental patients is ensured	Percentage of stockout avoided	90%	94%	94%
	Number of contract signed	2	4	4

Table 43: Quality nutrition and special needs for hospitalized mental patients ensured

3.2.1.9. Output 9: Hygiene and environmental services are ensured

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 the critical pandemic period of Covid-19 we experienced, the hygiene was prioritized in the very essence of the hospital, hand washing stations at every entrance and many policies and protocols were maintained and sustained as such as:

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

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 firefighting equipment; refilling firefighting materials, to smoothen the effective implementation of action plan and to meet the health facilities hygiene and environmental cleanliness standards in the hospital. Here down is statistical data of Hygiene and environmental services done in the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Hygiene and environmental services are ensured	Performance rate of hygiene and environmental cleanliness (%)	87%	96%	96%

Table 44: Hygiene and environmental services are ensured

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

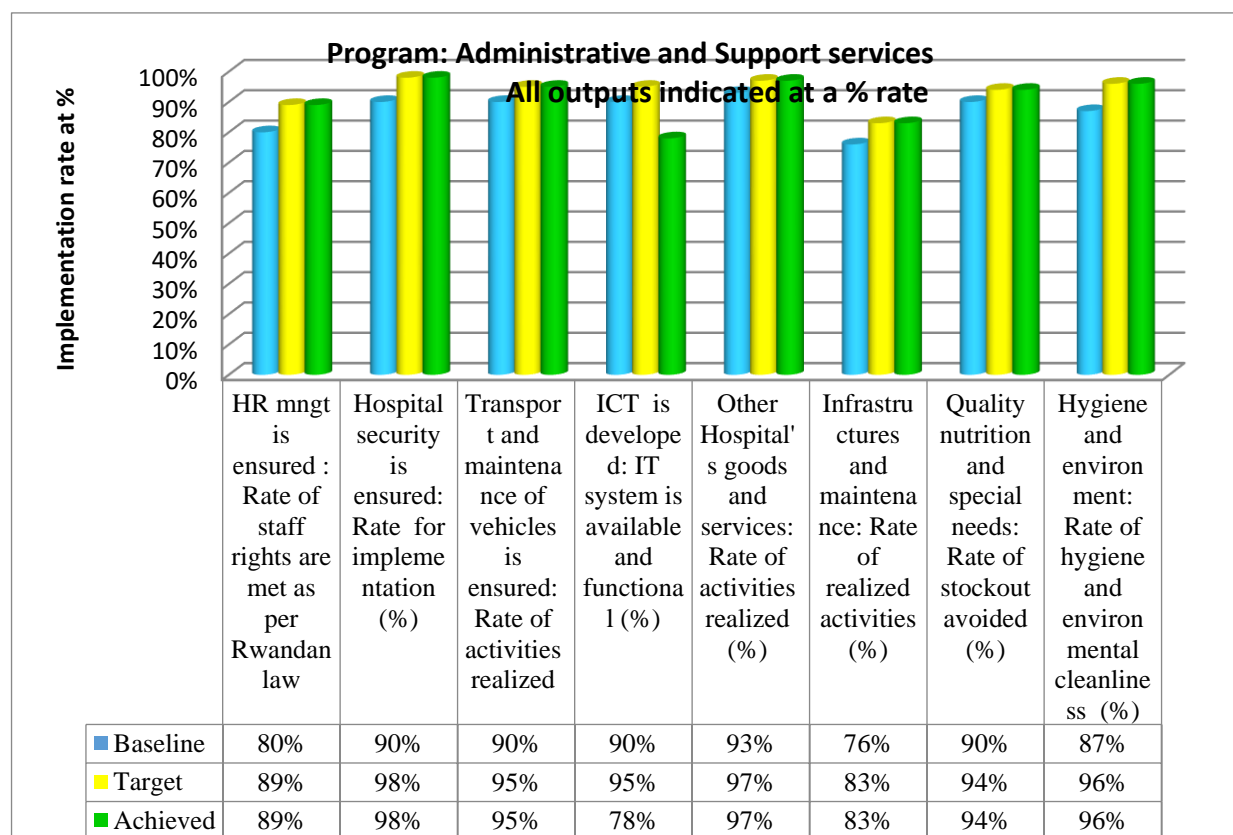


Figure 20: Presentation of the achievements against baseline and targeted output

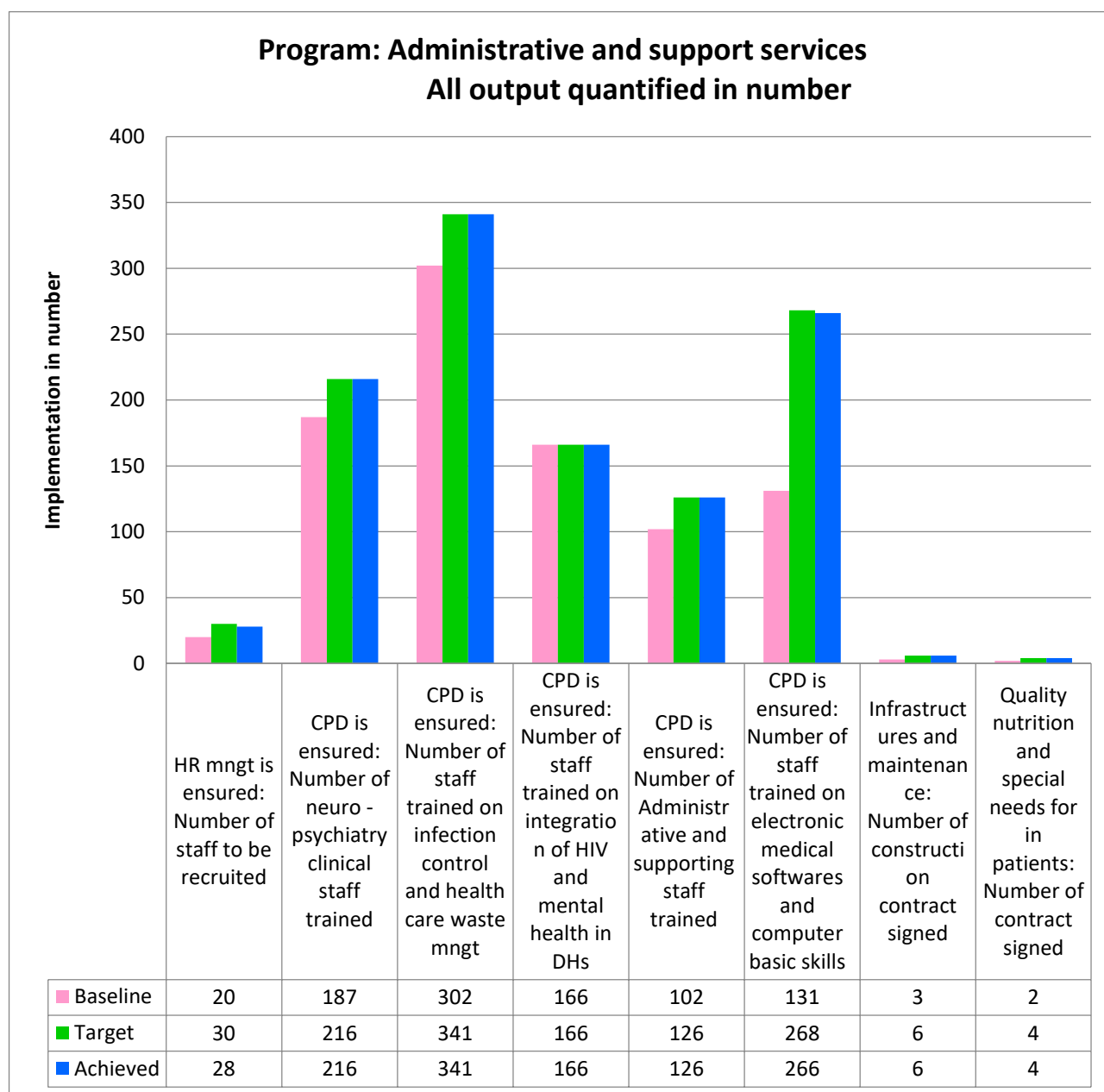


Figure 21: Administrative and support services, all output quantified in number

3.2.1.10. Finance

The management of the Hospital's budget is entrusted mainly to the Director General of the Ndera Neuropsychiatric Teaching Hospital, in his capacity as Chief Budget Manager (CBM), 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.

EXPENDITURES /CHARGES (In Rwfs)			INCOME/PRODUCTS (In Rwfs)		
Operating costs	2021-2022	2020-2021	Operating Revenue	2021-2022	2020-2021
Cost of past inventory	1,199,795,958	892,935,450	Hospital income * Invoices - customers not paid	2,168,289,150 -869,276,845	2,018,448,466 -373,868,507
Materials and supplies Consumed	399,147,674	364,185,169	Other income	9,986,599	1,593,625
Transport consumed	9,078,759	10,116,963	Transfers from MoH-Based Financing Performance (PBF)	240,000,000	180,000,000
Other services consumed	1,146,742,822	841,062,954	Transfers from Treasury	1,637,754,837	1,669,798,500
Unforeseen expenditures and indirect expenses	124,878,881	228,878,793	Fracarita Grants Caraes Belgium	20,115,643	5,843,159
Compensation of employees	1,436,843,896	1,342,303,533	UCB Grants	95,638,240	40,173,772
			grants From CDC/MOH	114,535,091	113,587,846
Performance Based Financing	400,210,619	373,564,666	Grants From Johnson & Johnson Project	62,556,123	28,585,173
Fees, fines, penalties and licenses	0	2,190,100	Other Grants Gifts	5,407,301	33,391,970
Result	- 362,415,625	36,184,883			
TOTAL	4,354,282,984	4,091,422,511	TOTAL	4,354,282,984	4,091,422,511

Table 45: Sources of finance as well as the charge

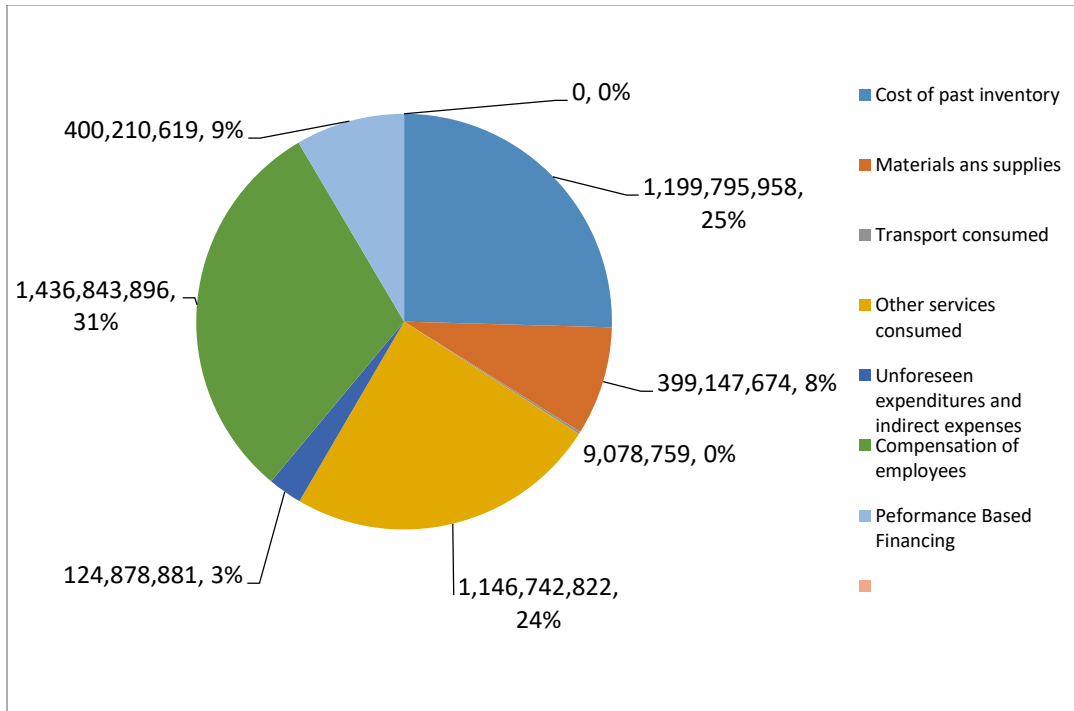


Figure 22: Our expenditures by Diagram and by percentage

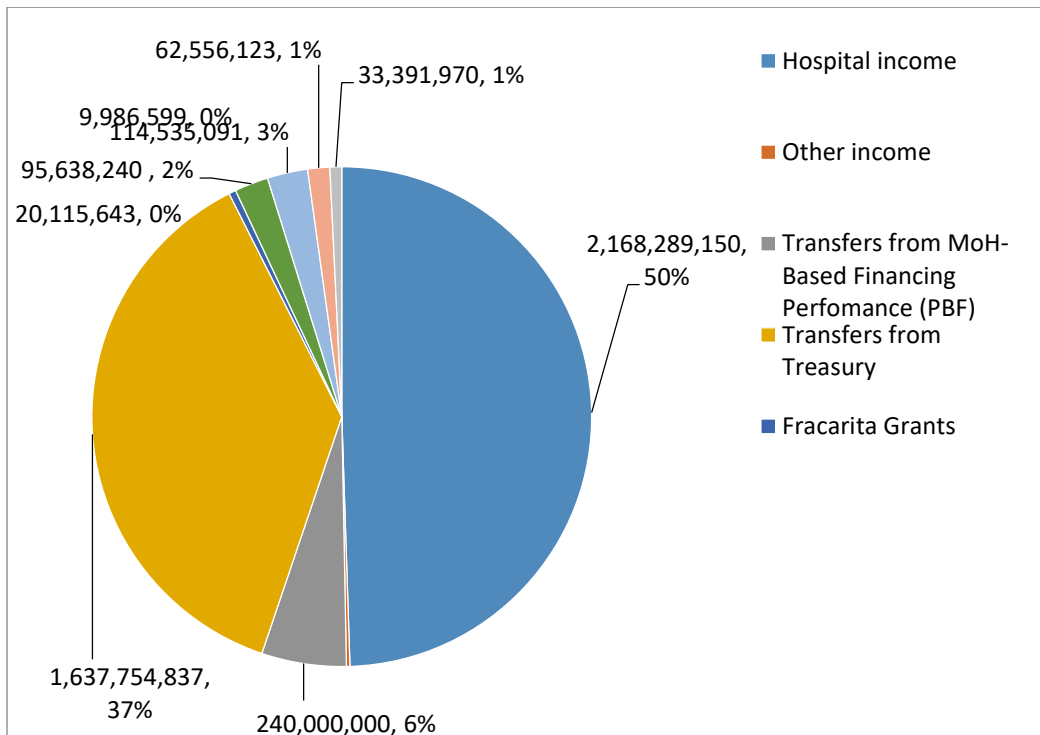


Figure 23: Our incomes by diagram and by percentage

3.2.2. Program II: Specialized Health Services

3.2.2.1. Output 10: Neuro-psychiatric care is strengthened (in/out patients)

Care provision to Neuropsychiatric patients is the core service of the hospital, as it is said in the introduction that Ndera Neuropsychiatric Teaching Hospital is a 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)	Number of neurological and psychiatric patients received	73675	75518	68063

Table 46: Neuro-psychiatric care strengthened

3.2.2.2. Output 11: Physiotherapy and other neurological rehabilitation services are strengthened

Ndera Neuropsychiatric Teaching Hospital as a sole specialized referral and teaching hospital in mental and neurology health care in Rwanda, is determined 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 2021-2022 annual consultations done in neurology, there is a decrease 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 in Ndera. 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
Physiotherapy and other neurological rehabilitation services are strengthened	Number of physiotherapy sessions done	3,364	3,385	3289

Table 47: Physiotherapy and other neurological rehabilitation services strengthened

3.2.2.3. Output 12: Improved quality care of mental patients with addiction and increased awareness on risk of substance abuse

Substance abuse is a chronic and a 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. Here down is statistical data of quality care of mental patients with Addiction and increased awareness on risk of substance abuse activities done in the financial year ended on 30 June 2022.

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	2523	2752	2731
	Number of sensitization sessions provided on substance abuse	46	49	49

Table 48: Improved quality care of mental patients with addiction

3.2.2.4. Output 13: Occupational therapy is 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 every day 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 training occupational therapists and availing a new and fitting equipment for the service, building Occupational Therapy service at Caraes Butare which can host any number of patients who may receive occupational therapy services on medical prescription. That effort is proved in the increase rate of a 100% of performance as is shown here below.

OUTPUT	Indicator	Baseline	Target	Achieved
Occupational therapy is strengthened	Number of neurological and psychiatric patients treated	73675	75518	68063

Table 49: Occupational therapy is strengthened

3.2.2.5. Output 14: Pharmacy service is strengthened and sustained

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 on a timely manner and pays

attention to the patients trends to avoid stock out. Here down is statistical data of Pharmacy activities done through the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Pharmacy service is strengthened and sustained	Percentage of stock outs avoidance for tracer drugs (%)	92%	98%	98%
Output 15: Laboratory services are strengthened				
Laboratory services are strengthened	Percentage rate of Laboratory services functional and accredited	68%	82%	82%

Table 50: Pharmacy and laboratory services strengthened

3.2.2.6. Output 16: Access to Neuro-psychiatric services in the community care is strengthened

Patients with psychosocial disabilities are likely to live as 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 Forester outreach and mentorship to districts hospitals and patient's family. The statistical data of Community visits done in the financial year ended on 30 June 2022 is provided in the following table.

OUTPUT	Indicator	Baseline	Target	Achieved
Access to Neuro- psychiatric services in the community care is strengthened	Number of community visits done	14	17	17

Table 51: Access to care strengthened

3.2.2.7. Output 17: Care for mental patients living with HIV/AIDS aiming at reduction of morbidity and mortality is improved

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, sexual abuse, unprotected sex and low use of condoms. And people living with HIV are highly at the great risk of being abused sexually, which lead them to 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 or 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. Here down is statistical data of Care for mental patients living with HIV/AIDS activities done through the financial year ended on 30 June 2022.

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	52	52
	Percentage rate of realized activities	35%	60%	60%

Table 52: Care for mental patients living with HIV/AIDS aiming at reduction of morbidity and mortality is improved

3.2.2.8. Output 18: Integrated somatic care in mental health service is improved

To have mental illness doesn't mean that the patient is liberated from somatic illness 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 provided somatic medical supplies. Here down is statistical data of integrated somatic care in mental health services done through the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Integrated somatic care in mental health services improved	Number of patients with comorbidity screened and treated	1485	1501	1423

Table 53: Integrated somatic care in mental health service is improved

3.2.2.9. Output 19: Supervision and Mentorship of district hospitals is ensured

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 & Mental Health in 30 DHs. The hospital target to train 160 health care providers at the district hospitals is decreased to 34 to the unexpected and emergency activities took place. Here down is statistical data of Supervision and Mentorship of district hospitals activities done through the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Supervision and Mentorship of district hospitals ensured	Number of healthcare providers at the district hospitals trained	164	34	34
	Number of district hospitals supervised	20	23	23

Table 54: Supervision and Mentorship of district hospitals ensured

3.2.2.10. Output 20: Stigma against epilepsy and mental illness is reduced

The single and most important barrier to conquer in the community is the stigma associated discrimination towards persons suffering from mental and behavioral disorders. Stigma is a well-documented barrier to health seeking behavior, 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, supporting vulnerable group of post hospitalized patients like APOROMAMER helps to decrease 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. Here down is statistical data of Stigma against epilepsy and mental illness activities done through the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Stigma against epilepsy and mental illness is reduced	Percentage rate of realized Activities	74%	86%	85.5%

Table 55: Stigma against epilepsy and mental illness reduced

3.2.2.11. Output 21: Improved research about mental health, neurology health and associated healthcare interventions.

Ndera Neuropsychiatric Teaching Hospital recognizes the importance of research as a scientific basis for clinical practice, to improve patient outcomes from planned activities such as conduct research in neurological field, conduct an assessment "to measure effect of outreach activities in mental health", conduct 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 must meet ethical and legal standards as well as Ndera Hospital requirements.

Here down is statistical data of research about mental health, neurology health and associated healthcare interventions activities done through the financial year ended on 30 June 2022.

OUTPUT	Indicator	Baseline	Target	Achieved
Improved research about mental health, neurology and associated healthcare interventions	Number of research carried out	3	3	3

Table 56: Improved research about mental health, neurology and associated healthcare interventions

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

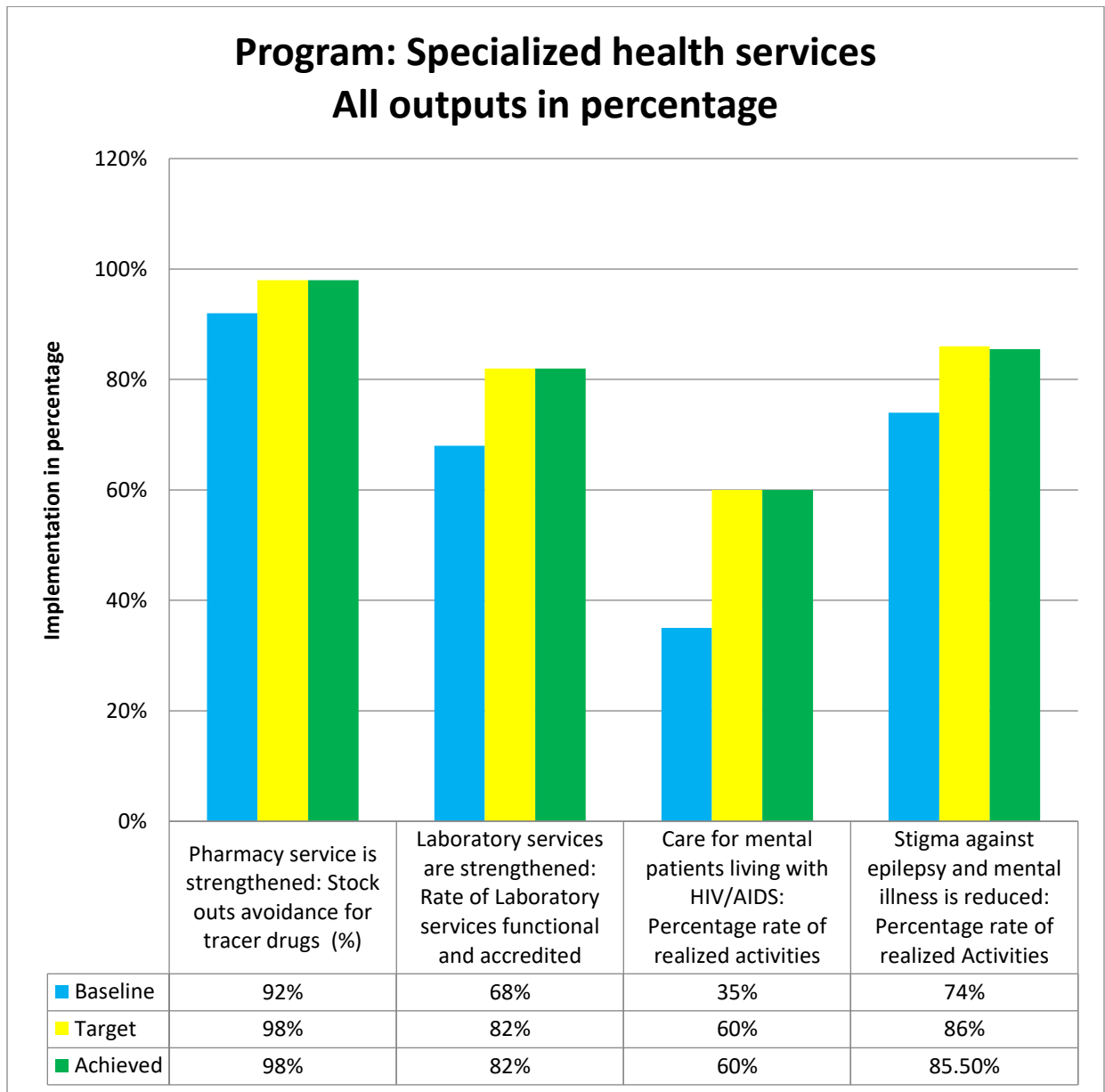


Figure 24: Presentation of the achievements against baseline and targeted output

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

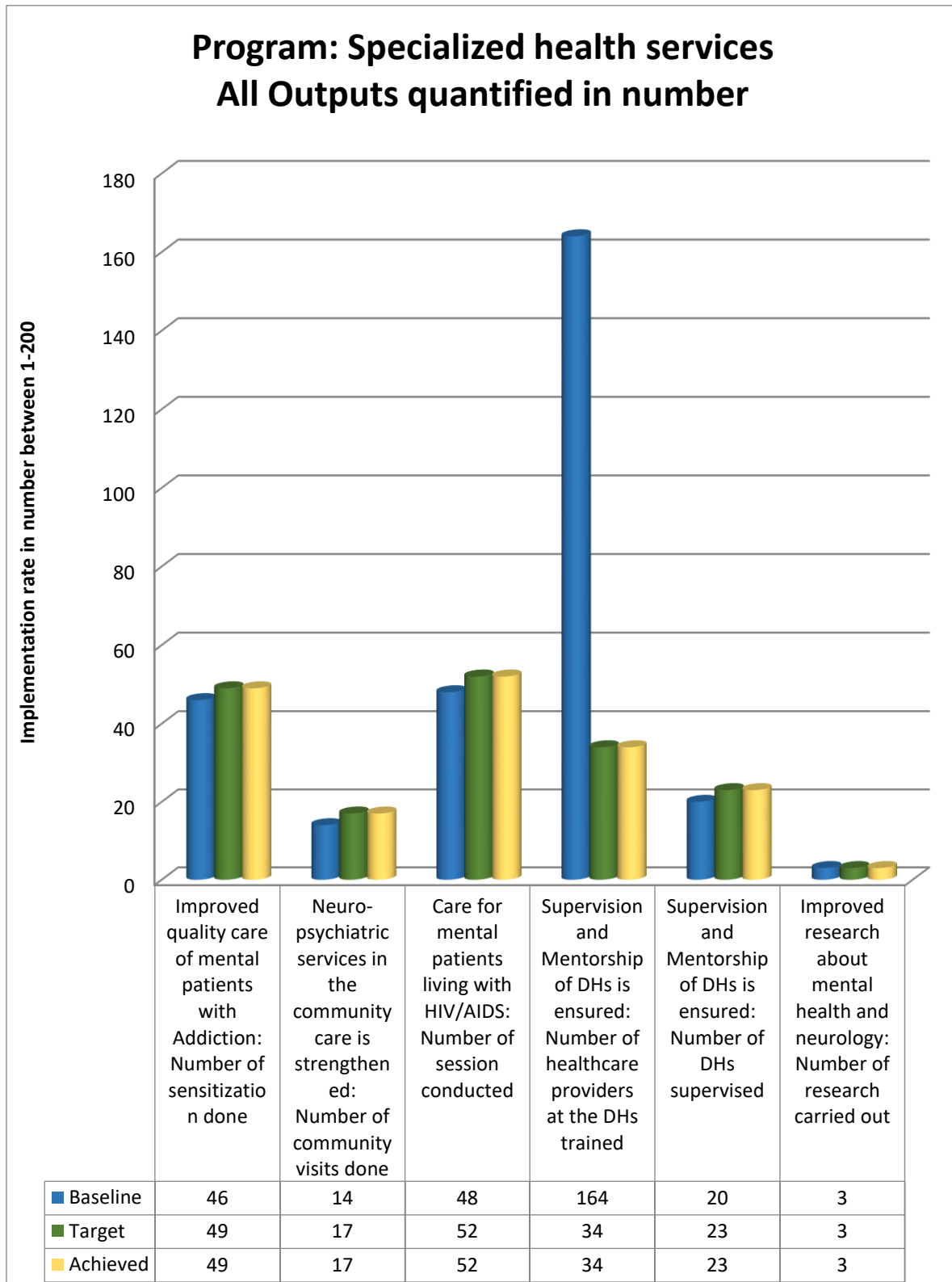


Figure 25: Presentation of the achievements against baseline and targeted output

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

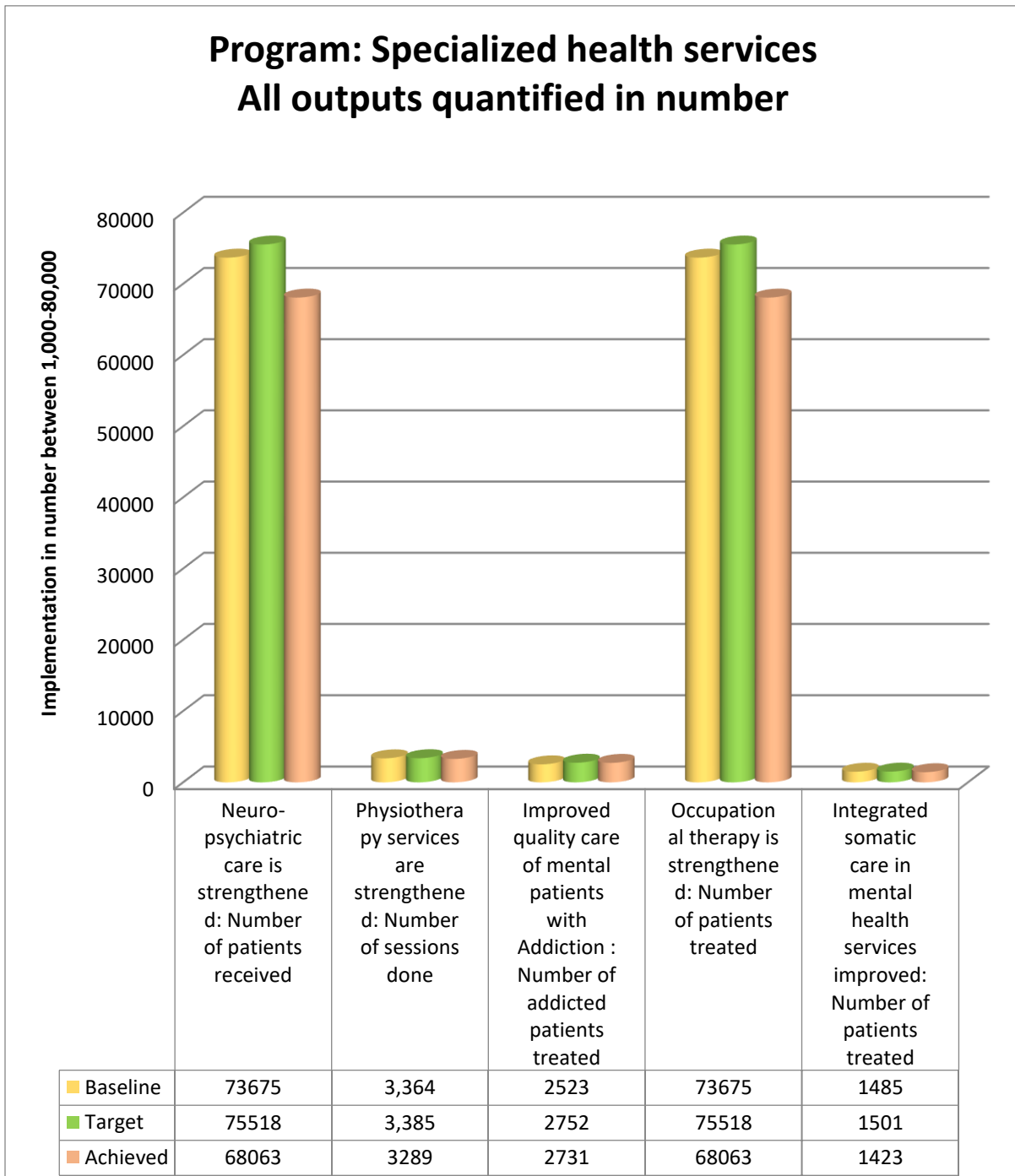


Figure 26: Program: Specialized health services, all outputs quantified in number

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

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

4.1.1. Introduction

The department of Education, Research, CPD and quality improvement large mission aimed to empower hospital staff in matter of quality care services provision.

The delivered service should be exceptional without any comparison, so to preserve required skills and competences result from Education in health care delivery, Continuous professional training and Research for better evidence based practice.

4.1.2. Education

4.1.2.1. Academic and professional trainings

Through its collaboration with academic and clinical institutions, Ndera Neuropsychiatric Teaching Hospital provides a high level of practice to students, interns, volunteers and its staff.

Now teaching hospital, Ndera Neuropsychiatric Teaching Hospital has mandated to train all health professionals in neuropsychiatric domain. The training is provided through supervision, mentorship, coaching, colloquium, intervision...

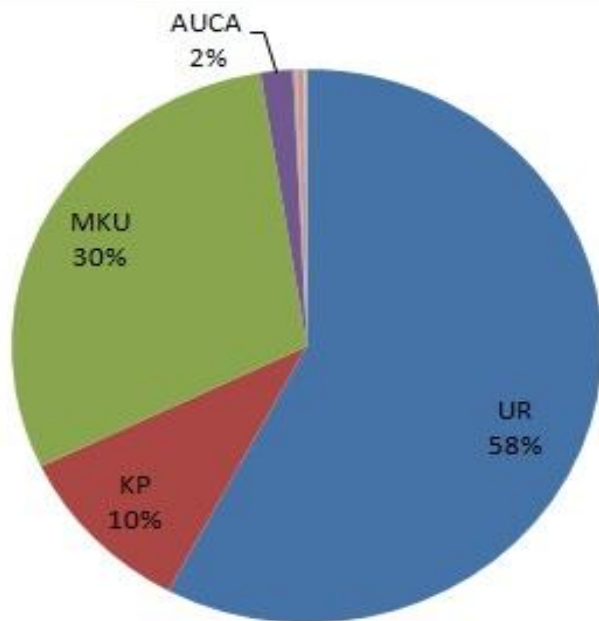
a. Partner Institutions in domain of Education (Public, private & International):

- University of Rwanda(UR)
- Adventist University of central Africa(AUCA)
- Kibogora Polytechnics(KP)
- University of Kabgayi (UCK)
- Mount Kenya University (MKU)
- From Foreign Institutions,
- Volunteer or Professional internship
- University of technology and business(UTB)
- University of Kigali (UoK)

Table of different domains students and their respective institutions

No	Domains	UR	KP	MKU	AUCA	CUR	UTB	UoK	Abroad	IPRC	Profes	Total	
1	General Nurses	141	144	421	25							731	51.19%
2	Mental health Nurses	78										78	5.46%
3	Clinical psychology	28										28	1.96%
4	Medical students	507							3			510	35.71%
5	Occupational therapy	21							1			22	1.54%
6	Social work					1			1			2	0.14%
7	Residency in psychiatry	11										11	0.70%
8	Masters in Psychology	8		2								10	0.70%
9	Residency in Neurophysiology	7										7	0.49%
10	Finance						1	1				2	0.14%
11	Professional										1	1	0.07%
12	Study visit	24										24	1.68%
13	Biomedical									1		1	0.07%
14	Physiotherapy-Masters	1							1			2	0.14%
Total		826	144	423	25	1	1	1	6	1	1	1429	
		57.77%	10.08%	29.62%	1.75%	0.07%	0.07%	0.07%	0.42%	0.07%	0.07%		

Table 57: Different domains students and their respective institutions



The highest number of received students came from University of Rwanda (57.8%).

Figure 27: Number and Provenance of students received

A number of 1,429 were trained at the Hospital. The university of Rwanda is the 1st institution with 57,7% (826) to send many students for clinical practice, Mount Kenya University with 29.6% (423) is the second followed by Kibogora Polytechnics with 10.08%(144) and the 4th is AUCA with 1.75%(25), coming abroad 0.42%(6), UoK, UTB, CUR and professional interns were 1(0.07%),

We noticed a good collaboration with national, private and international high learning institutions during the internship of their students.

The domain of nursing has been the first with 51.19% (731), the medical students were 35.71% and mental health nurses were 5.46% others were below 5%.

4.1.3. CPD: Continuing Professional Development

This activity consists of “Educational activities which serve to maintain, develop, or increase the knowledge, skills, and professional performance and relationships that a health professional uses to provide services for patients, the public, or the profession. The content of CPD is that body of knowledge and skills generally recognized and accepted by the profession as within the basic medical sciences, the discipline of clinical medicine, and the provision of health care to the public.”

4.1.3.1. CPD Requirements

There are minimum requirements of learning for CPD in terms of CPD points for each category of health professionals. However, there is usually no limit. CPD requirements that must be met include a commitment to undertake Continuing Professional Development (CPD) are:

- **Medical Doctors and Dentists:** 150 points
- **Pharmacists / Pharmacy technicians:** 75 points are required each three years
- **Nurses and Midwives:** 60 points are required each three years
- **Allied Health Professionals (All):** 0 points are required each three years/undertake at least 90 hours of learning activities.

Health care professionals need to regularly update, improve, and acquire knowledge and new skills in their respective fields.

4.1.3.2. CPD 2021-2022 achievements

The Continuing Professional Development (CPD) increases the knowledge, skills, and professional performance. Therefore, during this fiscal year 2021/2022, the hospital organized and conducted face-to-face and online trainings for staff members to ensure capable workforce and improvement of services delivery.

The table below displays main trainings completed at Ndera Neuropsychiatric Teaching Hospital.

No	Title of the training	Participants categories	Number of trainees
1	Mental health and HIV integration	Nurses from Districts hospitals and Health centers.	60
2	Workshop on case sharing on mental health and HIV	Nurses from Districts hospitals and Health centers.	60
3	Neuropsychiatric emergencies, resuscitation techniques and clinical practice at emergency service from Rwanda Military Hospital (RMH)	Doctors and nurses	57
4	Refresher on IPC to address covid-19 (PPEs use among other prevention measures)	Cleaning and hospital staff	146
5	Triage and protocols in neuropsychiatric emergencies management	Doctors and nurses	45

6	Forensic in psychiatry (Medical expertise, Rational use of psychotropics, agitation and violence management.)	Doctors and nurses	55
7	Quality Improvement in healthcare	Hospital staff	67
8	Fire safety and fighting	Hospital staff	133
9	PTSD and Burnout management	Clinical staff	84
10	Public procurement and contract management	Administrative staff	18
11	SMART HR (RBM)	Human resource	4

Table 58: CPD 2021-2022 achievements

Based on the training plan for the Fiscal Year 2021/2022, its implementation was achieved at 96% as shown in the table above.

4.1.3.3. Internal& External trainings

It is a set of educational activities which assisted the professional growing that brought new up-to-date knowledge, skills and ethical attitudes that will enhance and promote professional integrity.

During this last period, the training was done virtually and physically.

4.1.3.4. Coaching of nurses and its benefits

Coaching is the skill of providing ongoing and specific feedback in a supportive manner for employee learning, development and improvement. It is s process aimed at exerting a positive influence to improve the behavior or performance of a person. Coaching is a part continuous professional development.

Every semester, through 10 competences of professional monitoring tool, we evaluate each nurse on knowledge, skills and attitudes. Every nurse has been assessed and followed to achieve the maximum of autonomy in functioning (Branches included).

Coaching activities were focused on:

- ✓ Coaching visit,
- ✓ Long term coaching
- ✓ Coaching advises
- ✓ Technical support

- ✓ Provisional of trainings
- ✓ Others: support services, advocacy...

4.1.3.5. Coaching outcomes

- ✓ Improved professional communication
- ✓ Increased openness to personal learning and development
- ✓ Much more Accountability & responsibility
- ✓ Developing self-awareness
- ✓ Increases morale

The Hospital strives to accommodate a strong and competitive teamwork. Coaching comes to alleviate all challenges related to skills and knowledge.

4.1.4. Research activities

Research is creative and systematic work undertaken to increase the stock of knowledge. It involves the collection, organization, and analysis of information to increase understanding of a topic or issue. A research project may be an expansion on past work in the field. To test the validity of instruments, procedures, or experiments, research may replicate elements of prior projects or the project as a whole.

Ndera Neuropsychiatric Teaching Hospital is the only referral hospital in the country specialized in mental and neurological disorders. To achieve its vision and mission, the researches should be increased to improve and to adopt the updated therapeutic tools, techniques and means, etc.

- Clinical study to assess the treatment of Schizophrenia with Paliperidone Palmitate in Healthcare settings

The ongoing research is being carried out by Dr Rutakayile Bizoza. Sponsored by Janssen Pharmaceutica NV, the research is being carried out in Ndera Neuropsychiatric Teaching Hospital and other 4 health institutions in Rwanda, with target population of 100.

- The PhD Research project: Epilepsy and depression as co-morbidity

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.

The enlistment of 572 persons living with epilepsy (PwE), aged 15 years and older, in Ndera and the 424 PwE in Musanze has been completed.

– **Ndera & Musanze study progression**

Following the data cleaning performed with Romanian and Belgian teams, preliminary analysis has been performed. Final results are awaited to be presented in the findings seminar with the PI. At Musanze, the study is at the level of data collection.

– **Validation of tools in Kinyarwanda version**

- PHQ-9 tool,
- The Hamilton Depression Rating Scale

1. Masters and others projects

- Epilepsy knowledge, attitudes and practices of community health workers by Dr Stephen Muhumuza, a manuscript has been submitted to the International Journal of Public Health
- Prevalence of epilepsy using a door-to-door survey by Dr Peter Dedeken and Dr Sylvestre Mutungirehe. A manuscript was submitted to the European Journal of Neurology.
- Effectiveness of the involvement of community health workers by Dr Fidele Sebera and Peter Dedeken. A manuscript has been submitted to Human Resources in Health and comments of the reviewer are awaited.
- Re-admission of patients with mental conditions at the Ndera Neuropsychiatric Teaching Hospital at Ndera (Kigali, Rwanda) By Dr Dirk Teuwen and Mr. Michel Nshimiyimana it is under progression
- 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. By Dr. Peter Dedeken (UZ Ghent)
- Master in Health Economics and Pharmacoeconomics **by** Mrs. Alphonsine Murekeyiteto, registered at the Barcelona School of Management (Spain), the manuscript not yet published.
- Master in Public Health by Ms. Josiane Umwiringirwa, registered at the Mount Kenya University for a Master in Public Health. Under progression
- Master in Neurology at the Cheikh Anta Diop University Dakar (Senegal), Faculty of Medicine, Pharmacy and Odonto stomatology,

- Dr Arlene Ndayisenga enters the last year. Her research thesis topic is the psychosocial and reproductive health of women living with epilepsy seen at the neurology department of the Ndera Neuropsychiatric Teaching Hospital.
- Dr Sylvestre Mutungirehe enters the last 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.

4.1.5. Quality improvement & Accreditation

4.1.5.1. Quality improvement

The hospital sustains quality of services delivery through different quality improvement activities implementation. The main quality improvement activities implemented during this year 2021/2022 include quarterly hospital self-assessment, patient and staff satisfaction surveys, patient voice program implementation and management of patient complaints and suggestions.

During this fiscal year 2021/2022, the performance of hospital activities, both administrative and clinical, was 87.3%, there was an increase of 2.7% compared to the previous year.

In this year, the hospital also measured a patient satisfaction to ensure continuous quality improvement relaying on findings, recommendations or patient opinions. The average score of patient satisfaction was 85.4%, by implementing the recommendations and patients’ opinions from this year’s survey, the hospital expects to achieve at least 90% next year.

In addition, the hospital has conducted staff satisfaction survey with the purpose of promoting evidence based staff working conditions and the work environment. The average score of staff satisfaction in this year was 81%, by addressing raised issue, the hospital expects to achieve at least 92% next year.

In relation with patient centered care and their involvement in service delivery process, the hospital ensured regular collection of patients’ complaints and suggestions from suggestion boxes placed in all hospital services. This process of availing suggestion boxes in hospital services, collecting complaints/suggestions, analyzing them, developing an action plan for improvement, and awareness activities via media or IEC on different health topics are part of “Ijwi ry’Umurwayi” program, or Patient’s Voice program, aimed at improvement of healthcare service delivery.

4.1.5.2. Accreditation

Accreditation is regarded as one of the key benchmarks for measuring the quality of an organization and the hospital standards are organized in a framework of 5 risk areas: (1) leadership process and accountability, (2) competent and capable workforce, (3) safe environment for staff and patients, (4) clinical care of patients and (5) quality improvement.

The used criteria to determine Level I, II and III Recognitions:

Level I Recognition	Level II Recognition	Level III Recognition
Overall average score of 85% at Level I	Level I recognition must be achieved and maintained Overall average score of 75% at Level II	Level I & II recognition must be achieved and maintained overall average score of 70% at Level III
Average score of 75% for each risk area at Level I	Average score of 70% for each risk area at Level II	Average score of 60% for each risk area at Level III
Overall average score of critical standards of 80% at Level I	Level I critical standards are met at 100% Overall average score of critical standards of 80% at Level II*	Overall average score of critical standards of 100% at Level III

Table 59: The used criteria to determine Level I, II and III recognitions

Progressive assessment

The hospital has improved in all risk areas and all levels. The least improvement during the current survey is R#1 where level I was achieved at 47%, level II at 18% while during baseline level II was achieved at 21% and level III was achieved at 2%. During the FY2020/2021 survey, the remarkable improvement was done on the risk area 4 where the level I was achieved at 89%, level II at 84% and level III at 11% respectively.

Therefore, During the FY2020/2021 the hospital did not achieve level I.

The progress assessment for FY 2021/2022 was done and we wait for the results, the hospital had the target to achieve level I was not done last year and level II as the target FY 2021/2022.

4.1.6. Challenges of Education, Research, CPD and Quality improvement department

- ✓ The accreditation tool used which is somatic and not including issues related to the activities of the Hospital.
- ✓ The ignorance to memorize policies even if there were disseminated,
- ✓ Some university sent their students without MoUs
- ✓ Supervision of interns still few on the side of Universities/Institutions,
- ✓ Protective materials to be allocated to interns not sufficient,

4.1.7. Recommendations of Education, Research, CPD and Quality improvement department

- ✓ Advocate for adapted tool kit to neuropsychiatric hospital,
- ✓ Ensure dissemination of policies and procedures in different meetings wherever possible,
- ✓ Improve collaboration with new universities (MoU, Supervision, materials....)
- ✓ Initiate different researches in domain of neurology and psychiatry,
- ✓ Ensure the availability of hospital training plan and its effectiveness,
- ✓ Collaborate with institutions that providing CPD credits to clinical staff hospital,
- ✓ Improve on job training and other internal training.

CONCLUSION

The first months of the fiscal year 2021-2022 were marked by Covid-19 restrictions; and it was during the year that some of the restrictions were lifted. However, the impact of the pandemic could be felt in the people's lives as well as in the Hospital's operations. The pandemic also has something to do with the increase of patients' consultations and a large increase of the pathologies like depression. Despite the Covid-19 challenges on the mental healthcare services and implementation of some plans, the level of achievement of the Ndera Neuropsychiatric Teaching Hospital's 2021/2022 action plan was remarkable. As the consultations and hospitalization, the quality of the services provided at the hospital was also enhanced, since the patients' satisfaction has always been our priority. The achievements of the year, from infrastructure to the quality of the services, define us as a teaching hospital.

The Director General's Office thanks the Government of Rwanda, the Brothers of Charity and other partners who made a significant contribution to the development of the Hospital. We appreciate everyone's role in the realization of the 2021/2022 action plan; the Ministry of Health, Rwanda Biomedical Center (RBC) and other partners, as well as each and every employee of the Hospital.

The hospital targets to increase the level of achievement of the coming year's action plan. We are looking forward to more achievements, medical specialists in neurology and psychiatry and improving our services, infrastructure and strengthening awareness on mental health in Rwanda.

We commit to always be inspired by our motto: "Deus Caritas Est"; "God is Love".

Brother Charles NKUBILI

Director General