ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF HOSPITAL AND HEALTH CARE ADMINISTRATION

CAPSTONE PROJECT ON ENHANCING THE COMPLETENESS OF MEDICAL RECORDS AT IN-PATIENT DEPARTMENTOF KARAT PRIMARY HOSPITAL, KONSOWOREDA, SNNPR, ETHIOPIA

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Capstone project submitted to the department of hospital and health care administration, school of public health, college of health science, Addis Ababa University, in partial fulfillment of Master of Science degree in hospital and health care administration

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FINAL CAPSTONE PROJECT SUBMISSION FORM

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Full title of the capstone project	Enhancing the completeness of medical records at inpatient department of Karat primary hospital KonsoWoreda, SNNPR
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DECLARATION

Addis Ababa University

School of Graduate Studies

Assurance of principal investigator

The undersigned declares that this project complies with the regulations of the University and meets the accepted standards with respect to originality and quality. Principal investigator also agrees to accept responsibility for the scientific, ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the research publications office.

M.Sc. candidate: Kafita Katusa (BSc)

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Date of submission: _____

This project has been submitted with approval by advisors.

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APPROVAL BY THE BOARD OF EXAMINERS

This capstone project by Kafita Katusa is accepted in its present form by the board of examiners as satisfying capstone project requirement for the degree of Master of Public Health in Hospital and Health Care Administration.

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ABBREVIATIONS AND ACRONYMS

ALOS	average length of stay
BOR	bed occupancy rate
BSc	Bachelor of Science
CEO	chief executive officer
CCO	chief clinical officer
EHSTG	Ethiopia hospital strategic transformation guide line
FGD	focused group discussion
IPD	in-patient department
HMIS	health management information system
HPMI	hospital performance monitoring improvement
HRH	human resource for health
KPH	karat primary hospital
KPI	key performance indicator
MHA	Master of Hospital and Health care Administration
MRN	medical record number
MSc	Master of Science
PhD	philosophy of doctor
SMT	senior management team
SNNPRS	southern nation nationalities and peoples regional state
SPSS	statistical package for social science

ABSTRACT

Background: The completeness of medical records is key performance indicator that is related with delivery of healthcare services in the hospital and assessed with minimum set of indictors such as physician note, physician order sheet, Nursing care plan, medication administration sheet, discharge summary, progress note and clinical pharmacist record form.

Objective: The objective of the study was to enhance the completeness of inpatient medical records from 22% to 60% in time period from Feb to June, 2018 at In-patient department of Karat Primary Hospital, KonsoWoreda,SNNPR

Design: before-after interventional study was carried from Feb to June, 2018 using document review, observation, inpatient medical record review form and focus group discussions.

Setting; Karat primary hospital, SNNPR, Ethiopia

Participants: SMT, Medical director, matron and all IPD clinical staffs.

Result: the overall completeness of medical records rose from 22% pre-intervention to 54% post-intervention in in-patient department of Karat primary hospital from Feb to June, 2018 with total budget of 25000.00 Ethiopian Birr.

Key words: medical record, availability, completeness, Karat primary hospital, SNNPR, Ethiopia.

CHAPTER ONE: ORGANIZATIONAL DESCRIPTION

1.1. Geographic location, population and services

Karat primary hospital is found in Southern Nations and Nationalities Peoples Regional Government in Segen Area People's Zone, Konso woreda among three/3/ primary hospitals. The hospital is **3kilo meters** far away from Karat town**, 38kilo meters** from Segen Zone, **365 kilometers** from Hawasa town and **554 kilo meters** from Addis Ababa town.

The hospital provides preventive and curative services like inpatient services, maternal and child health and delivery services, surgical services, anesthesia services, nursing services, emergency services, eye clinic services, dental care services, radiological services, laboratory services, pharmaceutical services, infection prevention activities, hospital sanitation and waste management, housekeeping and laundry services to above 270,000 Konso people and other neighboring woredas like Ali,Derashe,Burji,Amaro and Teltele since 2014 G.C.

The hospital has 174 staffs and among these staffs 103 are clinical and 71 are non-clinical. The served people per year in relation to outpatient, in-patient, emergency and delivery in quarter one and two on average were 13196, 2296, 2824 and 1452 respectively.

1.2. Vision, mission and core values

1.2.1. Vision

The vision of the hospital is to be one of the general hospitals in Ethiopia by 2025.

1.1.2.2. Mission

The mission of the hospital is to reduce morbidity, mortality, disability and improve the health status of the community through providing comprehensive promotive, preventive and curative services in collaboration with all stake holders and community involvement.

1.1.2.3. Core values

The c o r e values of the hospital are community first, accountability, impartiality, respecting the law, be a role model, collaboration, professionalism and compassion.

CHAPTERTWO: BACKGROUND

2.1. Introduction

As key performance indicator, Medical record completeness is related with delivery of healthcare services in the hospitals and statistics collected from them are used to review the incidence and type of diseases treated and different procedures performed. With daily bed census medical records are used to assess the utilization of services and enable the hospital to make appropriate financial and administrative plans and to conduct vital research. [1-3]

The completeness of medical records was assessed for discharged clients in terms of minimum set of documents present and all entries signed such as physician note, physician order sheet, nursing care plan, medication administration sheet, and discharge summary. [1, 2] The two indicators progress note and clinical pharmacist record forms also considered as minimum elements giving up to Seven (7) in addition to above Five parameters .[4]

Currently there are 43 KPI to be reported monthly and quarterly from government hospitals among these 17 are included in revised HMIS and 26 are in revised HPMI 2017 and medical record completeness is 10^{th} KPI in these 26 KPI's. [4]
Karat primary hospital is one of the hospitals that were adhering to national reforms since its establishment to make services effective and efficient.

2.2. Problem statement

In developing countries**,** medical record management is often lacking even if medical record is a multifunctional document that is used to communicate and document critical information about patients' medical care among health care professionals. [5, 6]

In Ethiopia Medical records has not been a priority, generally inadequately supported and poorly managed and was a significant problem that affects the quality of health care services in many hospitals.. The study done in a rural hospital in Ethiopia shows that only 45.7% of medical records were complete. [1]

In Karat primary hospital, quarter two EHSTG medical record check list assessment showed that 87.5% met regarding the overall medical record management whereas the KPI18 (ed. 2011) and KPI 10 (revised 2nd ed. 2017) total implementation score was 60 % as of assessments done in quarter one and two on average in 2018 G.C. The base line assessment done in Jan, 2018 showed that 11(50) medical were complete with score of 22 % which indicated that the implementation at Karat primary hospital was poor and far from the standard that is 100% and lag behind by 78%. This was due to negligence, poor training, activity not incorporated into BSC, no guide line or protocol on medical record completeness, poor documentation, no formats and confusing formats.

Therefore, the initiated project to enhance medical record completeness at inpatient department of Karat primary hospital, konso woreda, SNNPR was an important issue that was supported by SMT and staffs of in-patient department to identify the areas of failure or gaps and device intervention to fill the gap.

2.4. Public health relevance

The project put ground to further assess the potential of quality improvement in strengthening medical records management in karat primary hospital, a foundational aspect of health systems in low-income countries as well as improves service delivery to make the institution center of excellence. It was also source of information for other hospitals in the country and likely to inform them on similar problems and challenges as well as on ways to address them. Also improve medical record completeness practices and increase productivity and an atmosphere of faith and trust by patients in services received at karat primary hospital and to promote further research to address existing gaps not identified and towards improving service delivery as result contributed to the body of research in the field of medical records in general.

CHAPTER THREE: ROOT CAUSE ANALYSIS

3.1. Collect possible root causes

The situational assessment, root cause analysis carried out in March 2018 G.C with senior management team, nursing committee and clinical staffs' in in-patient department of KPH with a total of 4focused group discussions suggested opinions such as negligence (Lack of commitment and no moral) ,poor training ,staff shortage ,activity not incorporated into BSC ,no clear job description for staffs ,no guide line or protocol on medical record completeness, poor documentation (physicians document all forms in one and forms lost from chart or folder) ,no formats (weak SMT and budget shortage) ,confusing formats and no supervision. The result of focused group discussion was displayed in fish bone diagram below (figure 1).

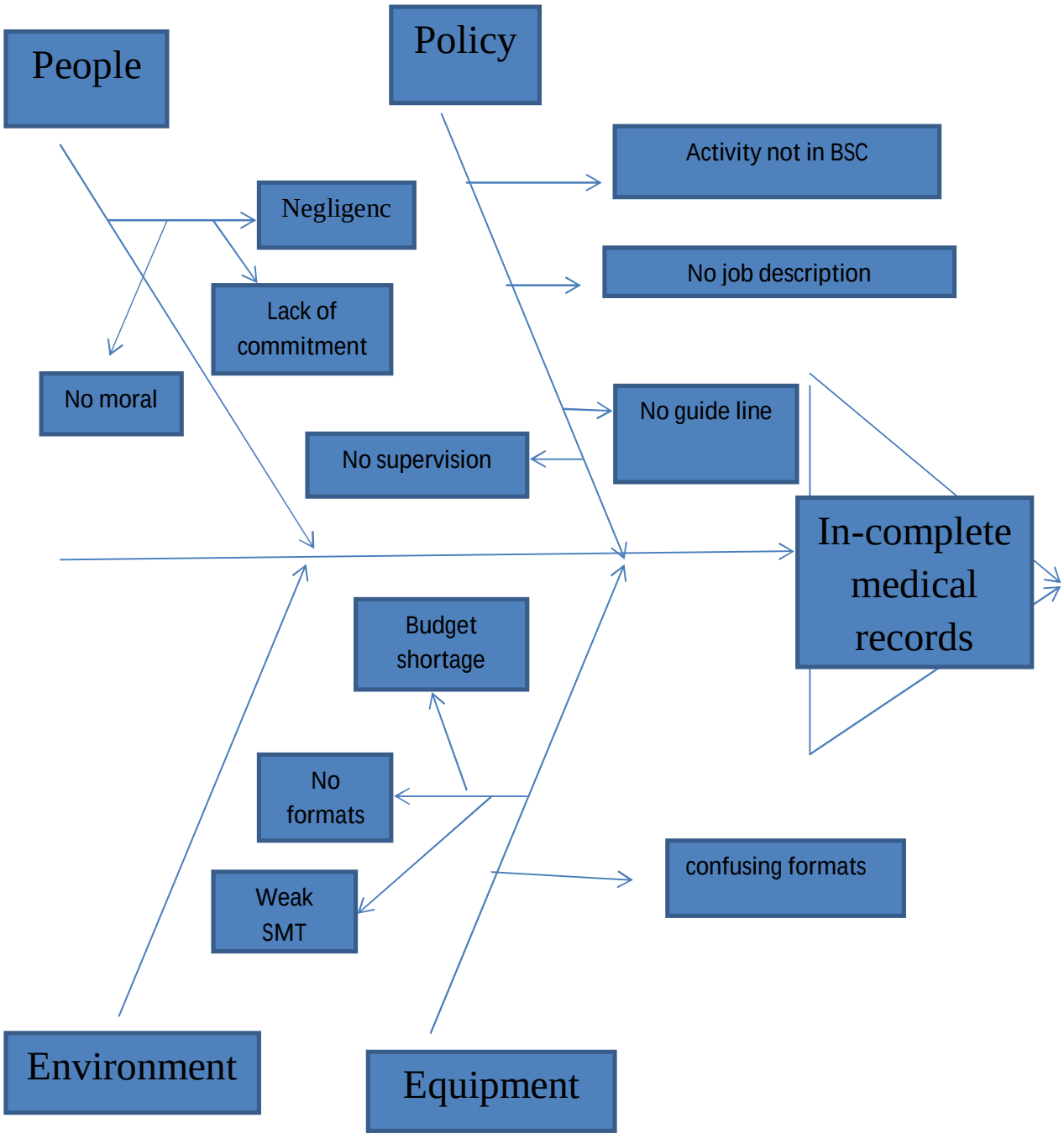

Figure 1: fish bone diagram showing the result of FGD held to identify the possible causes of poor medical record completeness in Karat primary Hospital, SNNPR, Ethiopia. March, 2018.

3.2 verification and real root cause

From training document review, we found that training was given on quality management in Nov-2017 and July-2018.On HMIS it was given in June-2015, Jan-2017, March-2018 and May-2018.Training on documentation was provided in Feb-2018 and nursing care standard in Dec-2015, Jan-2016, Feb-2016 and March-2018(standard two times per year) .Training of trainers was given to Matron nurse and quality officer on revised HMIS and HPMI. From the review we concluded that poor training was real root cause for in-complete medical records.

In relation to negligence it was not directly known or understood but, it could be suggested that as even if 68% formats attached only 22% was completed which showed poor commitment of staffs or poor moral of staffs and seemed root cause but, not real root cause.

There were Seven Doctors in karat primary hospital but, the standard says Nine Doctors (GP).It seemed root cause but not real root cause. The work force plan showed that one nurse for six beds per shift that is in 8 working hours. In karat primary hospital 63beds were functional during base line assessment in Jan, 2018 and dividing 25 nurses to 63 beds gives a ratio 1:3 that is one nurse for 3 beds which was below standard that is 1:6. Therefore, it was not root cause.

Basic score card was part of business processing re-engineering and guiding civil servants to plan, do, study and act(PDSA).The management agreed and incorporated the activity in BSC because career structure, reward and upgrade based on it. During base line assessment the activity was not incorporated in BSC and it was real root cause.

As observed some parts of nursing care plan format (annex-7) were confusing, not clear and duplicated. From this point of view we could understand that confusing format was root cause but not real root cause.

All staffs of karat primary hospital have their own job description that in detail show their responsibility. The formats are developed by human resource staffs and provided to all staffs .The format was signed both by individual staff and human resource head and filled in individual file. This was not root cause.

In 2018 hospital got Nine million from government ,three million to be collected from revolving fund and One Million from partner (woreda administration) with a total of thirteen million was budgeted which showed six thousand increment from previous year budget. It was not enough budgets to meet the hospital standards. It seemed root cause but not real root cause.

During data review we couldn't find guide line and/or procedure for medical record completeness as job aid. It was real root cause.

CHAPTER FOUR: LITERATURE REVIEW

To maintain the continuity of patient care, measure qualities of care provided at the hospital and ensure health provider has full information about the patient when providing healthcare medical records should be complete and accurate. [2, 4, 7]

Comprehensive medical records are a cornerstone in the quality and efficiency of patient care as they can provide a complete and accurate chronology of treatments, patient results and future plans for care and to investigate adverse events in health care settings. [1, 5] It is also very essential in the provision of health services, especially to improve the quality of service and patient safety [8]

A well planned evaluation of medical records and the related clinical documentation practices allows hospitals and physicians to have an accurate view of their current standings with regard to accuracy and compliance for medical record keeping. The law requires that all actions related to medical services be recorded completely and accurately. [9]

Accurate, timely and accessible health care data play a vital role in improvement of the quality of health services. [10] If standards , they can be used as a data abstraction training tool and quality control measure to assess the validity of medical record data abstraction. [11]

All information regarding the patient and his/her course of care at the hospital should be recorded in the medical record. This includes his/her presenting symptoms and medical history, any diagnostic test orders and results, all documentation from care providers and consultants, interventions, medications, therapy, and information and instructions at discharge including subsequent return visits to the hospital. [12, 13]

The medical record provides each clinician responsible for patient care. Each clinician should document his/her action as soon as possible after occurrence in medical records. Medical records of discharged patients should have all documentation completed by the discharging physician and other health care providers who have access to it before the patient is discharged from the hospital and the record should then be returned to the card room. [7, 12, 14-16]

Poor quality of the information in patient medical records may be a cause or a consequence of poor quality of care and associated with higher rates of adverse events. In United States of America, adverse events occur in an estimate of 2.9 to 3.7 percent of acute care hospitalizations and it is estimated that between 44,000 and 98,000 patients die in hospitals each year as a result of medical error. [1]

Primary records are the original records established to document the continuation of care given to a beneficiary and three categories for primary records health record, out patient record and inpatient record and it is a legal record of care [17, 18].

With aspects of medication administration sheet the study done in England showed that the medication history in the hospital medical record was often in-complete, as 26% of used medication was not recorded. Similarly in this study medication administration sheet was in-complete for 29.7% of the medical records. [1]

The study done in Zambia showed that 61% incidents of inaccurate medication histories at the time of admission were identified and that medication histories in clinical records of patients were incomplete or poorly documented. [19]

The Ethiopian`s federal ministry of health has been leading a sector-wide reform effort aimed at significantly improving the quality and accessibility of services at all levels. As part of this reform, health facilities throughout the country has been streamlining their operational process and building their capabilities with a view to make their services more effective and efficient. Accordingly hospital key performance indicators are a way of reform to measure specific issues and help to understand a system to compare and understand. [4]

The study done in rural part of Ethiopian general community hospital showed the overall Percent of medical record numbers completeness was 6.5 %(2 records /31records) pre- intervention and 45.7 %(16 cards /35 cards) with p-value of <0.01 post-intervention(table 1) [5].

Table 1: showing indicators measured in rural part of Ethiopian general community hospital for completeness of medical records May, 2009 G.C

Indicators measured	Pre-intervention	Post-intervention	p-value
Vital sign sheet	89%(8/9)	33%(3/9)	0.03
medication administration detail	89%(8/9)	33(3/9)3	0.03
Order sheet	89%(8/9)	66.7%(6/9)	0.34
Lab test results	78%(7/9)	33(3/9)	0.04
Other patient's information	78%(7/9)	42%(4/9)	0.51

The study done in Menelik II Referral Hospital showed that physician note format was attached for 111 (100%) and completed for 103 (92.8%), physician order sheet was attached for 111 (100%) and completed for 107 (96.4%), nursing care plan was attached for 109 (98.2%) and completed for 85 (76.6%), medication administration format was attached for 103 (92.8%) and completed for 78 (70.3%), and at last discharge summary was attached for 107 (96.4%) and completed for 93 (83.8%).[1]

The achievement for minimum set of indicators in medical records completeness in Dalefage Hospital, Afar Region improved significantly from the baseline 0% to 73.6% during post intervention evaluation. The analysis of each indicator showed that physician note format attached for 50(100%)and completed for 49(98%), Physician order sheet was attached for 44(88%) and completed for 42(84%) of patient cards, Nursing care plan formats was attached for 49(98%) and completed for 46(92%) of admitted patients, medication administration sheet attached 47(94%)and completed for 10(20%) and lastly discharge summary form were attached for 45(90%) and completed for 37(74%) of discharged patient cards.[18]

Standardization of format is needed for clinicians to document easily and save time .This completely documented record form is basis for proper epidemiologic evaluation of various patterns of disease as well as more accurate monitoring of quality of care delivered in the hospital. Ideally, patient information documented comprehensive medical records at the facility

level can contribute to a national system for epidemiologic surveillance and reporting, which can help with future health system planning and evaluation. [5]

Completed patient record is an important tool to monitor performance of quality health service delivery for patients or clients, report activities and to know and manage the gap. Additionally, it is pivotal for researchers to get complete data of patients that will contribute to the improvement of health service delivery and quality improvement. [20]

The projects done so far suggested interventions like training for Inpatient Healthcare Worker (Physician and Nurse) in which awareness and sensitization creation on the importance of medical records, Medical record as part of hospital reform and Medical record as part of hospital key performance indicator for quality of care and availing Medical Record Format. The others were standardization of medical record forms and supervision. [1, 5]

Karat primary hospital was using its best since its establishment to achieve KPI 18 (HMPI 2011) and KPI 10(Revised HMPI 2017) to the standard by adhering to regional and national reforms. One of action that the hospital was using is regular staff awareness creation to manage and update patient information since its establishment was in place (Feb, 2014 to 2015), but due to woreda people reaction to administrative structure (Zone) disagreement was created between region state and woreda in 2016 and 2017 and no training in relation to EHSTG and HMPI was given to staffs. Recently, TOT on EHSTG, HMIS and HMPI were given to Matron Nurse, Quality officer and HMIS focal.

5. CHAPTER FIVE: OBJECTIVES

5.1. General objectives

- The objective of the study is to enhance the overall completeness of inpatient medical records from 22% to 60%, at In-patient department of Karat Primary Hospital, KonsoWoreda, SNNPR in June, 2018 G.C

5.2. Specific objectives

- To enhance percentage of completeness of specific indicator from 35 % to 65 % at In-patient department of Karat Primary Hospital, KonsoWoreda, SNNPR in June , 2018 G.C
- To avail 100% formats or sheet at In-patient department of Karat Primary Hospital, KonsoWoreda, SNNPR.by April 16,2018

CHAPTER SIX: METHODS AND MATERIALS

6.1. Setting/Study Area and period

The study was conducted at Karat primary hospital, a governmental hospital found in KonsoWoreda of SNNPR and has total of 174 staffs composed of 103 clinical and 71 non-clinical. It gives services to above 27,000 konso woreda and other neighboring woreds like Ali, Amaro, Burji,and Gidole in Segen Area People's Zone and Tetele woreda in Oromo region. Its total patient flow was 13198 per year and 1100 per Month .The total number of beds were 63 with BOR of 57%. The total admission was 2296 per year and 192 per Month. The ALOS of was 5.2 and in-patient mortally was 3.5%. The study covered time from Feb, 2018 to June, 2018.

6.2. Study Design

Across sectional before and after intervention study was conducted at inpatient department of KPH from Feb, 2018 to June, 2018.

6.3. Source /target Population, study population and samples

6.3.1. Source population

All in-inpatient medical records on shelf (treated and discharged) and on treatment site

6.3.2 .Study population

All in-patient medical records treated and discharged were sourced for review

6.3.3. Study samples

Fifty (50) previous month inpatient medical records treated &discharged (January,2018) for pre-intervention(base line review) and Fifty(50)one Month inpatient medical records treated &discharged for after intervention or post-intervention (June,2018) were included in the study.(Source: Ethiopian HPMI manual 2011 1st ed. and 2017 2nd ed.)

6.4. Sample Size Determination

The total sample size of medical records surveyed was 100 and 50 for pre-intervention and 50 for post-intervention for discharged patients. The above sample size was taken based on Ethiopian Federal Ministry of Health Hospital performance and monitoring improvement reports. [Source: HMPI 1st ed.2011 and 2nd ed.2017]

6.5. Sampling Technique and Procedures

After sample size was known or determined, sampling frame was listed for study population from the Admission/Discharge Register then Simple random sampling technique was used during the study period by using lottery method (figure 2and 3). We obtain the Medical Records of these patients from the Medical Record Department. The missed medical record was replaced with another one using the same procedure or technique.

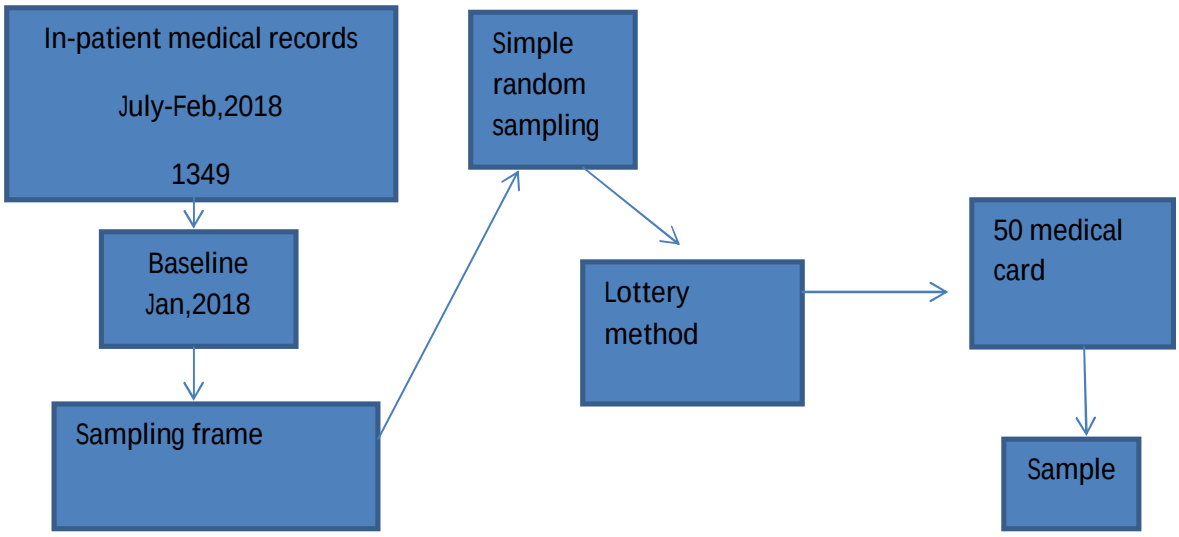

Figure 2: sampling procedure for pre-intervention KPH, Konso Woreda, SNNPR, Ethiopia, March, 2018 G.C

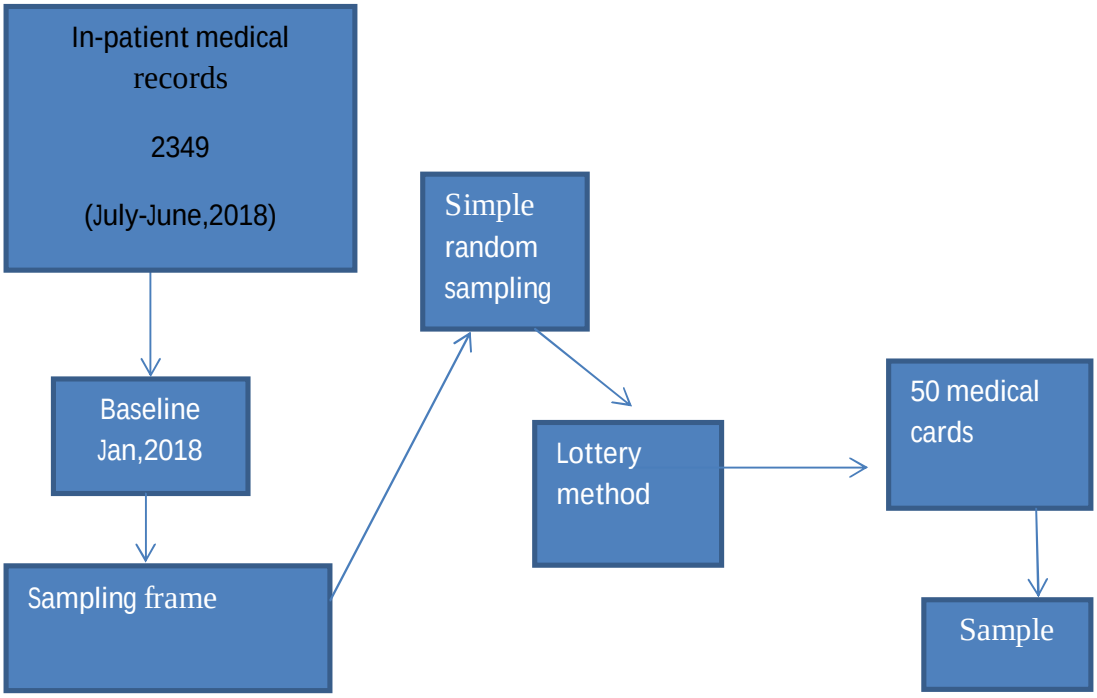

Figure 3: sampling procedure for post-intervention KPH, KonsoWoreda, SNNPR, Ethiopia, June, 2018 G.C

6.6. Inclusion criteria and exclusion criteria

6.6.1. Inclusion criteria

The inclusion criteria were one previous month inpatient medical records treated &discharged (January, 2018) for pre-intervention and one Month inpatient medical records treated & discharged for after intervention (June, 2018).

6.6.2. Exclusion criteria

The exclusion criteria were cards out of mentioned time and Cards on treatment site for post-intervention.

6.7. Data collection procedure (instrument, personnel, technique)

The trained data collectors used modified data extraction checklist and collected information from medical charts (annex-1) and supervised by supervisor. Focused group discussions under took during base line assessment, follow up and post –evaluation periods. Observation and document review were also used collect data from training document and during follow up. The supervisor was appointed to two data collectors to check whether the data they were collecting was according to check list developed on daily base. The data collected was analyzed by principal investigator daily and entered into software. There were daily meeting and communication after noon always.

6.8. Study variables

6.8.1. Dependent variable(s)

The completeness of minimum elements or indicators (physician or health officer order sheet, physician note or patient card, medication administration sheet, nursing care plan and discharge summary) 2011 ed. and other two added parameters progress note and clinical pharmacist record form 2017ed.

6.8.2. Independent variable(s)

Availability of resources (committed and skillful HRH and materials) and interventions devised

6.9. Operational definition(s)

Medical Record-They are papers that document the care and treatment a client received and documented in a folder for each client

Completeness of Medical Record -It is the presence of all the necessary information of patients based on the standard formats attached at the annex1 and all entries are dated and signed. Or Proportion of elements completed of the minimum elements of an inpatient medical record.

Inpatient Medical Record -It is the official record of client that contains information of admitted clients to general ward.

The equation is % of completeness = Total Score (yes`s) / (Number of cards checked for completeness) times 100% (Source Federal hospital performance monitoring and improvement manual)

6.10. Data Entry and Analysis Procedure

After data was collected, it was coded and entered into IBM SPSS statistics of version 23and was exported to SPSS excel sheet for cleaning, editing, and analysis.

6.11. Data quality management

To maintain data quality, training was given to data collectors and supervisor for one day and supervision was carried out by supervisor on daily basis to check completeness and consistency so as to ensure quality of data, during the data collection procedures.

6.12. Ethical considerations

Ethical clearance and Official letter for permission were obtained from Addis Ababa university school public health, department of health care and hospital administration and was given to karat primary hospital for cooperation of project. Selected samples' medical records were processed with assigned person and strict care and confidentiality of records that could identify study participants were protected. The way how to collect data's were clearly explained to concerned bodies by CEO and formal letter was written to these concern bodies.

6.13. Data dissemination

The data was disseminated to AAU (SPH), SNNPR Health Bureau and Karat primary hospital after approved by the primary advisors.

CHAPTER SEVEN: SELECTION OF BEST STRATEGIC INTERVENTION

Inpatient medical record completeness format contains many information about patient history, diagnosis, treatment order, nursing diagnosis and care plan and at last the patient`s health condition upon discharge.

The selected strategic intervention proposed based on the result of situational assessment that was done in March, 2018 with SMT of the hospital, nursing council (matron, vice matron and 7 head nurses) include the following:

1. Awareness creation
2. Enhance proper documentation
3. Develop guideline and procedure
4. Incorporate the activity in BSC
5. Do intervention 1, 3 and 4 together

To perform comparative analysis of alternatives, four criteria were used for comparison to select the convincing strategy among proposed interventions. These were:

✓ Effectiveness (Impact): What is the probability that it will work?

✓ Time to effect: How long will it take to work?

✓ Feasibility: Is there capacity and stakeholder support?

✓ Annual Cost: How expensive is it to carry out?

Table 2*: showing comparison for strategic evaluative criteria in karat primary hospital, SNNPR, Ethiopia, 2018G.C*

S.N	Strategies	Evaluative criteria(**5=very high; 4=high; 3=Moderate; 2=low; 1=very low)**				Total
		Impact	Time	Feasibility	Cost	
1	Awareness creation	3	3	5	4	15
2	Enhance proper documentation via 1:5 net- work meeting	2	3	4	5	14
3	Develop guide line/protocol	3	4	3	5	15
4	Incorporate the activity in BSC	2	4	3	5	14
5	Do interventions 1,3 and 4 together	5	3	5	3	16

Key: score was ranked 1-5 for the corresponding alternative interventions with 5 the highest and 1 the least score for the given evaluative criteria.

The best strategic intervention chosen by SMT, nursing committee and researcher was strategy five which include awareness creation, develop guide line and incorporate the activity in BSC.

CHAPTER EIGHT: IMPLEMENTATION OF THE INTERVENTIONS

Before this project initiated in our study area the practice of EHSTG and KPI was in place but, the operational standards was not achieved as planned because staffs didn't get adequate training as observed from training documentation , no protocol developed by the Department to be used by the staffs when giving care to their clients and the activity was not incorporated in BSC (which initiated staffs for their career development, career structure and other incentives and incorporated in to 4th quarter of fiscal year 2018).

Four day onsite training was given to 25 nurses from Medical ward, surgical ward, neonatal intensive care unit, stabilization center and post operation room for caesarean section mothers, 7 general practitioners, 1 Pharmacist and 4 medical record room staffs on EHSTG (Chapter 6 Medical Records Management and Chapter 7 Nursing and Midwifery Care Services) and KPI. The training was given by KPI focal, quality unit officer and Matron Nurse who got training of trainers (TOT) on revised hospital performance monitoring and improvement manual, EHSTG and Nursing and Midwifery Care Services.

We also developed facility based guide line on inpatient medical record completeness with specific role and responsibility for all technical staffs (physicians, nurses, KPI focal person and data owners) and other staffs(medical record staffs and SMT) working in Karat primary hospital for enhancement and sustainability of the project (Annex 8)

Finally, the activity was incorporated in BSC which is part of Business Processing Re-engineering and conducted two times per year that is first from July to December then from January to June. The basic idea behind was that it grasped the attention of technical staffs to use their effort to get higher score for different incentive packages.

The 3 main categories of questions to be answered in review form were presence of all 7 formats, with all entries dated and signed. As it was noted from base line assessment 68% medical records were attached although 22% of them were completed that indicated no format shortage. Therefore, all staffs in inpatient department were given duty to document correctly according to knowledge gained from training on EHSTG (Chapter 6 Medical Records Management and Chapter 7 Nursing and Midwifery Care Services) and KPI and complete inpatient medical record using the guideline developed as job aid in time for implementation accomplishment in April, 2018 G.C.

CHAPTER NINE: RESULTS

9.1. Pre-intervention

The analysis of each indicator during pre-intervention (base line assessment) was presented as follows. Physician note was attached for thirty five In-patient medical records (70%) and completed for eleven cards (22%) among fifty inpatient medical records. Progress note was attached for thirty seven medical records (74%) and completed for eighteen medical records (36%). Order sheet was availed for forty one cards (82%) and completed for fifteen (30%).Discharge summary was availed for forty cards (80%) and completed for sixteen (32%) medical records. Medication administration sheet was attached for forty eight medical records (90%) and completed correctly for thirty four medical records (68%). Nursing care plan was attached for thirty seven medical records (74%) and completed for fourteen (28%) medical records and finally Clinical pharmacist record form was availed for twenty five (50%) and completed for fifteen In-patient medical cards (30%).The following table (table 3) showed the findings for attachment and completeness of medical records for pre-intervention.

Table 3: showing the attachment and completeness of each indicator for pre-intervention Karat primary hospital, Konso Woreda, SNNPR, Ethiopia, Feb, 2018

S.No	Indicators	Attached	Completed
1	Physician note	35(70%)	11(22%)
2	Progress note	37(74%)	18(36%)
3	Order sheet	41(82%)	15(30%)
4	Discharge summary	40(80%)	16(32%)
5	Medication administration sheet	48(90%)	34(76%)
6	Nursing care plan	37(74%)	14(28%)
7	Clinical pharmacist record form	25(50%)	15(30%)

9.2 Post-intervention

The analyses of each indicator during post-intervention (after –intervention) come up with the findings as follows. Physician note was attached for fifty cards (100%) and completed for forty cards (80%) among fifty cards. Progress note was attached for fifty cards (100%) and completed for twenty seven cards (54%). Order sheet was availed for fifty medical cards (100%) and completed for thirty (60%).Discharge summary was availed for forty cards (100%) and completed for twenty nine (58%) medical records. Medication administration sheet was attached for fifty medical records (100%) and completed correctly for thirty eight medical records (76%). Nursing care plan was attached for fifty medical records (100%) and completed for twenty eight (56%) records and finally Clinical pharmacist record form was availed for fifty (100%) and completed for twenty seven In-patient medical cards (54%).The findings for attachment and completeness of medical records for post-intervention were summarized in chart below as follow (figure 2).

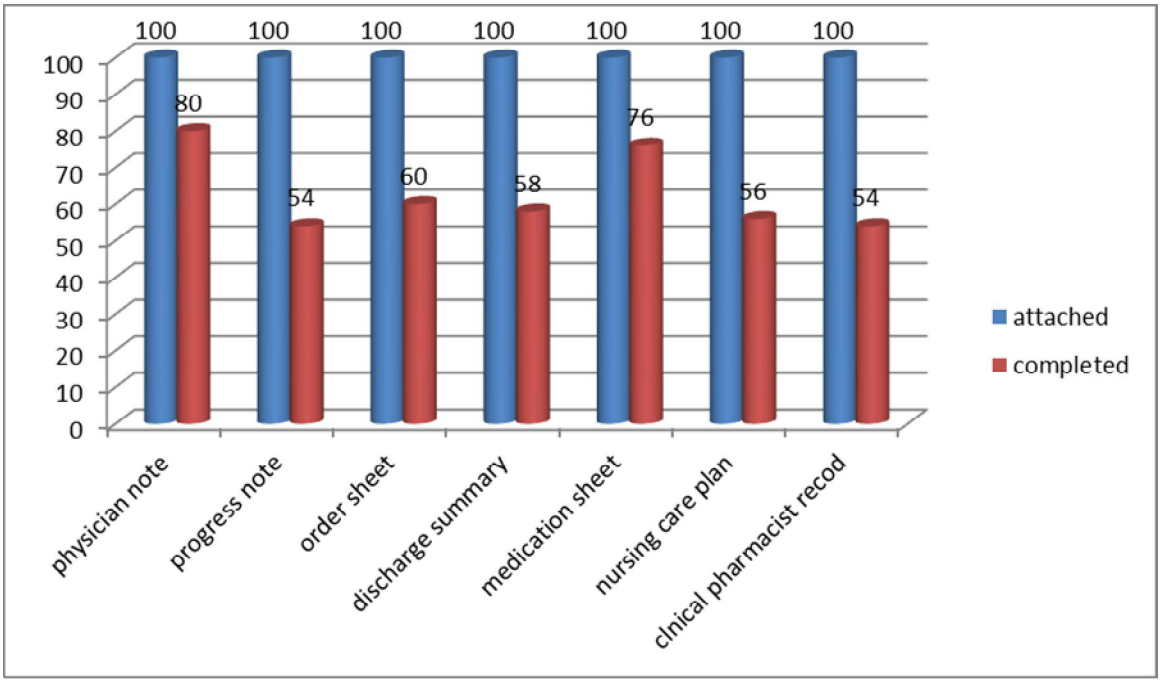

Figure 2: showing post-intervention attachment and completeness of in-patient medical records Karat primary hospital, Konso Woreda, SNNPR, Ethiopia, June, 2018

9.3 comparison pre-post intervention

The comparison of each indicator in terms of attachment for pre-post-intervention was as follow. Physician note format was attached for 35 (70%) pre-intervention and 50 (100%) post-intervention which showed increment by 30%.Progress note format was availed for 37(74%) pre-intervention and 50 (100%) post-intervention that indicated change of 26%. Physician or Health officer order sheet was attached for 41(82%) during pre-intervention and 50(100%) during post-intervention with change of (18%).Discharge summary was attached for 40(80%) in pre-intervention and 50(100%) in post-intervention with progress of 20%.Medication administration sheet was availed for 48(90%) in-pre-intervention and 50(100%) in post-intervention which had improvement of 10%.Nursing care plan was attached for 37(74%) in pre-intervention and 50(100%) in post-intervention that had increment of 26% from before-intervention and finally clinical pharmacist record form was availed for 25(50%) pre-intervention and 50(100%) post-intervention with enhancement of 50%(figure 3).

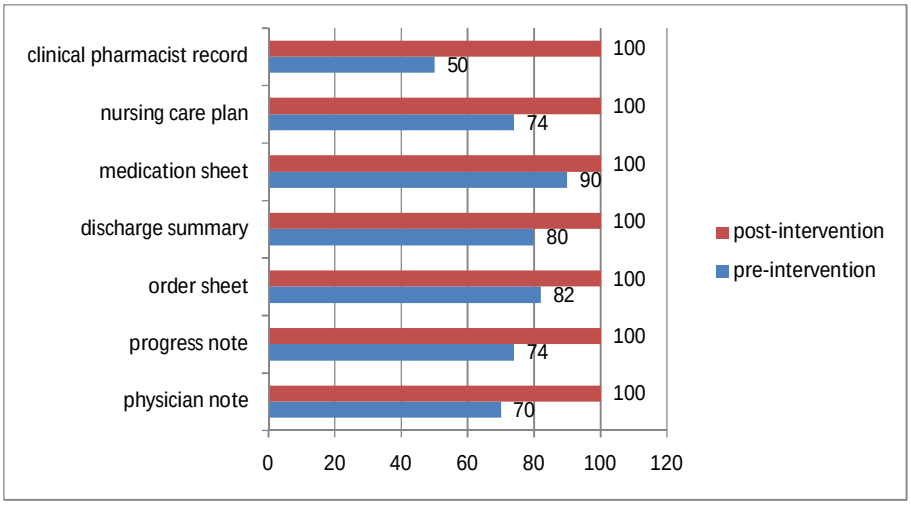

Figure 3: showing pre-post-intervention attachment comparison of in-patient medical records of Karat primary hospital, Konso Woreda, SNNPR, Ethiopia, June, 2018

The comparison of each indicator in terms of completeness for pre-post-intervention was stated as follows. Physician note format was completed for 11(22%) pre-intervention and 40(80%) post-intervention which showed increment by 58%.Progress note format was completed for 18(36%) pre-intervention and 27 (54%) post-intervention that indicated change of 18%. Physician or Health officer order sheet was completed for 15(30%) during pre-intervention and 30(60%) during post-intervention with change of 30%.Discharge summary was completed for 16(32%) in pre-intervention and 29(58%) in post-intervention with progress of 26%.Medication administration sheet was completed for 34(68%) in-pre-intervention and 38(76%) in post-intervention which had improvement of 8%.Nursing care plan was completed for 14(28%) in pre-intervention and 28(56%) in post-intervention that had increment of 26% from before-intervention and finally clinical pharmacist record form was completed for 15(30%) pre-intervention and 27(54%) post-intervention with enhancement of 24%(figure 4 & 5and table 4). The total completed medical records were 22 among 50 with overall score of 54%.

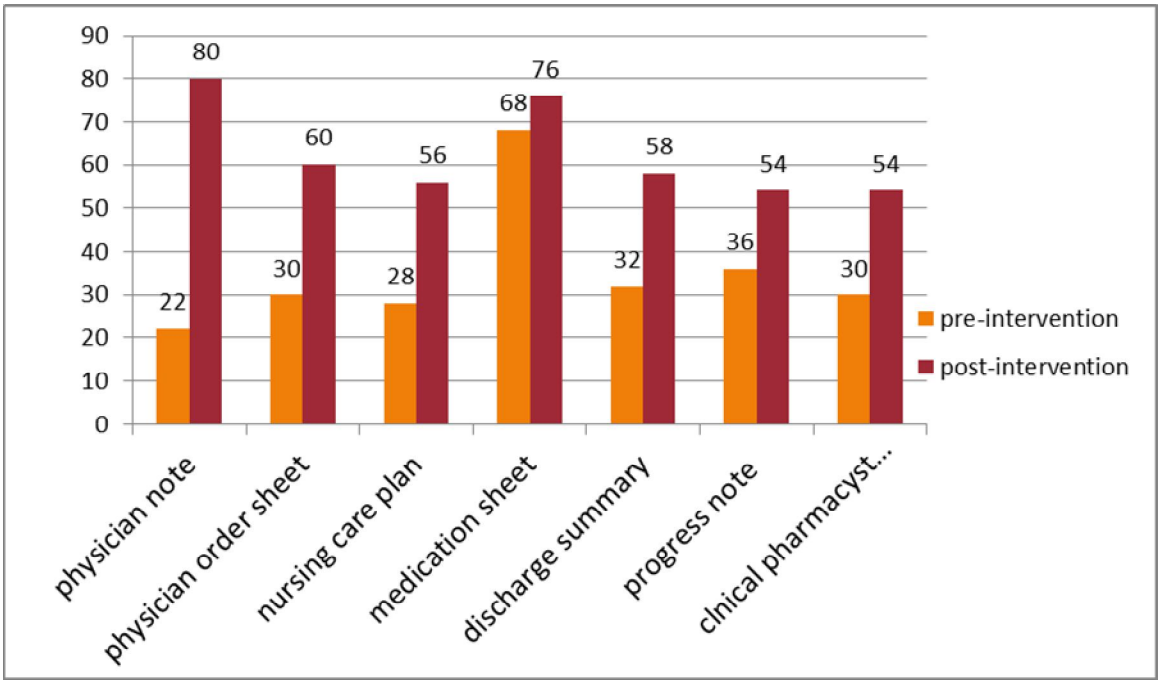

Figure 4: chart showing the achievement in specific indicators during pre-post intervention in medical records completeness in Karat primary hospital, SNNPR, June, 2018.

Table 4: showing Pre and post intervention percentage changes in medical records completeness in in-patient department of KHP, KonsoWoreda, SNNPR, Ethiopia, June, 2018.

S.N	Indicators	Pre-intervention	Post-intervention	% change
1	Physician note	22%	80%	58%
2	Physician order sheet	30%	60%	30%
3	Nursing care plan	28%	56%	28%
4	Medication sheet	68%	76%	8%
5	Discharge summary	32%	58%	26%
6	Progress note	36%	54%	18%
7	Clinical pharmacist record	30%	54%	24%
	Average	35.14%	62.57%	27.43%

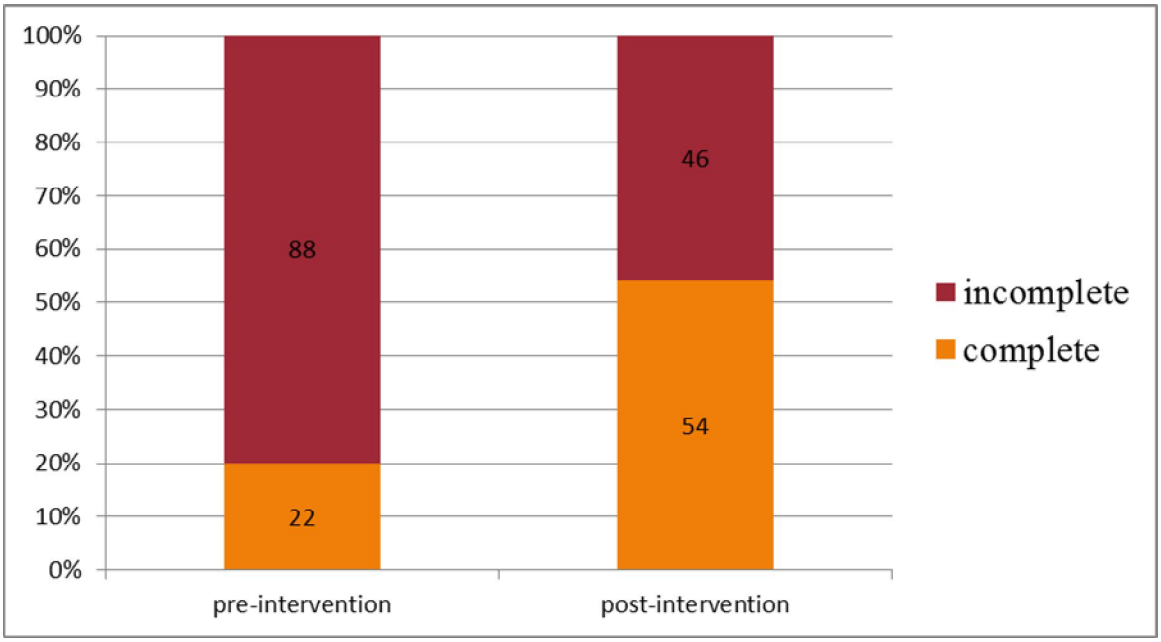

Figure 5: showing Overall status of medical record completeness at base line and after intervention in in-patient department of Karat primary hospital, KonsoWoreda, SNNPR, Ethiopia, June, 2018

In terms of responsibilities of staffs to standard formats physician note, progress note, physician or health officer order sheet and discharge summary were completed by physicians and medication administration sheet and nursing care plan were completed by nurses and clinical pharmacist record form was completed by clinical pharmacist.

9.4. Indicators

9.4.1. Process indicators

These are indicators that show input, activities and output. No of formats availed, development of guide line and procedure and no of trained staffs were the selected process indicators for this project.

9.4.2. Outcome indicators

These are indicators which indicate the immediate result of an intervention or project. The overall percent score of completeness of inpatient medical records 20% pre-intervention to 54% post-intervention was the outcome indicator of this project.

CHAPTER TEN: DISCUSSION

Our project designed interventions like training (on EHSTG, HPMI and Nursing care standard), incorporation of activity in BSC and development of guide line and come up with the result that could improve hospital performance in -patient management and system operations whereas the projects done so far includes intervention such as training for In-patient Healthcare Worker (Physician and Nurse) in which awareness and sensitization creation on the importance of medical records, Medical record as part of hospital reform and Medical record as part of hospital key performance indicator for quality of care and availing medical record format. The others were standardization of medical record forms and supervision.

We found in this study that the inpatient physician note completed for 80%,nursing care plan was completed for 56%, discharge sheet was completed for 58% and order sheet completed for 60%in Karat primary hospital that was low compared to two studies done one in Menlik II referral hospital with completeness of specific indicator physician note completed for 92.8%,nursing care plan completed for 76.6%, discharge summary completed for 93.8% and order sheet completed for 96.4% except medication sheet completed for 76.6% and 70.3% in karat primary hospital and Menilik II referral hospital respectively and two the study done in Dalefage hospital (Afar region) showed that physician note completed for 98%,nursing care plan completed for 92%,discharge summary completed for 74% and order sheet completed for 84% higher than karat primary hospital except medication sheet completed for 76.6% and 20% in karat primary hospital and Dalefage hospital respectively. This is because Menilik II hospital is General hospital and old hospital that has enough budget and skillful manpower and Dalefage is similar to our hospital but shortage of time in our study brought low achievement.

We also found in our study that after intervention the change observed in overall medical record completeness rose from base line 22% to 54% post-intervention whereas in study done in rural part of Ethiopia General hospital showed that overall completeness rose from base line 6.5% to 45.7% post-intervention with p-value of less than 0.01 and low compared to our study. The same study showed that medication administration incompleteness reduced from 89% to 33% with p-value 0.03 which is higher compared to our study in which it was reduced from 32% to 23.4% and order sheet incompleteness reduced from 89% to 66.7% with p-value of 0.34 lower

compared to our study in which it was reduced from 70% to 40%.Even if the study was in general hospital, the result was somewhat close to our study due to poor intervention that is only awareness creation.

The study conducted in England showed that medication history was incomplete for 26% and medication administration sheet was incomplete for 29.7% which was below Karat primary hospital that is 54% and 80% respectively. This study support the study done in United States that showed adverse events occurs as result of medication error each year in 2.9% to 3.7% of hospitals. This was as the result of negligence both clinical pharmacist and nurses.

The study creates opportunity for our staffs to gain knowledge, develop skills and helped the hospital for over all human resource development. Sustainable and regular completing and reporting and updating were very crucial to achieve the target point of the project.

CHAPTER ELEVEN: STRENGTH AND LIMITATIONS

11.1. Strength

The study added new approach or intervention that was incorporation of activity in BSC which is part of business processing re-engineering and was not taken as proposed intervention in studies done so far and come up with a result that could improve the health status of community and clients in particular within short period of time from Feb, 2018 to June, 2018 for Five consecutive Months.

12.2. Limitation

The study come up with the result of a single hospital that in some circumstance hinders the generalizability to similar settings (more research needed) and longer follow-up is required to assess the sustainability of the hospital improvements accomplished.

CHAPTER TWELEVE: CONCLUSION AND RECOMMENDATIO N

12.1. Conclusion

Our results indicated that applying problem solving (PSDA cycle) and quality improvement techniques to re-engineer the medical record completeness system can be effective and efficient in improving patient information management in hospitals in developing countries like ours despite the lack of resources and come up with the results that indicated significant improvement in accessibility and completeness in the medical records system despite the shortage of time. The full support from hospital leadership, hospital staff s and other partners is the key to success in addition to training, incorporation of activity in to BSC and development of facility based guide line and procedure to improve the medical record completeness.

12.2. Recommendation

From our study, we can recommend the following points:

Federal Ministry of Health/regional Health bureau

- Check the implementation of training whether it was according to the national or regional training protocol or not
- Regular supportive supervisions on medical record system on quarterly base and provide oral and written feedback as necessary on medical record completeness in particular and all other KPIs in general

Karat primary hospital / senior management team

- Other factors contributing to cause for medical record completeness must be studied.
- Organize trainings on medical record completeness
- Full implementation and proper management should be strengthened and the full support from hospital leadership is the key to success.
- Provide uninterrupted supplies for medical record completeness
- Nurse and physician accountability to implement the medical record should be developed
- Assign health personnel to medical record completeness as an ambassador
- Uphold internal supportive supervision which is aim based

Departments/Case Teams

- Make sure health care provider have adequate understanding of medical record completeness and start practicing it in a routine base
- Incorporate medical completeness in BSC and put higher score for it
- Timely request the supplies for medical record completeness

Health Care providers

- A systematic approach (Such as PDSA Cycle) should be approached
- Do and document medical record completeness routinely
- Fully practice what they gained in training and experience and work to the medical record completeness

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ANNEXES

Annex -1. Standardized Check list for inpatient medical record completeness

Medical Record Review Form		
MRN_____ Ward_____		
Date patient discharged from hospital:		
Section	Yes	No
1. Patient Card (Physician Notes): - Is this present? - Are all entries dated and signed?		
2. Physician/Health officer Order sheet: -Is this present? - Are all entries dated and signed?		
3. Nursing Care Plan: - Is this present? - Are all entries dated and signed?		
4. Medication Administration Record: - Is this present? - Are all entries dated and signed?		
5. Discharge summary: - Is this present? - Are all entries dated and signed?		
6. Progress note: - Is this present? - Are all entries dated and signed?		
7. Clinical pharmacist record form: Is this present? - Are all entries dated and signed?		
Total number of ``Yes`` and ``No`` Checks		
MR reviewed by _____ Signature_____ Review date_____	MR cross checked by _____ Signature_____ Review date_____	

Annex 2. Hospital progress note

Name of patient_____ ward_____ MRN_____ Bed No_____	
Date and time	**Progress note/patient card**

Annex 3. Physician or Health officer order sheet

Name of client_____ ward_____ MRN_____ Bed No_____					
Date	time	Order	Physician Sign	Transcriber's Sign(if relevant)	Date and time order completed

Annex 4.History and physical examination assessment/Patient card

History and physical examination assessment				
Name of client_____ Ward _____ MRN_____ Bed No_____ Date of admission _____				
Presenting Complaint:				
History of Presenting Complaint:				
Past Medical History:				
Drug History:				
Family history				
Personal/Social history				
PHYSICAL EXAMINATION				
General Appearance:				
Vital Signs:	Temp	Bp	Pulse	Respiration
HEENTS				
Glands				
Chest				
CVS				
Abdomen				

Genito –urinary
Musculo-skeletal
Skin
CNS
Motor
Sensory
Impression
DDx
PLAN OF ACTION (investigations, treatments and medication ordered)**:**
Name of physician_____ Signature _____ Time of assessment_____ Date _____

Annex: 5.Medication administration record

Name of client _____ward_____ Age _____

MRN_____ Bed No_____ Sex_____

Diagnosis_____ Allergy_____

Date	Name of drug & Dose	Time	route	Freq.	Given By	Sign

Annex 6.Hospital Discharge Summary Sheet

Name of client_____ward_____ MRN_____ _____Bed No_____ **date of admision_____date of discharge_____**
Hospital Course:
Diagnosis/Diagnoses:
Diagnostic procedures and laboratory findings:
Condition on discharge: **Cured_____ Improved_____ No change _____Worse Left against medical advice_____**
Instructions for home: **Diet:** **Activity:** **Specific care needs:** **Sick leave recommended (if relevant):**
Medications: **Drug: Dosage: Frequency:** **1.** **2.** **3.** **4.**
Follow up care: **Appointment date: Place: To be seen by:** **1.** **2.**
Form completed by:
Designation/Position:
Signature:
Date:
One copy of form should be given to the patient or caregiver and a second copy should be filed in the patient's Medical record

Annex 7. Patients Nursing Care Plan Documentation

Please complete or Affix label [all attached pages]

Name of hospital_____

Client name _____ father name _____

Address:-city_____ sub city_____kebele _____

MRN_____ House No_____

Personal Details

Age_____ sex_____ marital status _____religion_____

Nationality _____ethnicgroup_____language_____

Occupation (previous &current)_____

Patient support

1. Name_____	2.Name _____
Relation ship	Relation ship
Address :-Tel No:_____ City _____ sub city_____ Kebele _____ house No_____	Address :-Tel No:_____ City _____ sub city_____ Kebele _____ house No_____

Health perception /management

Patient's understanding of reason for admission_____

Significant other understanding of reason for admission_____

Understanding of medication (what ,how & why)client is taking before admission (including " over count" and known allergies)		
Drug name	Dose	Frequency

Name of client_____ MRN_____ Ward_____

Role and Relation ships

Discharge arrangement and other social details

Lives alone? yes_____ No_____ comments ----------

Employee? yes_____ No_____ comments----------

Self-employee? Yes_____ No_____ comments----------

Dependents? Yes_____ No _____ if no, please state who helps with how many times per week

Cooking_____ washing or Dressing_____ shopping_____

Cleaning_____ farming_____ house wife_____

Ability to for treatment…….

Patient assessment for activity of living

<u>1.cognitive and perceptual</u>

Level of consciousness

Reflexes (Eye, hand grasp and movement of extremities)

Sensorial(eye ,ear,nose,tongue and skin)

Pain

Cognition(primary language ,speech deficit and any LD)

Name of client_____ MRN_____ Ward_____

2.Activity and Exercise	
Breathing –respiratory pattern, lung sound ,cough, **oxygen supplement, respiratory tubes** **Circulation-peripheral pulse, cardiovascular check,** **chest pain, jugular ventilation, history murmur, pacemaker**	
3.nutrition and metabolism	**Assessment**
Special diet **Pattern of daily food** **Fluid intake** **Appetite** **Weight** **Nausea and vomiting** **GI pain** **Condition of mucous membrane** **Dental condition** **Skin (warm,dry,cold,moist)** **Turgor` and mobility** **Color (pink,pale,dark,jaundice,cyanosis)** **Edema** **Wound /drainage/dressing** **Iv line**	

Name of client _____ MRN_____ Ward_____	
4.elimination :.urination defecation	**Assessment**
Usual time of bowl movement **Any recent changes in elimination** **Any excess perspiration** **Bowl sound** **Abdominal tenderness** **Stoma (type)** **Any brut** **Use anything to manage bowls (laxative, enema,suppositories,home remedies ,etc.** **Urinary pattern (frequency,charcter,amount,incontinence,retention,nocturia,etc)**	
5.psychological care	
Copying with stress: **Response to stress** **Relaxation** **Support groups/counseling resource**	
6.spiritual /dying **Values and beliefs** **Cultural practice(yes or no)** **Religious practice (yes or no)** **Familial traditions(yes or no)** **Would you like your religious leader to be contacted (yes or no)**	

name of client_____ MRN_____ Ward_____

7.sleeping

Sleep/rest pattern : **Adequacy of sleep(yes or no)** **Difficulty of sleep (yes or no)** **Factors affecting sleep or rest…….** **Methods to promote sleep…….**	
8.Sexuality and reproductive	
female : **menopause(yes or no)** **menstrual pattern** **date of LMP** **Use of contraceptives(type)** **monthly self-breast examination** **vaginal bleeding/bedding/lesion** **Male:** **monthly testicular examination** **prostate problem** **penile discharge**	

Summary of subjective and objective data

name of client _____ MRN_____ Ward_____	
subjective data	objective data

Name of accepting or receiving nurse……

Designation……

Signature…….

Date……..

Time……..

NURSING PROBLEM INDEX LIST

name of client_____ MRN_____

ward_____ Bed no_____

date identified and time	No	problem	signature &designation	date resolved & time	signature &designation

NURSING INTERVENTION

Name of client_____ MRN_____

Ward_____ Bed no_____

date &Time	problem No	nursing outcome or goal	intervention/action	signature &designation

NURSING PROGRESS NOTE REPORT

Name of client_____ MRN_____

Ward_____ Bed no_____

date &time	problem No	patient progress report/evaluation	review date &time	signature &designation

Annex-8 Clinical Pharmacist record form

SOPs for the provision of Clinical Pharmacy services in Ethiopia

Form 1: Inpatient Medication profile form

(Follow instructions when completing this form)

Name of hospital -karat primary hospital Region-SNNPR

1. Patient information

Name_____ MRN_____ Age_____ sex_____

Date of admission _____ ward _____Bed No_____

Diagnosis _____

Wt._____ height_____ BSA _____ pregnancy status _____

2. Past medical and medication history

2.1. past medical history

2.2. past medication history

Medication history and adherence: ADRs and /or allergies

Immunization status

3. Current medications

Indications	Drug &dosage regimen name, dosage form, dose, frequency	start date	stop date

4. Pharmacist's assessment and care plan

Assessment	identified drug therapy problem	recommendation	level of recommendation acceptance

5. Recommendations/Interventions

6. Discharge medication and counseling

Form 2: pharmaceutical care progress note recording sheet

Name of patient_____ MRN_____ Bed No ----------

Annex: 9

KARAT PRIMARY HOSPITAL

INPATIENT MEDICAL RECORD COMPLETENESS GUIDELINE AND PROCEDURE

Section: Clinical protocol

Subject: Inpatient medical record

BY: SMT, head nurses and researcher

Date policy or protocol formulated: May 7, 2018

1. Inpatient Medical Record Management Protocol

Definition: Inpatient Medical Record is the official record of patient that contains information of admitted patients to general ward.

Importance: To collect and avail all important information related to admitted patients for the purpose of patient care, reporting, legal issue, surveillances, research …etc.

Content: The inpatient medical record folder minimally contains;

1. Order sheet

2. Nursing assessment and care plan formats

3. Progress note sheet

4. Medication administration sheet

5. Discharge summary sheet (ed. 2011) and other's progress note and clinical pharmacist record form (revised ed.2017) and

6. Other formats as necessary

ROLE OF PARTNERS

A. Nurse`s role

1. The inpatient Nurses attach the above listed and other formats as necessary for admitted patients.

2. Conduct Nursing assessment, diagnosis, plan, implement and evaluate accordingly.

3. Administer medication as prescribed, record information and attach medication administration information sheet to patient medical record upon patient discharge.

4. Give any relevant care for patients and record accordingly.

B. Doctor/Health Officer role

1. Complete order note on admission and round completely

2. Complete progress note after admission.

3. Complete discharge summary upon discharge.

4. Take history on patient card or physician note on admission and as needed

C. KPI-data owner role

1. Conduct survey report quarterly (minimum number of 50 cards and 5% cards as maximum).

2. Look for problem with client medical record completeness and give feedback to department.
3. Maintenance of the primary data source(s) for KPI information

4. Submitting the KPI to the KPI focal person

D. KPI focal person

- Collecting KPI data from every KPI data owner at the end of the reporting period
- Checking the accuracy of the KPI data, by reviewing data sources and conducting spot checks for accuracy on the data sources and the KPIs submitted by data owners
- Entering the KPI data into the electronic Hospital KPI Database
- Preparing the KPI report (including data elements and KPI results) from the KPI Database
- Submitting the KPI report to the hospital Quality Committee and CEO
- Training the KPI data owners, ensuring that each understands the meaning of the KPI, how to maintain the primary data source and calculate the KPI.
- Ensuring the availability of all required computer hardware and software, stationery and forms for the collation and submission of KPIs.

F. Roles of quality committee

- To co-ordinate all hospital performance improvement activities
- To receive clinical audit reports and maintain a record of all clinical audit activities
- To monitor KPI data
- To monitor HMIS performance

G. Medical record room staffs

- Insert necessary formats during client registration
- Check formats for presence when card returning from service

H. hospital management

- Do assessment internally every quarter
- support the activity by assigning budget
- award staffs with good performance

2. PROCEDURE FOR INPATIENT MEDICAL RECORD MANAGEMENT

Importance: in order to avail patient data (information) that is important for reporting, research and other purposes by registering accurate and real information about patient condition and care given by our hospital inpatient departments.

1. during admission

Enter all necessary formats for patient care like patient card, medication administration sheet, nursing assessment formats, order sheet, progress sheet, discharge summary sheet, clinical pharmacist record form and other format as necessary.

2. after admission

- ✓ **Fill formats through provision of patient care accordingly**

3. during discharge

- ***Fill discharge summary sheet***
- ***attach medication administration sheet to* the medical record of patient return medical record to medical record room**