



*College of Medicine and Health Sciences  
School of Health Science*

**HIGH BED OCCUPANCY RATE IN MALE WARD A OF NDERA  
NEUROPSYCHIATRIC REFERRAL HOSPITAL**

A dissertation submitted in partial Fulfillment of the requirements for Master of  
Hospital and Healthcare Administration (MHA)

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**Kigali,02 June 2017**

## DECLARATION

I, KAGABO Emmanuel, hereby declare that the present capstone thesis entitled “**High bed occupancy rate in male ward A of Ndera Neuropsychiatric referral Hospital**” has been written by me without any copying from other student work, it has neither presented to any hospital or institution for evaluation nor published before, except referencing, quotations and acknowledgement are explicitly in the text.

Candidate.....Date

## **DEDICATION**

This Capstone thesis is dedicated to:

My Beloved Wife: UWIZEYIMANA Marie

My parents: HABİYAMBERE Manasseh and MUKANKUNDIYE Jeannette

My brothers and sister: TUYIZERE Samson, MUGANGA J Pierre and MUSABYEMARIYA  
Claudine

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Praise is to Almighty God for his donation on me the ability, valour to walk successfully in completing this project.

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I am profoundly thankful to the Director General of Ndera Hospital Brother Charles NKUBILI for his allowance, support and encouragement in conducting this project in hospital.

In addition, special thanks to the member of quality improvement committee and Male ward A staff in hospital for the deepest support and giving me helpful in conduct a quality improvement project,

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Finally My deepest and heartiest Gratitude to my beloved wife UWIZEYIMANA Marie, for allowing me the time to complete my project.

## **ABSTRACT**

**Background:**High bed occupancy rate is a concern of mental hospitals especially those with LMIC.This project tends to reduce high bed occupancy rate in Male ward A of Ndera Neuropsychiatric hospital in Rwanda. **Methods:**A pre and post interventional study was carried out in Male ward A to examine the impact of developing and implementing a guideline regarding admission and discharge process in Ndera Neuropsychiatric Hospital.243 patients admitted and discharged from ward A during the period of March, April and May 2016 were used in counting their stayed days in order to measure bed occupancy rate, whereas 236 admitted and discharged patient were used for measuring bed occupancy rate in male ward A in the period of Dec, 2016; January and February 2017. Percentages in pre and post intervention are compared to see if the high bed occupancy rate has reduced. Knowledge of staff on admission and discharge process are compared before and after training and information given to caregiver and family member is evaluated, on significant level of 0.005. **Results:**A total of 6344 stayed days for Admitted and discharged in pre-intervention in the month of March, April and May of 2016, were compared to 4809 stayed days for admitted and discharged in post intervention in the month of Dec 2016, January and February of 2017. Bed occupancy rate in pre intervention was 114.9% while after intervention the bed occupancy is 89%. Admission and discharge guideline is available in the ward A. 18 staff (90%) over 20 invited were trained, 55 (94.8%) over 58 family members were informed in the post intervention. P-Value of 0.001. **Conclusion:**The findings from the study show that by using all 8 steps of strategy of problem solving applied on high bed occupancy problem in psychiatric patients, and by using limited resources, guideline on admission and discharge process is reinforced to staff involved and informed to family members, the problem ceases to happen significantly on P-value 0.001.

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## LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired immune deficiency syndrome
ALOS	Average length of stay
BoR	Bed occupancy rate
CARAES	Cartate Aegrorum Servis
ED	Emergency Department
HBoR	High bed Occupancy rate
HIC	High income countries
HIV	Human immune virus
LMIC	Low and middle income country
LOS	Length of stay
MHA	Master of Hospital and Healthcare Administration
N.P.R	Nurse to Patient Ratio
NO.of	Number of
NPH	Neuropsychiatric hospital
RMoH	Rwanda ministry of health
S.P.S	Strategy of problem solving
USA	United State of America
WHO	World Health Organization

## **DEFINITION OF KEY TERMS**

**1. Neuropsychiatric Hospital:** a health facility providing inpatient and outpatient therapeutic services to clients with behavior and/or psychological effects that are associated with neurological diseases.

**2. Occupancy rate:** A measure of health facility inpatient use, showing the percentage of beds occupied during the reporting period. It is determined by dividing patient (census) days by available bed days (the number of beds multiplied by number of calendar days in reporting period).

**3. Admission (in hospital):** The number of patients formally admitted to a type of care in the facility.

**4. Length of stay (LOS):** The total number of calendar days between an inpatient's admission and discharge dates, but not including the day of discharge. Patients admitted and discharged on the same day have a calculated LOS of one day.

**5. Average Length of Stay (ALOS):** The average number of days of service rendered (discharge days) to all inpatients discharged (including deaths) during the reporting period. This average is calculated by dividing total discharge days by total discharges

## **CHAPTER ONE: INTRODUCTION**

### **1.1. BACKGROUND**

Even though, hospital bed are used to measure capacity of hospital and health care system, high bed occupancy rate can alert staff working in the department causing them stress and burnout. Especially nurses are not able to engage therapeutic relationship with patients due to ward overcrowding. Care of mental patients is still a problem due to limited bed located in countries especially those in LMIC.<sup>8</sup>

Ndera Neuro-Psychiatric hospital is located in Ndera sector, Gasabo District, in Kigali city<sup>1</sup>. It is the only Neuro-Psychiatric hospital in Rwanda. It was founded in 1968 by the congregation of the Brother of Charity with the convention of Rwanda government.<sup>12</sup>

The hospital is managed by the congregation of the Brothers of Charity with the support of Rwanda. It receives patients from all other referral hospitals and outside the country for specialized psychiatric and neurological services.<sup>12</sup>

The hospital has two satellite locations: Caraes Butare is located HUYE District and ICYIZERE CENTER in Kicukiro District.

The hospital has capacity of 274 beds with 267 staff among them are 1General Director,1 administrative assistant,1Director of administration,1Director of financial,1 internal auditor,9 permanent Doctors (2specialists and 7general practitioners ) and 4 temporary Doctors(4 specialists include 1 internist).It also has 82 mental health nurses A1,1 nurse A0, 7 hospital nurses A1,22 nurses(A2,A3) and 3 health auxiliary. Finally it has 134 supporting staff.<sup>12</sup>

The services provided by the hospital include outpatient; inpatients; psychosocial reintegration of child in their family; Physiotherapy; Counseling and Psychotherapy; Laboratory service; Pharmacy and HIV/AIDS service.<sup>12</sup>

Furthermore, the hospital has 7 inpatient services which are Ward A with 60 beds, Ward B(40),Ward C(40),Ward D(70),neurology(24),kundwa center(18) and Home Saint Jules with 24 beds.<sup>12</sup> Ward A (for men) and D (for women) are wards in which new psychiatric patients are hospitalized. They are acute inpatient wards. While Ward B and ward C are recovery wards in which improved patients are treated on psychotherapy and psychoeducation on their disease. Otherwise Kundwa center treats children less than 18 years, home saint Jules helps patients to be socially reintegrated and rehabilitated in the community and finally neurology service for neurological cases.<sup>12</sup>

Table 1 summarizes the information related to bed occupancy in Ndera Neuropsychiatric Hospital in year 2015.It shows us all inpatients admitted and the hospital capacity of hospitalization.Also it shows us the bed occupancy rate in past year of 2015 and its relatives like average length of stay and admission rate.

Table 1: Summary of data from inpatient service (Ndera hospital report,2015).

1.Total inpatients in 2015	43189
2.Average length of stay	40 days
3.Capacity in beds	274
4.Bed occupancy rate in 2015	103%
5.Average of admission for inpatient	5 cases

The male ward A of Ndera Hospital is where men patients from 18years old and above are admitted in order to receive treatment. Healthcare providers are involved in care of those mentally patients for stabilizing them. Table 2 shows how staff are appointed in the ward A and gives us the information about the bed occupancy in past year 2015.

**Table 2: Data from inpatient Ward A<sup>12</sup>**

Numbers of nurses	15 nurses
Number of Doctors	2 General practitioners and 1 psychiatrist: all are non permanents in ward A
Bed capacity	60 beds
Ward A length of stay	42 days
Monthly admission rate	98 patients
Bed occupancy rate	118%
Categories of patients	Male
Average admission rate per day	4 patients

## **1.2 PROBLEM STATEMENT**

**There is high bed occupancy rate in male ward A of Ndera neuropsychiatric hospital.**

High bed occupancy rate is the serious problem for many reasons: by observation the service inpatient is always overcrowded; patients lie in two or three in one bed or in the floor. The problem has been raised by many staff including the Director General of the hospital, they asked themselves what to do. So the problem becomes a challenge for the Hospital quality improvement. In meeting with General Director in review of problems facing the hospital in order

to conduct a research, he asked me to work on bed occupancy rate in male ward A. the study was based on the baseline assessment of 114.9% of bed occupancy.

### **1.3 OBJECTIVE OF THE STUDY**

Reducing high bed occupancy rate from **114.9%** to **90%** from **December 2016 to February 2017**

### **1.4 HYPOTHESIS**

H<sup>0</sup>: Training on the newly developed admission and discharge guideline will not reduce BoR in male ward A.

H<sub>a</sub>: Training on the newly developed admission and discharge guideline will reduce BoR in male ward A.

### **1.5 JUSTIFICATION OF THE PROJECT**

Bed occupancy rate is a serious problem in hospital where patients lie together on one bed or lie down on the floor causing to them uncomfortable and unsafe effects such as HAIs, poor hygiene, chips, ticks and bugs and prolongs their length of stay. It causes staff disorganizations and burnout. Not only patients or staff but also the hospital loss due to expenses when treating HAIs and service inefficiency.

This quality improvement project will reduce high bed occupancy rate in male ward A of Ndera NPH by developing new admission and discharge guideline in order to improve pre-existing

admission where we received unnecessary admission and prevent long stay in hospital for hospitalized patients.

## **1.6 ORGANIZATION OF THE THESIS**

This capstone thesis is divided into six main chapters. Chapter one introduces the setting and background of the hospital and shows information related to bed occupancy in hospital and especially in ward A of HNP Ndera. It outlines the hypothesis of utilizing the interventions to resolve the problem. Chapter two contains the literature review on BoR, and its relatives such as length of stay and other related factors in care of mentally ill. Chapter three describes the design of the study, detailed root cause analysis; selection of intervention and the method of evaluating the effectiveness of the intervention. The results of the study are presented in chapter four. A detail discussion based on the results of the project is also present. Finally, conclusion, summarizes the study and composes any recommendation based on this study.



## CHAPTER TWO: LITERATURE REVIEW

Bed occupancy rate is an important indicator in hospital management, thus it describes the measure of the capacity of health care system where in large hospital, and higher average of bed occupancy shows the service efficiency and lower average, the inefficiency use.<sup>3-4</sup>

Consequently, high bed occupancy rate compared to the low hospital capacity will be evidence of overcrowding leading to inefficient service.<sup>4</sup> It is measured in percentage.

Bed occupancy is highly related to length of stay and this might be the cause of it.<sup>19</sup> According to WHO, 2013, the recommended BoR is valued between 80 and 90%. They suggest that lower BoR is the inefficiency use of services and high bed occupancy rate lead to hospital crisis.<sup>25</sup>

The study conducted in England, by Acma et Al, 2010, was to evaluate the level of bed occupancy compared to readmission rate; the recorded BoR was over 85%. This cause the hospital crisis where patients turn away in general hospital due to inadequate care within the community.<sup>3, 5, 7</sup>

Another research carried out in surgical ward within the general hospital in California in USA, the bed occupancy rate can go over 93% which affect Ed high length of stay, whereas the result of the study carried in Singapore in mental health care shows the BoR lower than that in medical surgical. It is average was over 86%.<sup>1, 3</sup>

Inpatient service hospital is overcrowded due to bad process and poor community rehabilitations. Those 2 comparisons show that not only in mental health care where hospital is limited that they experienced high bed occupancy rate, but also in general hospital can have it due to poor process.<sup>4</sup>

Singapore suggested about reducing high length of stay as the solution to High bed occupancy while England propose early discharge in general hospital. Those solutions are possible.<sup>4, 7, 9</sup>

Additionally, WHO action plan 2013 to 2020, propose to countries on reinforcing community based treatment rather than hospitalization, it emphasize on aftercare services within the community where mental patients will be cared in general hospital, primary care. With aim that activities will be comprehensive, integrated and social service.

Otherwise the hospital could develop policies, guidelines in order to improve service delivery in mental health care and reinforce community based treatment, they have plan to mental health patient and their help them creating associations, LoS has significantly reduced.<sup>17</sup>

In spite of those efforts from HIC, Japan as high income countries still have problem with overcrowding and high LoS, Mentally ill are mostly stigmatized in and LoS is still high with 75days.<sup>23</sup>

Long hospital stay is the result of poor or unavailability of the community mental health based care and its reduction is accomplished by developing community mental health services and need infrastructures.<sup>4</sup>

In low income countries of Sub-Saharan Africa has been qualified as the place of low number of psychiatric beds per patients.<sup>4</sup> so, the available psychiatric beds are overcrowded in mental hospitals.<sup>4, 18, 24</sup> It was stated by the of work of Addisu F et Al, 2015 carried out in Ethiopia that length of stay higher than 21 days in mental health hospital, is considered as abnormal.

Los was related to prolonged hospitalization despite of that effect, lower Los may cause many relapses<sup>4, 20</sup>, Otherwise nursing process which is qualified as the systematic problem solving

applied to every patient, once not well performed cause serious problem, thus poor outcome and prolongs hospital stay.<sup>14</sup>

Discharge planning and developing aftercare service, was seen as 90, 3% in giving outcome.

Many hospitals in LMIC have problem of overcrowding due to limited resources and poor community reintegration and rehabilitation in the care of mental health service<sup>20</sup>

According to report on mental health system in Ghana, shows length of stay of 23, 6 days but the system were improved by the reinforcement of community based treatment, therefore long stay facilities, long residential facilities and day care center are available to support inpatient aftercare.<sup>16</sup>

Thus, it helps patients with mental disorder to achieve their own aspiration and goal developed.

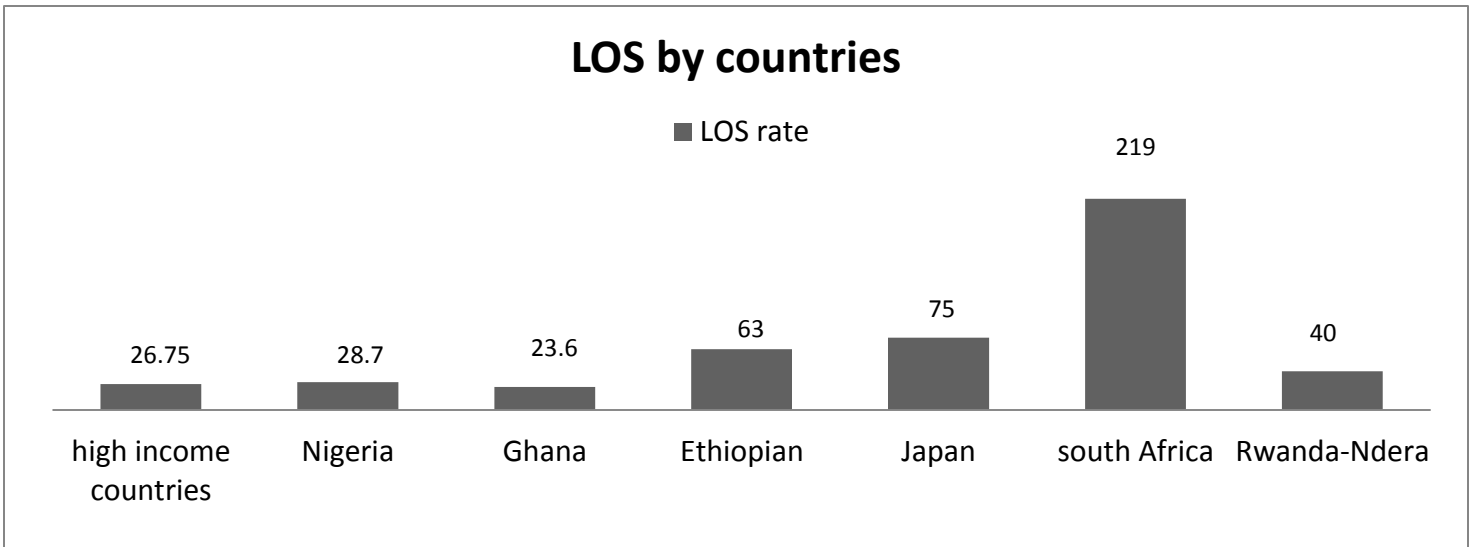
Although the report insists on training of more and more of health professionals in mental health care in Ghana, otherwise Nigeria don't have guidelines, protocol about mental health care. This increase BoR due to lack of policies and procedures.<sup>24</sup>

The findings from the assessment of mental health care in Uganda, in East Africa, made by WHO, the result shows that, there is only one mental health hospital. Thus cause BoR OF 100%. The government of Uganda establishes mental health policy and guidelines in improving service delivery in mental health where users and families are involved in the care of their patients. So that, when implemented, the BoR will be reduced in hospital.<sup>18</sup> Additionally, a study carried out by Lim et Al, 2014 on comorbidity, the result showed the high issues in comorbidity mental health and drug abuse. Mc Govern et Al, state that once a patient is presented in mental health service with comorbidity, mental health issues are priority to be care rather than drug abuse.<sup>1</sup>

Critically, Comorbidity also affect BoR, once Diagnosis are treated separately no overcrowding happened. Some diagnosis prolongs hospitalization, for example schizophrenic patients, otherwise they need housing and community support for helping them, taking medicines at home to prevent readmission for inpatient care.<sup>4, 15, 19</sup>

Ndera Neuropsychiatric Hospital was always overcrowded over 100% in past 5 years with high average of length of stay of 40 days<sup>12</sup>. Many factors which affect length of stay comorbidity of medical illnesses And/or drug abuse<sup>4</sup>.

Usually high bed occupancy rate is affected by length of stay and vice versa. The figure 1 describes the different length of stay in psychiatric patients in different countries.



**Figure 1:** Length of stay by countries

## **CHAPTER THREE: METHODOLOGY**

### **3.1 STUDY DESIGN**

A pre and post interventional study design was carried out in this project to evaluate the achievement of the intervention. The pre-intervention period from March to May 2016, concerned with summation of length of stay days from all patients admitted and discharged in acute ward A of the hospital, deepest root cause analysis was carried out in order to identify real root causes of high bed occupancy rate.

Based on the selected root cause, an intervention as a best solution to the problem was designed by using a comparative analysis (see appendix A) and implemented. Throughout, the implementation of the selected solution has already started in December 2016 and until now it is in continuity of the hospital practice for sustainability.

In order to evaluate the outcome of the implemented solution, the post intervention evaluation was accomplished during 3 months from December 2016 to February 2017.

### **3.2 BASELINE DATA COLLECTION PROCEDURE**

In order to understand the magnitude of high bed occupancy rate in ward A of Ndera neuropsychiatric hospital, a study was conducted from March to May 2016

#### **Tool**

No other specific tool used but only the common formula developed by WHO,2004 used to calculate bed occupancy rate.

**Bed Occupancy rate**= Total number of bed-days during the reporting period/ (Number of beds available \*reporting period)\*100

All bed-days of patient admitted and discharged from inpatient register and database (OPEN CLINIC) were used in the formula in the period of 3 months to measure bed occupancy rate of the ward A. Bed days are calculated by admission date minus discharged date of the patients.

In measuring Bed occupancy rate we based on period of 3 months due to limited time we have and the number of inpatients admitted in the ward A. They are March, April and May 2016. The bed occupancy rate was very high due to many causes which will be discussed later.

Table 3 shows the total of length of stay of admitted and discharged patients in the study period. We can't ignore average length of stay because they are in relation.

**Table 3:** Summary of Baseline Data

N <sup>0</sup>	VARIABLES	VALUES
1	Period	3months:March, april and May 2016= 92days
2	Number of bed available	60 beds
3	Number of inpatient admitted and discharged	243 patients
4	Total inpatient bed days	6344 days
5	ALOS	26days
6	<b>BED OCCUPANCY RATE</b> =6344*100/60*92= <b>114.9%</b>	

## **Sampling**

In our study, all inpatients bed days from all patients admitted and discharged in that period were taken in the study.

Table 4 summarize the different distribution of length of stay for inpatient from ward A. we have every patient and it's length of stay in days. it shows us that there are patients with the same length of stay. The data have characteristics such as Average of length of stay equal to 26 days, standard deviation and mode are equal to 16, while range is 84 days. by considering the mode, it tell us about how many days too many patients stay in the ward. Also the range recall us that the value obtained is an outlier in our data. finally those data help us to determine the bed occupancy rate from the ward A.

**Table 4: Frequency distribution of patients length of stay in Ward A**

LOS in days	Number of patients	LOS in days	Number of patients
1	3	33	3
3	2	34	4
4	2	35	2
6	3	36	5
7	2	37	3
8	3	39	1
9	6	40	1
10	1	41	3
11	1	42	5
12	12	43	2
13	12	45	1
14	12	46	3
15	7	47	1
16	16	48	3
17	7	50	3
18	6	51	1
19	3	53	1
20	7	55	3
21	13	57	1
22	15	59	1
23	6	61	1
24	6	63	3
25	2	65	1
26	4	66	1
27	5	67	1
28	5	69	3
29	6	70	2
30	8	71	1
31	4	73	1
32	2	85	1
SUB TOTAL	181		62
<b>TOTAL PATIENTS</b>	<b>243</b>		
<b>TOTAL LoS IN DAYS</b>	<b>6344</b>		

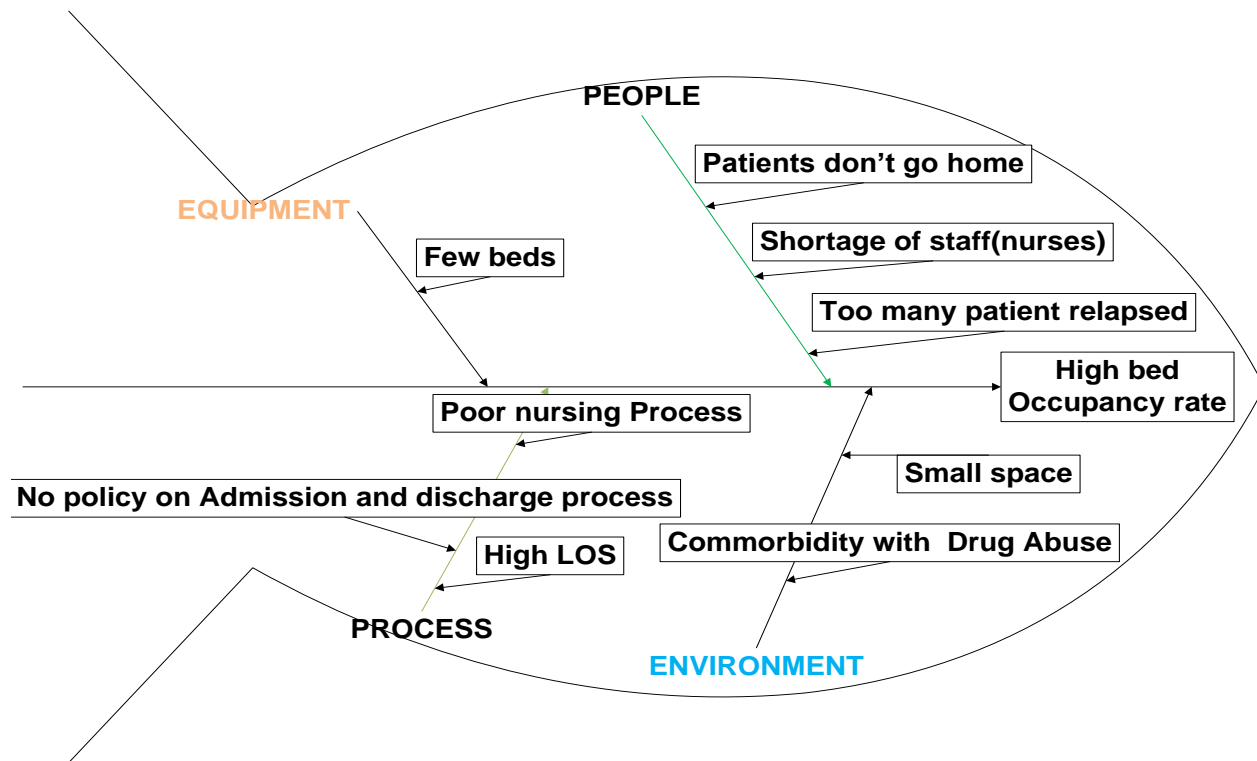


### **3.3 ROOT CAUSE ANALYSIS**

As the result of baseline data shows the bed occupancy rate of 114.9%in ward A,higher compared to the normal BoR of 80-90% established by WHO, 2004, a team composed by a researcher, 3staff from ward A including the in charge of ward, in charge of hospital planning,mental health supervisor and one General practitioner visiting ward A,was created and spend up to one month conducting root cause analysis planned in month of August 2016.

The initial steps was conducting such a literature review in order to search possible root causes of the problems,the team was informed on a fishbone in order to use it in collecting all possible causes by using the four parts of a it.

The common causes are:Shortage of staff,high length of stay,no admission and discharge policy,few beds,small space,Comorbidity with drug abuse,poor nursing care plan, many readmissions (relapses) and number of patient stayed after discharge,All possible root causes were collected and summarized in fishbone(Figure 2).



**Figure 2:** Root causes recorded in fishbone.

### 3.3.1: Shortage of staff:

An investigation was carried out in ward A based on all inpatients admitted in ward in the period of March, April and May 2016 founded in patient admission register, and a number of nurses who were available in ward in that period using staff time table..The ratio founded is compared to RMoH staff ratio recommendation, 2011. A tally sheet was used as a tool. See summary in table5.

**Table 5: Nurse to patient ratio in ward A**

<b>Indicator</b>	<b>Values</b>
Period	3months(in 90 days):March, April and May 2016
All inpatients admitted	334 patients
N <sup>0</sup> of Staff in that period	15 nurses
Patient Ratio	Nurse to patient ratio: $15 \div 334 = 1/22$ One nurse to twenty two patients
RMoH recommendation,2011	1/8 One nurse to eight patients.

The study has focused on nurse to patient ratio because;nurses (mental health nurses and general nurses) are always with patients doing care plan for them,education to patients and family members,daily mental status evaluation.

Low nurse to patient ratio in psychiatric mental health care were also found as the determinants of overcrowding<sup>11</sup>

### **3.3.2. High length of stay**

By using a tally sheet to record all inpatients admitted and discharged and formula to calculate the ALoS, the analysis was done by comparison to the recommended ALoS psychiatric patients as shown in Tables 6.

**Table 6: Average length of stay (ALOS) in Ward A**

<b>Period</b>	<b>March, April and May 2016</b>
Total LOS for inpatients in days	<b>6344days</b>
Number of patients admitted discharged in that period	243 patients
Average length of stay:ALOS	<b>6342days /243= 26days.</b>
Recommended ALoS in psychiatric settings	<b>21 days</b>

Length of stay affect BoR,in the way that patients stay long time in hospitalization without going home, so they lie on two or three on one bed.

### **3.3.3. Admission and discharge process.**

Via a patient flow chart developed by the team through observation,an investigation was carried out to see if the ward has a policy regarding admission and discharge of patients.When admitting or discharge patient, no clear policy where admission and discharge criteria written are followed. The process is recapitulated in the patient flow chart Figure 3.

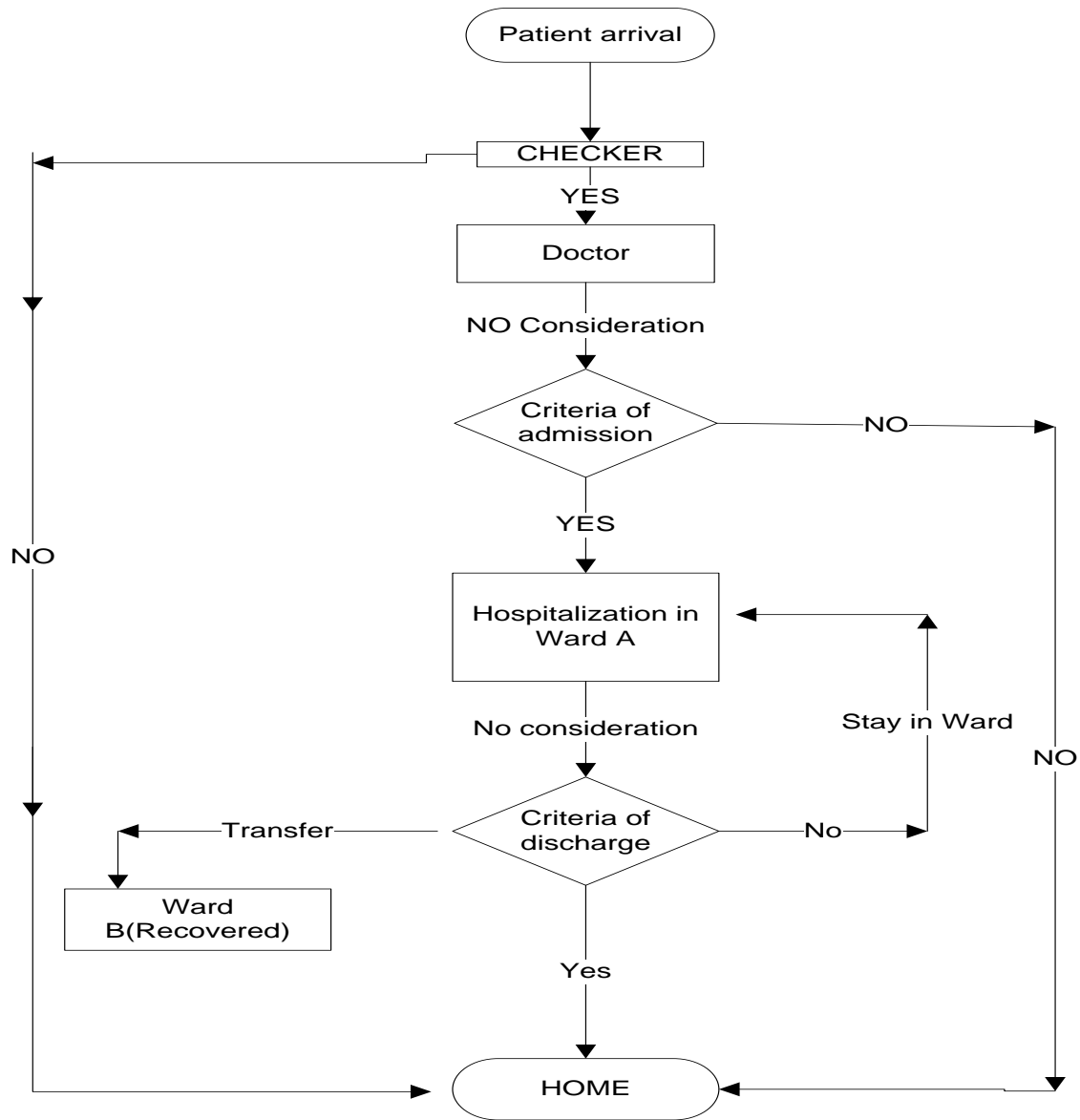


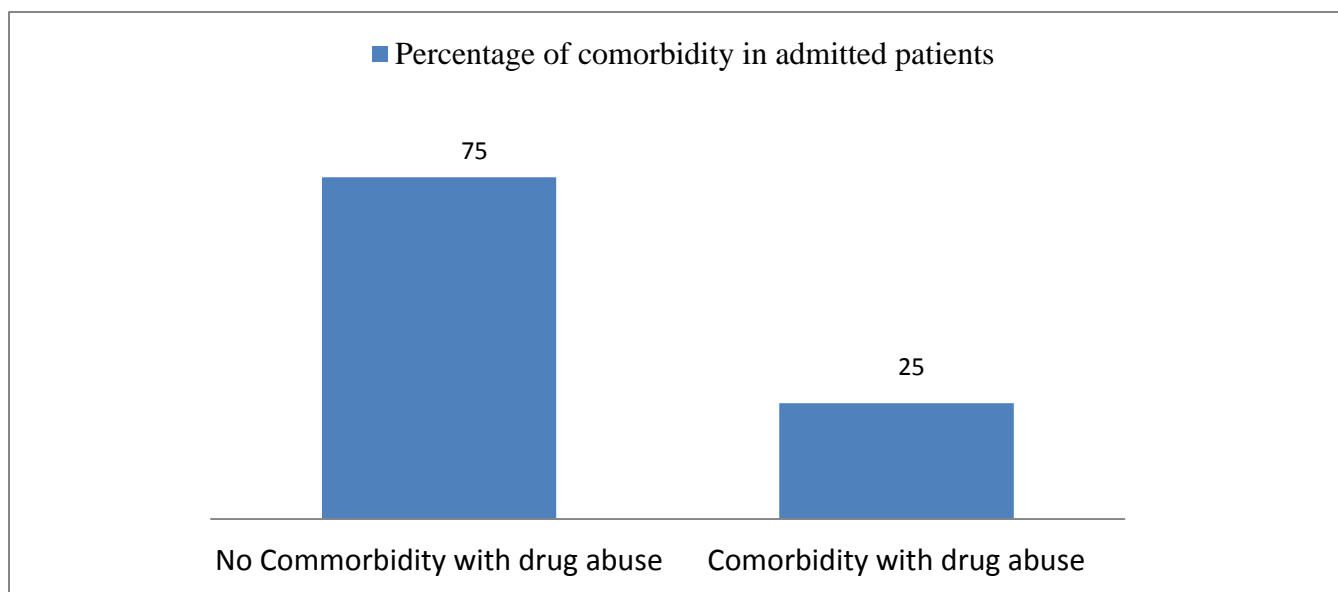
Figure 3: Patient Chart flow

### 3.3.4 Comorbidity with drug abuse

Other possible root cause suggested by the team is a big number of patients who has psychiatric diagnosis associated with the drug abuse.

Patient with such problem stayed in hospital the time longer expected not only having 2 diagnoses but also the unavailability of service caring people with drug abuse. Otherwise the research stated that psychiatric disorder are treated first than drug abuse.<sup>22</sup>

By using a tally sheet, the diagnosis of all admitted patients are investigated in order to record those who have psychiatric diagnosis associated with drug abuse and are presented in pareto diagram. In fact, 334 (100%) patients admitted in ward in the period of March, April and May 2016, among them, 85 (25%) psychiatric patients have comorbidity with drug abuse, see Figure 4.



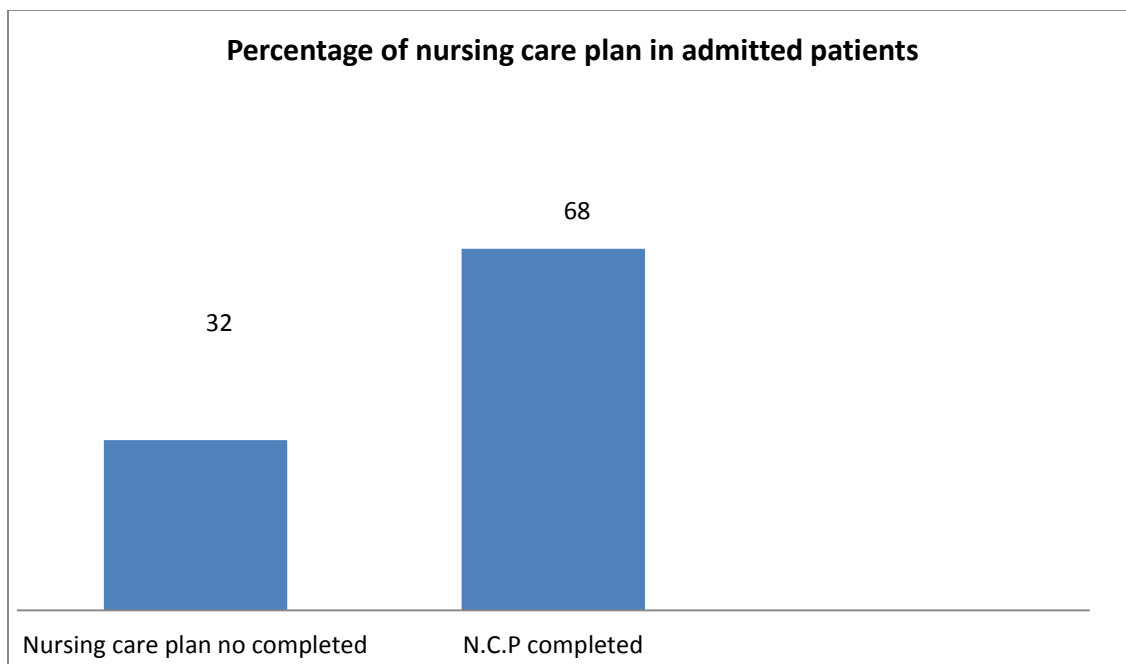
**Figure 4: Percentage of comorbidity with drug abuse .**

### **3.3.5 Poor nursing care plan**

The team suggested that poor documentation of nursing care plan to patients. One another could be the root cause which affected those patients to prolong their hospitalization in ward which

result to high bed occupancy rate. The literature states that all patients must have nursing care plan completed and it is evidence of mental health care going on.<sup>14</sup>

All files for admitted patients in the period of 3months: March, April and May 2016 were investigated to see if nursing care plan are available and completed. By using observation and recorded in tally sheet, all 228(68%) patients files over 334 admitted(100%) have nursing care plan completed,See Figure 5.



**Figure 5:** Percentage of nursing care plan completion (for inpatients admitted)

### 3.3.6 Too many readmitted

The investigation to all admitted and discharged patients was carried out in order to see the rate of relapse in the period of study.

So, the team found out 14(6%) patients readmitted in that period over 246 patients discharged.

### **3.3.7 Number of patients stayed in ward A when ordered discharged**

Finally the team finds out the rate of discharge order and how many patients did not leave the Ward .so many patients don't the ward because they have nowhere to go, or they family members have late to come for taking their patients.

So, the team has focused on the discharge order by the doctor that is why in total 248 patients who have ordered discharge by the doctor, 243 (98%) patients leave the ward while 5(2%) stayed in the ward A.

All possible root causes are set in the table in order to compare each one to the level of standards, So that we found the real root cause of the problem. From the table, people think that the problem can have one cause,but it shows the many causes of high bed occupancy rate as shown in Table 7.



**Table 7: Summary of result of root cause analysis**

<b>Possible cause</b>	<b>Results</b>	<b>Standard</b>	<b>DECISION</b>
1.Shortage of staff	N.P.R=1/22	1/8	<b>ACCEPTED</b>
2.High length of stay	26 days	21 days	<b>ACCEPTED</b>
3.Admission and discharge process	No policy	Policy in place	<b>ACCEPTED</b>
4.Comorbidity with drug abuse	85(25%)	No necessary to introduce Toxicomania ward	<b>REJECT</b>
5.Poor nursing care plan	228 (68%)	100% must have a nursing care plan.	<b>ACCEPTED</b>
6.Too many readmissions	14(5%)	No patient could be readmitted in Ward.	<b>ACCEPTED</b>
7.No.of patients stayed in ward	5(2%)	All 100% discharge order must leave the ward.	<b>ACCEPTED</b>

Based on the results of root cause analysis, among seven possible root causes analyzed, five of them are real root cause of high bed occupancy rate in the ward. They are: shortage of staff, high length of stay, and unavailability of policy regarding admission and discharge process, poor nursing care plan and Number of patients stayed in the ward after discharge order and Too many readmissions. The findings are communicate to the involved staff in the Ward in order to help the team in selection of the root cause to work on and suggesting solutions.

So, with the resource available, time recommended by the academic regulation and feasibility, the team with the involved staff took unavailability of policy regarding admission and discharge process as the cause work on.

### **3.4 INTERVENTION**

Based on the root cause selected, the team generate alternative solutions to address such root cause. The comparative analysis on the alternative solutions was conducted based on the cost, impact, time and feasibility of each intervention. The comparative analysis was conducted based on the cost, impact, time and feasibility of alternative solutions. It can be founded in appendix A

Through the result of comparative analysis, the final intervention selected was to develop new admission and discharge guideline and monitoring of compliance on it. The implementation plan is attached in appendix D. The implementation of guideline on admission and discharge process (appendix C) started in January 2017.

The intervention steps are: developing guideline, staff training on the guideline and monitoring compliance of utilization in the Ward.

#### **3.4.1 Developing guideline**

The team sits together and searched and consulted the appropriate articles related to admission and discharge process in psychiatric hospital in order to develop a draft of guideline.

After developing the guideline, it was reviewed by the quality improvement committee and finally was deposited in central secretary of Clinical Director for final approval.

### **3.4.2 Training of staff on the guideline and information given to family members**

After being approved officially, the involved staff were trained on the guideline include two receptionists, one social work, thirteen nurses and two doctors visiting the Ward A. the conference room was reserved on Thursday as usual. The training was organized in one session and trainees are evaluated before and after training in order to see their competences on the guideline.

Otherwise, Caregiver and families presented in the ward are informed on the new guideline on admission and discharge process, in order to change their mindset.

### **3.4.3 Monitoring compliance**

The supervision was done by a senior mental health in charge of supervision since the period of mid January 2017. All involved staff are reinforced to follow the guideline in order to facilitate follow up and evaluation of the project progress.

The guideline will be reviewed through the clinical audit and regular monitoring by a senior mental health nurse. So, mental health triage scale and discharge checklist are in place to ensure that the guideline is followed.

## **3.5 MEASURES**

Four indicators were used in the study to evaluate the outcome of the intervention. First is the rate of bed occupancy rate in ward A which our target indicator; second: availability of the guideline in the involved ward A; three: number of staff trained on the guideline to ensure compliance and four: number of family member informed on it.

### **3.6 DATA ANALYSIS**

#### **Bed occupancy rate**

The data collected on root cause analysis are all total length of stay of all patients admitted and discharged. The data was collected and was checked by data entry in the database. then was transferred in Microsoft Excel for Analysis.

#### **Training of staff**

The data was gathered before training and after training on their response sheet. They are recorded in excel and transferred in SPSS for analysis.

#### **Family member informed**

When caregivers of family members of patients are available, they were informed on the guideline in order to reduce their resistance of caring their relatives. So the nurse working in the ward A was in charge of that education given to those family members. the data were gathered in excel and analyzed in SPSS.

### **3.7 ETHICAL CONSIDERATIONS**

In order to respect the regulations of carrying out the project, the approval letter (Appendix F) signed by Director General of HNP Ndera was obtained before carrying out the study. Data collection forms on patient's length of stay did not contain patients' names but they will be identified by initial in order to protect their privacy and confidentiality. In participants evaluation form, they are not allowed to put their names in order to keep their ideas and purpose of the study.

## CHAPTER FOUR: RESULTS

### 4.1 Bed occupancy rate

A total of 246 patients admitted and discharged in pre-intervention in the month of March, April and May of 2016, had total length of stay of 6344days which are compared to 4809 days of 236 patients admitted and discharged in post intervention during the period of December 2016, January and February 2017. there is a difference and improvement because bed occupancy rate in pre intervention (114.9%) was reduced to (89%) in post intervention with a difference of 1535 days correspondent with 28.5%.

Table 8 shows that BoR in Ward A has significantly reduced based on the difference in percentage and the results are in WHO normal recommendation. Otherwise the 2 period of data collection are different and patient admitted and discharged are reduced with a difference of 10 patients. Moreover LoS has also reduced from 26 days to 20days with difference of 6 days. This shows an increasing in patients discharge.

**Table 8: Bed occupancy rate: Frequency percentage**

	Pre intervention	Post intervention	Change
Total inpatient length of stay	6344	4809	1535
N	Days	days	days
average LoS	26 days	20 days	6days
Bed occupancy rate (in%)	114.5	89	28.5

## 4.2. Staff Training

Admission and discharge guideline was not available in pre intervention; in post intervention it is available in the service where is used by staff.

Due to hospital practices, Training of staff was carried out at hospital in order increase their knowledge so that they will comply on the guideline.

So, before training staff were evaluated by 5 questions: Before training only 3(16.7%) of staff over 18 trained have knowledge on bed occupancy rate, whereas after training 18(90%) over 20 invited have knowledge on BoR.

Secondly, No staff who knows normal Average BoR before training while after training 18(90%) have knowledge on Normal average bed occupancy rate.

Thirdly, before training, only 7(39%) of staff agree with reporting BoR whereas 18(90%) over 20 staff invited agree of the reporting. fourth, 18(100%) of staff were not trained in the guideline of admission and discharge process, but now 18 (90%) over 20 invited are trained in admission and discharge guideline.

Finally, only 8(44%) before training agreed that the guideline is necessary, while after training 18(90%) over 20 staff invited agreed with the necessity of the guidelines.

As shown in Table 9, all data are computed in excel and transferred in SPSS for analyzing them. so all results show a significance difference with P-value  $<0.001$  and by using confidence interval of 95% which shows the highly significance change in staff mindset about patient admission and discharge.

**Table 9: Frequency,Percentage and P-value**

	Pre	Post	change	P value
Staff trained N	<b>18</b>	<b>18</b>		
knowledge on BoR	3(16.7)	18(90)	15(83)	<0.001 *
Knowledge on Average BoR	0(0)	18(90)	18(90)	<0.001 *
Agreement on reporting BoR	7(39)	18(90)	11(61)	<0.001 *
Be trained on Guidelines	0(0)	18(90)	18(90)	<0.001 *
Agreement of necessity of the guideline	8(44)	18(90)	10(55.5)	<0.001 *

\* Significant at P<=0.05 and CI: 95%

Into brackets=%.

### 4.3 Family member informed on the guideline

For better quality of care,family member could be involved in the care of the patients.so,they are informed on the guideline related to admission and discharge.

In the period of February 2017 the number of patient in ward A were 58 which shows that we had 58 family member.Therefore,in total of 58family member,only 55 got information on the guideline.There is a significance change in mindset,because in pretest evaluation,no one informed on the guideline whereas in post test 55(94.8%) over 58 are informed on the guideline.

So,those data are computed in SPSS for analyzing.

According Table 10,there is a significance change in their mindset with a p-value of 0.000 and with CI of 95%.

**Table 10:Family member informed on the guideline: frequency percentage**

	Pre	Post	Change	P.value
N	58	58		
information given to Family members	0(0)	55(94.8)	55(94.8)	0.000*

\* Significant at  $P \leq 0.05$  and CI: 95%  
**Into brackets=%.**



## **CHAPTER FIVE: DISCUSSION**

This study is a pre and post interventional study with objective of reducing high bed occupancy rate in Ndera Neuropsychiatric Hospital.

### **5.1. Bed occupancy rate**

The findings from intervention implemented show the difference reduction of bed occupancy in male ward A of Ndera Neuropsychiatric Hospital.

The project success leads to the reduction of BoR from 114.9% to 89% which is in the range of WHO recommendations, in the period of 3 months means that the study objective was achieved.

Several Factors contributed to the success of the project. Include: being a problem agreed by other staff including the Director General who advised me to conduct a study on the present problem; Good collaboration of Patients family members.

Moreover the highly involvement of senior management team was valuable in this study.

The findings are not concomitant with the policy elaborate by Mckee, 2004 from WHO, he suggested that by reducing bed occupancy rate need to build new appropriate infrastructures, moreover personnel need more education and training.<sup>25</sup>

In our project, setting other infrastructure is more expensive, need high cost and more time.

However, WHO action plan 2013 to 2020 has emphasized that mental health system in countries will reinforce community based psychiatric services in which Bed occupancy rate is reduced by

shifting of mental health care from in hospital to community care following deinstitutionalization.<sup>16</sup>

## **5.2 Knowledge of staff about the guideline**

Current findings from intervention shows the reduction in BoR,with developing criteria of admission,unnecessary admission were omitted and by restricting discharge plan,those who stayed longer in the ward are discharged.

Increasing knowledge of staff(Doctors,nurses,social work and receptionist) on guideline regarding admission and discharge process where mental health triage scale and discharge checklist were reviewed.This finding is consistent with other published studies. The study carried in Uganda suggested that by setting policy and procedures in mental health care is a reason of preventing high bed occupancy in Neuropsychiatric Hospital.<sup>21</sup>

Moreover,mental health system in Ghana states that by increasing of staff knowledge, education on community based treatment which follows patient discharge is an evidence of reducing bed occupancy rate in psychiatric hospital, once knowledge are implemented and applicable.<sup>16</sup>

According to our data, lack of policy and procedures regarding admission and discharge process in hospital has been a concern in increasing bed occupancy rate.

By implementing accreditation process policy and procedures in mental health system is needed.

Training given to staff on guideline has highly contributed to the significance reduction of high bed occupancy.

Nethertheless,high bed occupancy reduction contributes to inefficiencies services and resource may be wasted.

### **5.3. Information given to family members**

In our project,as the process indicator for reducing high bed occupancy rate,families and caregivers are informed on guideline during the family therapy.

They are them who have in consent with healthcare provider in treating those people with mental health problem.So that in our research, they are very important in helping us caring the patient during psychotherapy.

This result is concomitant with the study carried in Uganda,2010,suggests that by reinforcing admission and discharge process,need involvement of users and families in order to agree with more discharge even if the patient is becoming only stable.<sup>16,18</sup>

To inform families and caregivers shows good relationship between healthcare providers and families in treating their patient.

Moreover, the information given to families and care giver are highly contributed to high bed occupancy reduction.

Otherwise, this project had limitations. The evaluation timeline was short in the post-intervention period,the compliance on project was not evaluated in this study.

In addition,we didn't focused on community based treatment due to limited time and need high cost.

Therefore, our study supported the development of new policy and reinforcing knowledge of staff about the policy.

Moreover, the project was carried out in the only one ward of the hospital; the other research will be based in entire hospital in order to generalize the results.

In other research, they emphasized on creating community based treatment and long stay residential service in order to deinstitutionalization from the hospital, and those services take long time, means and highly involvement of government to ensure sustainability.

The solutions selected succeed but it could be other contributed factors resulting to lower bed occupancy rate in the evaluation period rather than implantation of the newly developed policy.

## **CONCLUSION AND RECOMMENDATIONS**

### **CONCLUSION**

Due to Rwanda reinforcement of good service delivery in hospital through accreditation process, monitoring and evaluation of policies and procedures are put in place, while the implementation of quality improvement projects is under Hospital.

In Neuropsychiatric hospital of Ndera, staff must adhere on policies, procedures and guidelines related to good service delivery in care of psychiatric patients.

There was high bed occupancy rate in Male ward A of Ndera Neuropsychiatric Hospital.

By developing and implementing the policy on patient's admission and discharge, BoR has reduced from 114.9% to 89% which is in the recommended value for service efficiency.

The knowledge of staff on patient admission and discharge has increased, patients caregivers and families are informed on the developed guideline

The null hypothesis was rejected while alternative hypothesis was retained.

The problem of high bed occupancy rate ceases to happen when compliance on the guideline developed is sustainable.

### **RECOMMENDATIONS**

Based on the findings of the study, the following recommendations are put forwards:

- To Hospital staff: to comply the guideline of discharge for more hospital efficiency.

- **To Hospital managers:**
  - ✓ To Address other real causes of high bed occupancy rate founded in this study for further research (Shortage of staff, high length of stay, Poor nursing Process and number of patient stayed after discharge).
  - ✓ Continuity implementing the project and follow up.
  - ✓ To ensure staff are compliant on the guideline.
- **To Rwanda Ministry of health** especially Rwanda Biomedical Center mental health division to have collaboration with Ndera hospital management team to help it reinforcing community mental health association, day care service and long term residential service for more care in the community in order to support discharged patient with aim of reducing patient's relapses.

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# APPENDICES

## Appendix A: COMPARATIVE ANALYSIS

This analysis is conducted with the following comparative criteria: impact, time to effect, feasibility, and cost with scores: 5=good; and 1=bad.

### Comparative Analysis: IMPACT

INTERVENTIONS	Impact	Score
Developing a guideline on admission and discharge process.	It will help staff to improve patients transfer and discharge when comply with it.	4
Reinforce Decentralize health system	This need training, supervision and evaluation of mental health activities within the community.	3
Standardize policy regarding quality care in psychiatric hospital	Staff will participate in quality care of psychiatric patients and training but they could resist because of work overload.	2

### Comparative Analysis: COST

INTERVENTIONS	Cost	Score
Developing a guideline regarding admission and discharge process.	It will take 100.000 frw	5
reinforce Decentralize health system	It will take 15.000.000frw	1
Standardize policy regarding quality care in psychiatric hospital	It will take 2.000.000	2

### Comparative Analysis: TIME

INTERVENTIONS	Time	Score
Developing a guideline on admission and discharge process.	It will take 1months	4
Reinforce Decentralize health system	It will takes 12months or over	2
Standardize policy regarding quality care in psychiatric hospital	It will take 12months or over	2

### Comparative Analysis: FEASIBILITY

INTERVENTIONS	Feasible	Score
Developing a guideline on admission and discharge process.	The hospital management team will agree but they will have barrier of some patients with	4
Reinforce Decentralize health system	The district hospital have barriers of building for caring psychiatric patients(hospitalizations)	3
Standardize policy regarding quality care in psychiatric hospital	Staff may resist of the change	3

### Decision Matrix



Alternatives interventions	Evaluation Criteria (5=good; 1=bad)				
	Impact	Cost	Time	Feasibility	Total
Developing a guideline on admission and discharge process.	4	5	4	4	<b>17</b>
Reinforce Decentralize health system	3	1	2	3	<b>9</b>
Standardize policy regarding quality care in psychiatric hospital	2	2	2	3	<b>10</b>

## **Appendix B: Written test addressed to trainees**

### **Pretest and Post test**

1. Do you know bed occupancy rate?
  
2. Do you know normal average BoR?
  
3. Do you think it is necessary to report BoR?
  
4. Are you trained in admission and discharge guideline?
  
5. Do you think admission and discharge guideline necessary?

**Appendix: C:Guideline of Admission and discharge process**

 <p style="text-align: center;"><b>NEURO-PSYCHIATRIC HOSPITAL CARAES NDERA</b>  <b>BROTHERS OF CHARITY</b>          P.O. Box : 423 Kigali - Rwanda ; Tel : +250 788 827 364 / +250 781 447 928          Website: <a href="http://www.caraesnderahospital.rw">www.caraesnderahospital.rw</a> E - mail : <a href="mailto:ndera.hospital@moh.gov.rw">ndera.hospital@moh.gov.rw</a></p> 		
<b>ADMISSION AND DISCHARGE GUIDELINE</b>		
<b>Guideline code/number:</b> QI 001	<b>Effective date:</b> 02.01.2017	<b>Revision date:</b> 02.01/2019
<b>Department:</b> All clinical services	<b>Applied to:</b> all clinical staff involved in admission, transfer and discharge of patients, patients and career.	
<b>Responsible person:</b> QI committee	<b>Approual:</b> Clinical director Dr BIZOZA(Psychiatrist)  Director General	<b>Signature/date</b>

**1. Purpose:** This guideline is applied to all staff involved in admission, transfer and discharge of patient within services.

It is useful in reducing unnecessary admissions, existing overcrowding in hospital and to diminish unsafe events for inpatients.

**2. Guideline statement:** all clinical staff should use regularly this guideline in admitting and discharging the inpatients.

### **3. Definition**

**3.1. Admission:** Is the act of transferring care of patient from the community or another environment to trust inpatient service.

**3.2. Transfer:** Is the movement of a patient and their care, treatments needs from one inpatient unit to another (of any inpatient care setting).

**3.3. Discharge:** Is the act of concluding an episode of care within an inpatient setting and handing over responsibility of the care to another service or family. (Eg: community based treatment, primary care, other hospital).

### **4. Materials:**

4.1. Checklist of mental status examination and mental health triage scale

4.2. Transfer assessment

4.3. Discharge checklist assessment

### **5. Procedures**

#### **5.1. Admission**

-Admission could be planned

-Admission should only occur when the individual's primary complaint is one of mental disorder.

-The decision for admission will be based upon a comprehensive risks assessment and needs.



-It will be based on triage scale with rating criteria: Risk of aggression, Risk of suicide / self-harm, Risk of absconding and Risk of physical problem.

-The reason for admission, expected outcomes and likely length of stay will be discussed in multidisciplinary team with the patient.

-Admission information should include administrative and clinical information pertinent to the benefits the patient e.g: Complete identification, health insurance, Mental State, Risks, Diagnosis, treatment plan.

-The bed will be age and gender appropriate for the service user.Eg.kundwa center with children aged below 18 years.

-The decision to admit should be made by a registered medical practitioner, consultant psychiatrist whichever is appropriate.

In consultation with the individual, members of the multi-disciplinary team where possible, and the individual's family/carer or chosen advocate (police, Prison), if appropriate (i.e. with the consent of the individual or in the case of a child).

- The decision to admit should be made after exploring alternative treatment options

-An individual should be admitted to the unit most appropriate to his/her needs,

In cases of emergency.

-An individual should be informed of the reasons why he/she is being admitted

-The following will be clearly recorded on the patient medical record:

- ✓ The reasons for the admission
- ✓ The patient understands of the reasons for admission
- ✓ The goals for admission from both the professional and service user perspective

-It is the admitting nurse's responsibility to ensure that the patient is met and greeted and orientated appropriately to the ward on arrival. The time and date of arrival will be recorded in the patient care record.

-The decision not to admit should be made after exploring alternative treatment options. Referral to a more appropriate service in accordance with the individual's existing needs should be made, where necessary, and a record of this should be maintained.

-An individual or family member or follower should be informed of the reasons why patient is not being admitted.

-unidentified, homeless, mental retardation People could be identified before admission.

## **5.2. Transfer**

-Transfer could be planned before admission.

-Transfer process in other ward (recovery ward) could be done according to client needs and assessment of risks.

-The decision to transfer should be made by a registered medical practitioner and should be agreed with the receiving ward.

-The ward multidisciplinary team (doctor, nurses, and psychologists) will have conducted a full and thorough assessment of risk and health which will be specific to the needs of the patient in a different inpatient setting. For eg: patient need psychotherapy, family education.....

- The reason for the transfer, expected outcomes, likely length of stay and discharge plans will be fully discussed with the patient and their caregiver and recorded in the patient record.

-All patients are not necessary to be transferred in recovered ward. It will depend on client need for psychotherapy and/or family therapy.

### **5.3. Discharge**

-The decision to discharge should be made by a registered medical practitioner or the responsible consultant psychiatrist whichever is appropriate, in consultation with the resident, members of the multi-disciplinary team where possible.

Discharge plan could be comprehensive and structured and should be developed as a component of the individual care and treatment plan. It should be reviewed and updated according to the patient's state.

-Discharge could be planned before an admission.

- ✓ The principal aims of discharge planning are to achieve:
- ✓ Continuity and co-ordination of care and treatment at home
- ✓ Provision and mobilization of a level of support that will correspond to the assessed needs of the patient for community living.
- ✓ Early intervention during crises and relapse of illness
- ✓ Optimal health and well-being for the patient/consumer

-The multidisciplinary team (Doctors, nurses, psychologists, social, occupational therapists and cashier) must be involved in the patient discharge planning.

-The discharge order must occur from Monday to Wednesday, the discharge occurs on Thursday and Friday every week.

-Family, and caregivers should be together involved with the patient and the treatment team in developing a discharge plan.

-Relevant clinical issues need to be addressed in discharge planning.

-Discharge planning must be individualized for each patient.

-No discharge should be planned Out of Hour Discharge.

-Managers of mental health services will be responsible for regular audits of discharge planning to ensure that there is continuing improvement of its format and implementation.

-Discharge patient are given medicines for 30 days, plan of follow up.

-The patient is discharged individually or with family member.

## 6. Monitoring Compliance

<b>Elements to be monitored</b>	<b>Responsible person</b>	<b>Tool</b>	<b>Frequency</b>
1.admission requirements identified for all inpatients are followed	Matron/senior mental health nurse	<b>Mental health triage scale</b>	Monthly
2.Transfer in recovered ward requirements are followed	Matron/senior mental health nurse	<b>Transfer assessment tool</b>	Monthly
3.discharge requirements are followed to all patients	Matron/senior mental health nurse	<b>Discharge checklist</b>	Monthly
4. Information is given to patient/family before discharged.	Matron/senior mental health nurse	<b>Discharge checklist</b>	Monthly

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### Appendix1 :mental health triage scale

<b>Triage code</b>	<b>Treatment required</b>	<b>Description</b>
<b>1</b>	<b>Immediate:</b> admitted	<b>Definite danger to self and/or others:</b> Severe behavioural disorder with immediate threat of dangerous violence.
<b>2</b>	<b>Emergency:</b> admitted	<b>Probable risk of danger to self or others</b> and/or Client is physically restrained in Admitted department and/or Severe behavioural disturbance: <b>Violent or aggressive:</b> – Immediate threat to self or others – Requires or has required restraint – Severe agitation or aggression.
<b>3</b>	<b>Urgent:</b> admitted within few days	<b>Possible danger to self or others</b> – moderate behavioural disturbance – severe distress Very distressed, risk of self-harm,Acutely psychotic or thought disordered,Situational crisis,deliberate selfharm,Agitated/ withdrawn
<b>4</b>	<b>Semi-urgent:</b> admitted few hours	<b>Moderate distress:</b> Semi-urgent mental health problem,Under observation and/ or no immediate risk to self or others
<b>5</b>	<b>Non-urgent:</b> no need to admit	<b>No danger to self or others:</b> Known patient with chronic symptoms,Social crisis, clinically well patient.

## **Appendix 2:DISCHARGE CHECKLIST**

- Safety satisfactory
- Physical health satisfactory
- Follow-up appointment arranged
- Patient is able to contact help if an emergency arises

### **Communication and follow-up clinician/service**

- GP
- Mental health clinician

### **Essential information to give to the follow-up clinician:**

- Main problem
- Medication given
- further information required by follow-up clinician
- Additional notification (with patient's c

**Appendix D: IMPLEMENTATION PLAN:GANTT'S CHART**

Tasks to be done	Responsible	Dec./2016		Jan./2017		Feb./2017		March/2017	
	Weeks	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4
1.meeting with the general director	Researcher								
2.meeting with senior management team	K.E,NTAK.E								
3.creating team and communicate them what to do	K.E								
4.select focal point in charge of Supervising developing a policy(guideline)	K.E,NTAK.E								
5.Writing a policy and procedure(draft)	Team								
6.send draft to medical director for approval	Quality team								
7.train staff on policy	K.E and NTAK.E								
8.meeting with ward A staff	QI team								
9.inform caregiver if any and families on admission and discharge process	K.E,PETER								
10. start implement the guideline in service	Team created								
11. Evaluation of inpatient to discharge them	Doctors(Jeannette)								
12. Data collection and analysis on Bed occupancy rate	Researcher K.E								

### Appendix: E MONITORING AND EVALUATION PLAN

<b>INDICATOR</b>				
<b>1.Outcome indicator</b>	<b>DEFINITION</b>	<b>WHO</b>	<b>HOW</b>	<b>WHEN</b>
Bed occupancy rate	BoR reduced within the period of 3months.	Researcher	percentage	March 2017
<b>2.Process indicator</b>				
1. Availability of the admission and discharge guideline.	Availability of the guideline in service and approved by the Clinical director.	Senior mental health nurse in charge of QI	Availability of it in service.	January 2017
2. %.Staff trained on guideline regarding admission and discharge process.	Number of staff trained in a given time	Researcher	By statistical test in SPSS	February 2017
3.% of family member informed on admission and discharge process	Ensure patients caregivers are informed on discharge protocol	Chief of ward A	By statistical test in SPSS	February 2017



## Appendix F: Authorization letter



Ndera, September 1<sup>st</sup>, 2016

Mr. Emmanuel KAGABO  
Masters of Hospital and Health Care Administration  
COLLEGE OF MEDICINE AND HEALTH SCIENCES

Dear Sir,

**RE: Permission for hospital attachment and accessing data**

The reference is made to your letter of August 30<sup>th</sup>, 2016 related to the above subject; I am pleased to inform you that your request has been granted. Therefore, you are permitted to carry out your attachment and access to data that will help you to conduct a quality improvement project to reduce high bed occupancy rate in psychiatric male ward in the period from September 1<sup>st</sup>, 2016 up to May 30<sup>th</sup>, 2017.

At the completion of the project you are expected that your intervention will improve the quality care in reducing high bed occupancy in Ndera Neuropsychiatric Hospital.

Yours sincerely,

Brother Charles NKUBILI  
Director General



Cc :

- Mr. Ndayisenga Eraste, Vice Director of Nursing
- Mr. MUSAFILI Felix, In Charge of Quality Improvement  
CARAES NDERA

