

Improving the Quality of Inpatient Medical Records Documentation Using DMAIC Methodology

By

Manakkadan Nitin Gopi

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2016-2018



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TO WHOMSOEVER MAY CONCERN

This is to certify that Manakkadan Nitin Gopi student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at Thumbay Hospital from 11/03/2018 to 05/05/2018.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavors.



Col (Dr.) Ashok Kaushik (Retd)

Dean, Academics and Student Affairs

The IIHMR University, Jaipur



Dr. S. D. Gupta

Chairman

The IIHMR University, Jaipur



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May 05, 2018

To Whom It May Concern

This is to certify that **Dr. Nitin Gopi Manakkadan** holder of Indian Passport Number H4096457 was working in our institution as Management Trainee from 11th February 2018 till 5th May 2018, as a part of dissertation of his M.B.A - Hospital and Health Management program. He has completed the assigned project.

We wish him all the best.

For Thumbay Hospital, Fujairah

THUMBAY MOIDEEN

President

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **“Improving the Quality of Inpatient Medical records Documentation using DMAIC methodology”** and submitted by **Dr. Manakkadan Nitin Gopi**, Enrollment number-**440** under the supervision of **Dr. S. D. Gupta (Chairman)** for award of **MBA Hospital and Health Management** of the university carried out during the period from **11th February 2018 till 5th May 2018** embodies my original work and has not formed the basis of the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institute of higher learning.

A handwritten signature in blue ink, appearing to read "Mg. Nitin", written over a horizontal line.

Signature

Abstract:

Improving the Quality of Inpatient Medical records Documentation using DMAIC Methodology

The improvement in quality of inpatient medical record documentation is essential as it plays a vital role in sustaining the acquired accreditation from JCI, as the JCI surveyors pay a special attention on analysing the documentation pattern being followed by the staffs, it's also important when it comes to the matter of complete, legible documentation, also in avoiding legal involvement of hospital and staffs etc. This study elucidate the application of a five-phase Six Sigma define, measure, analyse, improve, and control (DMAIC) approach to improve the quality of documentation of inpatient medical records errors. The objective of this study to improve the quality of inpatient medical record documentation in THFUJ. The hospital has an activated EMR system for OPD but for inpatient the activation still have time which is the basic reason that the quality of documentation is on priority.

Method:

A stratified random sample of 183 inpatient medical records taken to analyse the quality of documentation by clinical and non-clinical staffs, followed by set of forms in medical records and parameters in each form as a checklist owing to analyse documentation error. In the context of the five phases, the tools which have been applied to make decisions are:

- Root cause analysis by fish bone analysis
- Cause-and-Effect Matrices

Result:

On the basis of collected data based on the parameter in each form of medical records compliance percentage of staffs is calculated to rule out the loop holes in documentation in achieving 100% compliance.

Conclusion:

For improvement recommendations suggested which can be used in the implementation phase to collect baseline data after the recommendations are adopted to improve the discharge process.

Acknowledgements:

This report is a part of dissertation completed at Thumbay hospital Fujairah, UAE. This report is based on the study that I have conducted on Improving the Quality of inpatient medical records using DMAIC methodology.

Firstly, I would like to express my indebtedness appreciation to Medical Director Dr. Osama Mahmoud Rizkforhis constant guidance and advice played the vital role in making the execution of the report. He always gave me his suggestions that were crucial in making this report as flawless as possible. He has involved me in the quality assurance process which provided me a great insight of the work process that goes through in department.

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I convey my sincere gratitude towards Dr.Manvir Singh, Director of Quality assurance Thumbay Healthcare, for providing me opportunity to participate and learn a Quality personals responsibilities while JCI survey was about to begin till the end of JCI survey, I am thankful for his modern outlook and meticulous supervision to carry out the job perfectly.

I am grateful to my mentor Mr.HimanshuMaitra Assistant Manager Quality Assurance Department for his insight into the qualities and responsibilities of a hospital administrator and introduced me to the world of international healthcare.He helped me understand it is very important to keep in mind what i have studied in books but it is much more important to learn on the floor, accept responsibility and to be aware of your surroundings.

I would like to thank Dr.SaleemJohar, who helped me to understand the true meaning of data driven measures for quality improvement.

I would like to thank my friends Mahesh Singh, PriyaGokhle who helped and supported throughout the session of dissertation.

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Manakkadan Nitin Gopi

Thumbay hospital Fujairah, UAE

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List of Abbreviations

DMAIC	Define, measure, analyze, improve & control
JCI	Joint commission international
PAD	Patients affairs department
MRD	Medical record department
ICN	Infection control nurse
ICD	Infection control doctor
IP	Inpatient
MENA	Middle east and north Africa
NABH	National accreditation board for hospitals & healthcare
HAAD	Health authority- Abu Dhabi
HR	Human resource
GP	General physician
THFUJ	Thumbay hospital Fujairah
KOV	Key output variables
KOI	Key input variables
C & E	Cause & effect
OBG	Obstetrics & gynecology
ENT	Ear, nose, Throat
PAC	Pre-anesthetic care
LAMA	Leave against medical advice

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DISSERTATION REPORT

1. Chapter-1: Background Of Study

1.1. Introduction

The Medical Record is an orderly written report of the patient's history, physical, laboratory findings, treatment and hospital course and when completed contains sufficient data to justify the diagnosis and treatment and to record the results of the care rendered. The record is valuable to the patient, hospital, doctors, research and education, public health agencies, responsible organization for healthcare claims and play a vital role when it comes to maintaining the received accreditation. They are a written collection of information about patients health care and essential for his or her present and future care. Information contained in medical records is also used for the management and planning of health care facilities and services; for medical research and the production of health care statistics. Doctors, Nurses and the other health care professionals write in medical records so that they can use the information again when the patient returns to the hospital.

In general, poor documentation is defined as that which is lacking clarity, specificity, or completeness, and is of overall poor quality. Documentation that fails to concisely convey a patient's problem and the logic used to address that problem risks patient safety and obfuscates any effort to estimate the quality of the rendered care, "Failing to estimate the quality of the rendered care makes estimating the care value impossible, given value is defined as the quotient of care outcomes and care cost." In essence, poor documentation is anything that inhibits a clear presentation of a patient's story.

1.2. Aims

- 1.2.1. To understand the working culture of the International hospital and to get adapt to the working environment.
- 1.2.2. To analyse the gaps/errors in documentation of medical records and to give suggestions based on policies and standards.

1.2.3. To assist in compliance for quality assurance with regards to JCI standards.

1.3. Objective

The objective of the project was to define, measure & analyse the quality of medical records by application of a five-phase Six Sigma tool. My primary goal during my internship at Thumbay hospital Fujairah was to rectify and to follow a process to make correct the errors/deficiencies/mistakes which usually all clinical and non-clinical staff do while documenting the medical records, as medical records plays a vital role for a hospital in sustaining its accreditation and it has been a great learning experience.

2. Chapter-2: Literature Review

2.1 Catherine M Pirkle (2012) says quality of Medical record comprises both the charting and the archiving of medical information, is essential to evaluating, ensuring and improving the quality of health care. When documentation of medical record is adequately performed, it improves the coordination and continuity of care, reinforces decision-making capacities, augments staff accountability and achieves more accurate vital statistics. 12

2.2 According to Benyamin Mohseni Saravi (2016) Medical records are the important tools to perform the process of treatment and prevention and are known as the reflecting mirror of the medical affairs in an institute/hospital. The registered data in medical record sheets influences their application in accelerating the process and correcting treatment and medical and nursing staff performances, defending the patients and hospitals, medical/health organization planning and making proper and fundamental decisions, the clinical records are necessary to be perfect from any aspect. Documentation of medical records is often used to protect the researches, train medical care staff, general studies and qualitative studies. 13

2.3 Medical records documentation and dissemination of information, which are used as the foundation of the programming and decision making management in education, research and health, are the most valuable criteria of hospital staff professional assessment. If patients' identity data are not complete, the sheets may be mistakes with each other. Incomplete registration of data in a medical record will lead to duplication of the tests and undergoing further expenses for patients and so on (Thomas J. et al Indian J Urol. 2009).14

2.4 According to Carlos M Soto, Kenneth P Kleinman, and Steven R Simon (2002) Quality of documentation may also reflect the quality of care delivered, although recent studies have suggested that medical record documentation in the outpatient setting tends to underestimate the actual performance of preventive health care services and other indicators of quality care. Electronic medical record (EMR) systems may improve the quality of care delivered as well as the documentation of that care in the outpatient setting. Determining the correlates of quality medical record documentation could thus lead to educational programs and other interventions to improve documentation.5

2.5 According to Juliann Schaeffer (2016) before tackling a documentation problems, health care organizations must elucidate whether indeed there is a problem in the first place. Determining the specifics of what constitutes poor documentation is the first step. Documentation quality depends on who is using a particular health record—and for what means. For physicians, documentation that impairs patient evaluation and/or treatment would receive poor marks. For a coder, "poor documentation would be defined as documentation that lacks the sufficient specificity to assign accurate diagnosis and procedure codes. In general, poor documentation is defined as that which is lacking clarity, specificity, or completeness, and is of overall poor quality. Documentation that fails to concisely convey a patient's problem and the logic used to address that problem risks patient safety and obfuscates any effort to estimate the quality of the rendered care, "Failing to estimate the quality of the rendered care makes estimating the care value impossible, given value is defined as the quotient of care outcomes and care cost." In essence, poor documentation is anything that inhibits a clear presentation of a patient's story, Combs says. "For instance, if a provider is documenting congestive heart failure, he or she will need to include the acuity and type of congestive heart failure to ensure the highest level of specificity," she says. "Instead of just documenting congestive heart failure, which is unspecified, he or she could document acute on chronic systolic congestive heart failure, which would take the diagnosis to the highest level of specificity. All other notes should reflect care and treatment to support the acute on chronic systolic congestive heart failure." While that may seem like a minor issue of semantics to those outside—and even some inside—the health care system, its potential ramifications are real and significant. "The ramifications of poor documentation are endless. 15

2.6 Six Sigma and Healthcare

Six Sigma continues to be of interest in the corporate world. In the field of health care, Six Sigma has been used to address numerous problems including decreasing length of stay, reducing medication errors, and improving the admissions process (Castle et al. 2005; Christianson et al. 2005). In general, Six Sigma is credited with an ability to manage and improve complicated processes. Even though, a review of the literature did not discover anything

regarding improving the quality of medical records by utilizing the Six Sigma methodology.

Since Six Sigma programs strive to reduce variability and defects within processes, implementing a breakthrough strategy is a logical solution for improving patient care. These defects in patient care processes can run the spectrum from minor dietary issues to patient morbidity and fatality. Harry and Schroeder define six sigma methods as disciplined methods of using extremely rigorous data gathering and statistical analysis to pinpoint sources of errors and ways of eliminating them'. Long describes healthcare industry measures of operating in a higher sigma level environment (i.e. lower defect rate) as: patient satisfaction, physician satisfaction, reduced overtime, reduced patient wait times, increased revenues, and enhanced quality of life.¹

2.7 An Introduction of DMAIC Methodology

The six sigma process of Define, Measure, Analyse, Implement and Control (DMAIC) is a data driven process and each step in the cyclical DMAIC Process is required to ensure the best possible results. The six sigma approach consists of the five step DMAIC approach. Each step of this process is can be explained as follows:

2.7.1 Define: Problem selection and benefit analysis

2.7.1.1 Identify and map relevant processes.

2.7.1.2 Identify stakeholders.

2.7.1.3 Determine and prioritize customer needs and requirements.

2.7.2 Measure: Translation of the problem into a measurable form, and measurement of the current situation

2.7.2.1 Determine operational definitions for the problem selected.

2.7.2.2 Validate measurement systems

2.7.2.3 Assess the current process capability.

2.7.2.4 Define objectives

2.7.3 Analyse: Identification of influence factors and causes that address the problems

2.7.3.1 Identify potential influence factors.

2.7.3.2 Select the vital few influence factors.

2.7.4 Improve: Design and implementation of adjustments to the process to improve the performance

2.7.4.1 Quantify relationships between output and input variables.

2.7.4.2 Design actions to modify the process or settings of influence factors in such a way that the input variables are optimized.

2.7.4.3 Start collecting baseline data from improvement actions.

2.7.5 Control: Empirical verification of the project's results and adjustment of the process and to ensure the improvements are sustainable

2.7.5.1 Determine the new process capability.

2.7.5.2 Implement control plans.

3. CHAPTER-3: Methodology

3.1. Study design and methods:

- 3.1.1. Type of study:** Retrospective study, using DMAIC six sigma over a period of twomonths for the medical records.
- 3.1.2. Location of study:** Thumbay Hospital Fujairah, UAE.
- 3.1.3. Study subjects:** Medical records of the In-patients who were admitted at Thumbay Hospital Fujairah, UAE. .
- 3.1.4. Sample size:** A sample size of 183 of the total 367 inpatient medical records for January 2018 till February 2018 will be determined at 95% confidence interval and 5% margin of error.
- 3.1.5. Sampling method:** Stratified random sampling.
- 3.1.6. Data (information) to be collected:** Inpatient medical records.
- 3.1.7. Data collection tools:** Medical Record Audit Checklist, Hospital Information Management System of Thumbay Hospital Fujairah, Root cause analysis (fish bone analysis), Cause and Effect Matrix and Microsoft Excel.

3.2. Ethical considerations:

While reviewing the patient records the names of the patients, pharmacy details, diagnosis and plan of treatments will not be recorded. The consent of the management was taken before collecting the data by signing a non-disclosure agreement pertaining to medical records by signing confidentiality form with the human resource of Thumbay Hospital Fujairah.

4. CHAPTER 4: Analysis And Result

4.1. After understanding the required standards to be followed in the medical record documentation by the clinical and non-clinical staff and after auditing the set of estimated (183) medical records comprised of forms in which parameters are considered (appendix), compliance percentage is calculated for staff separately. In medical record documentation is done on a specific set of forms, names of which are being mentioned as follows.

4.1.1. Forms which are documented by physicians

- 4.1.1.1.** Pre-admission form
- 4.1.1.2.** Discharge authorization form
- 4.1.1.3.** Admission discharge record
- 4.1.1.4.** In house transfer form
- 4.1.1.5.** Initial assessment form (SURGERY, OBG, endoscopy, pediatrics, cardiology, medicine, ophthalmology, ENT, orthopedics)
- 4.1.1.6.** Doctors progress notes
- 4.1.1.7.** Physician order sheet
- 4.1.1.8.** General orders
- 4.1.1.9.** Medication order sheet
- 4.1.1.10.** IV fluid orders
- 4.1.1.11.** Medical Reconciliation form
- 4.1.1.12.** Integrated care plan
- 4.1.1.13.** Consent form for surgery/special procedure/informed consent form
- 4.1.1.14.** Pre-anesthesia /sedation evaluation/PAC FORM
- 4.1.1.15.** Anesthesia record
- 4.1.1.16.** Surgical safety checklist
- 4.1.1.17.** Operation notes
- 4.1.1.18.** Recovery notes
- 4.1.1.19.** Discharge summary
- 4.1.1.20.** Discharge planning risk assessment-
- 4.1.1.21.** LAMA

4.1.2. Forms which are documented/taken care by nurses

- 4.1.2.1. MRD Checklist**
- 4.1.2.2. Admission discharge record**
- 4.1.2.3. In house transfer form**
- 4.1.2.4. Patient orientation checklist**
- 4.1.2.5. Initial assessment form(SURGERY,OBG, endoscopy, pediatrics, cardiology, medicine, ophthalmology, ENT, orthopedics)**
- 4.1.2.6. Doctors progress notes**
- 4.1.2.7. Physician order sheet**
- 4.1.2.8. General orders**
- 4.1.2.9. Medication order sheet**
- 4.1.2.10. IV fluid orders**
- 4.1.2.11. Medical Reconciliation form**
- 4.1.2.12. Integrated care plan**
- 4.1.2.13. Patient identification checklist**
- 4.1.2.14. Consent form for surgery/special procedure/informed consent form**
- 4.1.2.15. Pre-operative preparation checklist**
- 4.1.2.16. Pre-anesthesia /sedation evaluation/PAC FORM**
- 4.1.2.17. Anesthesia record**
- 4.1.2.18. Surgical safety checklist**
- 4.1.2.19. Operation notes**
- 4.1.2.20. Recovery notes**
- 4.1.2.21. Nurses observation chart**
- 4.1.2.22. Intake output record**
- 4.1.2.23. Nurses progress notes**
- 4.1.2.24. Nursing handover sheet**
- 4.1.2.25. Nursing adult/pediatric initial assessment form**
- 4.1.2.26. Discharge checklist**
- 4.1.2.27. Discharge planning risk assessment**

4.1.3. Forms which are documented by PAD

4.1.3.1. Pre-admission form

4.1.3.2. Admission authorization form

4.1.3.3. Discharge authorization form

4.1.4. Forms which are documented by MRD

4.1.4.1. MRD Checklist

4.1.5. Forms which are documented by Pharmacist

4.1.5.1. Medication order sheet

4.1.5.2. Medical Reconciliation form

4.1.6. Forms which are documented by Dietician

4.1.6.1. Integrated care plan

4.1.7. Forms which are documented by ICN

4.1.7.1. Isolationprecaution form

4.1.8. Forms which are documented by ICD

4.1.8.1. Isolation precaution form

4.1.9. In different forms the documentation is done by staffs (clinical and non- clinical) individually as well as in combination according to their assigned set of space.

4.1.10. In every form parameters (Appendix) are decided on the basis of importance of sections to be documented based on policies and standards of THFUJ. For example – In admission – discharge record to be documented by physician, the parameters considered were-

4.1.10.1. Final diagnosis

4.1.10.2. Discharge status

4.1.10.3. Signature,seal,Date & time

4.1.10.4. Full form of abbreviations

4.1.10.5. approved abbreviation

4.1.10.6. eligible handwriting

4.1.10.7. Over-writing with error mark and sign

4.1.10.8. operations/ procedure

4.1.10.9. provisional diagnosis

4.1.11. So, on the basis of documentation errors in each form which is calculated according to the considered parameters, the compliance percentage is ruled out and on the basis of it graphs are being depicted here for each form for better understanding the gaps present in the medical record documentation which is estimated according to the policies followed by THFUJ based on standards set by (JCI) which is 100% compliance.

4.2. Implementation Of Six Sigma For The Process For Maintaining The Quality Of Medical Record Documentation

This study was carried out in the medical record department and quality assurance department of Thumbay Hospital Fujairah

4.2.1. Define Phase

4.2.1.1. The study was carried out at Thumbay hospital Fujairah UAE. This teaching hospital has a bed capacity of 60 beds.

4.2.1.2. The key stakeholders for the study was both clinical and non-clinical staffs in Thumbay hospital Fujairah.

4.2.1.3. The primary goal of this study was to improve the quality of the documentation of the inpatient medical record.

4.2.1.4. Another goal was to improve the stakeholder's knowledge towards documentation of their respective section according to the standards and policies.

4.2.1.5. Last goal was to improve the compliance of the completeness of the inpatient medical records for the better outcomes.

4.2.1.6. The key output variables of the study was reducing/improving the documentation error in inpatient medical records, which was identified from the medical record department.

4.2.1.7. The target unit, Thumbay hospital Fujairah inpatient departments.

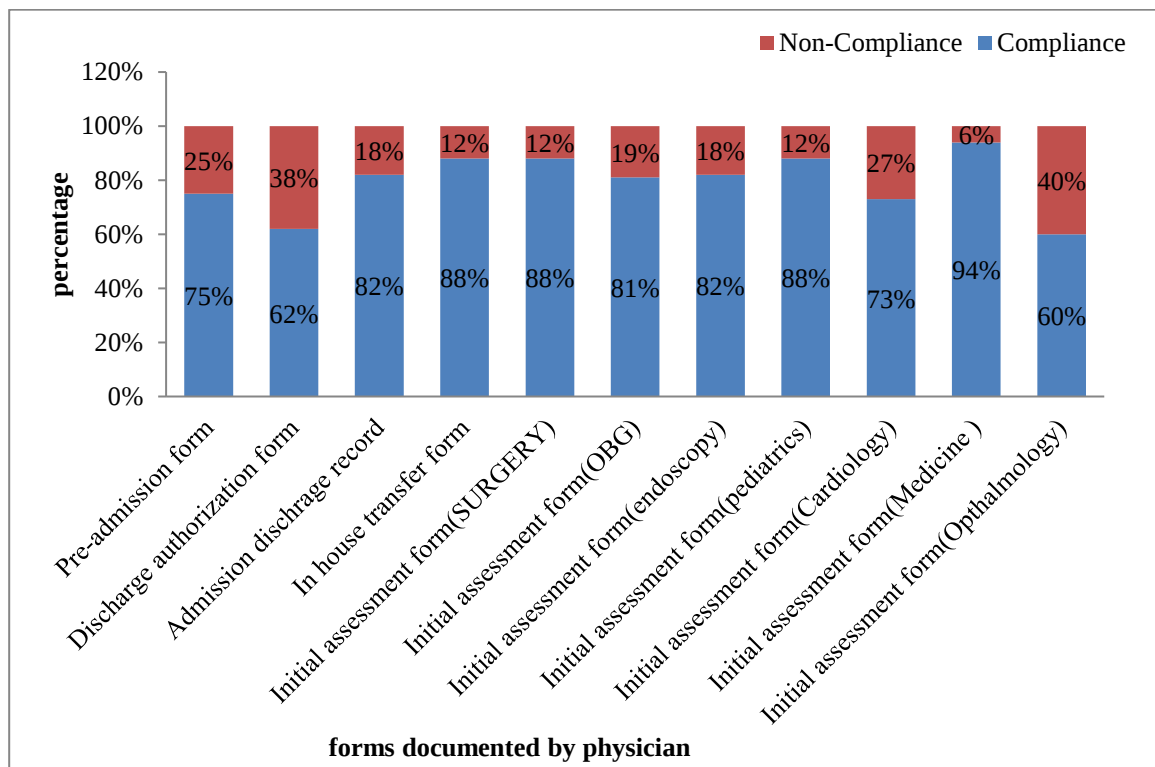
4.2.2. Measure Phase

- 4.2.2.1. The first step was data collection plan, for which random inpatient medical records of different departments was acquired from medical records department.
- 4.2.2.2. The next step in this phase was to identify the process being followed while documenting each form (in medical records) of inpatient departments by calculating the compliance percentage of the medical records.
- 4.2.2.3. The data was gathered on the basis of auditing inpatient medical records (based on considered parameters in forms- {Appendix}) from January 2018 till February 2018 which provided an exposure regarding the present status of the medical record documentation by clinical and non-clinical staffs, being depicted in table below
- 4.2.2.4. An average 367 of the total number inpatient records (i.e) 183 was taken, determined at 95% confidence interval and 5% margin of error.
- 4.2.2.5. The gathered data was compared according to the standards/policies of the Joint commission international to rule out the loop holes.

PHYSICIAN		
Name of form	Non-compliance	Compliance
Pre-admission form	25%	75%
Discharge authorization form	38%	62%
Admission discharge record	18%	82%
In house transfer form	12%	88%
Initial assessment form(SURGERY)	12%	88%
Initial assessment form(OBG)	19%	81%

Initial assessment form(endoscopy)	18%	82%
Initial assessment form(pediatrics)	12%	88%
Initial assessment form(Cardiology)	27%	73%
Initial assessment form(Medicine)	6%	94%
Initial assessment form(Ophthalmology)	40%	60%

Table showing the compliance percentage of set of forms documented by physician



Graphical representation showing compliance of physician related forms

Pre-admission form ,n=183

Discharge authorization form ,n=174

Admission discharge record, n=44

In-house transfer form, n=183

Initial assessment form(surgery), n=20

Initial assessment form(OBG),n=30

Initial assessment form(endoscopy), n=20

Initial assessment form (paediatrics), n=20

Initial assessment form(cardiology),n=20

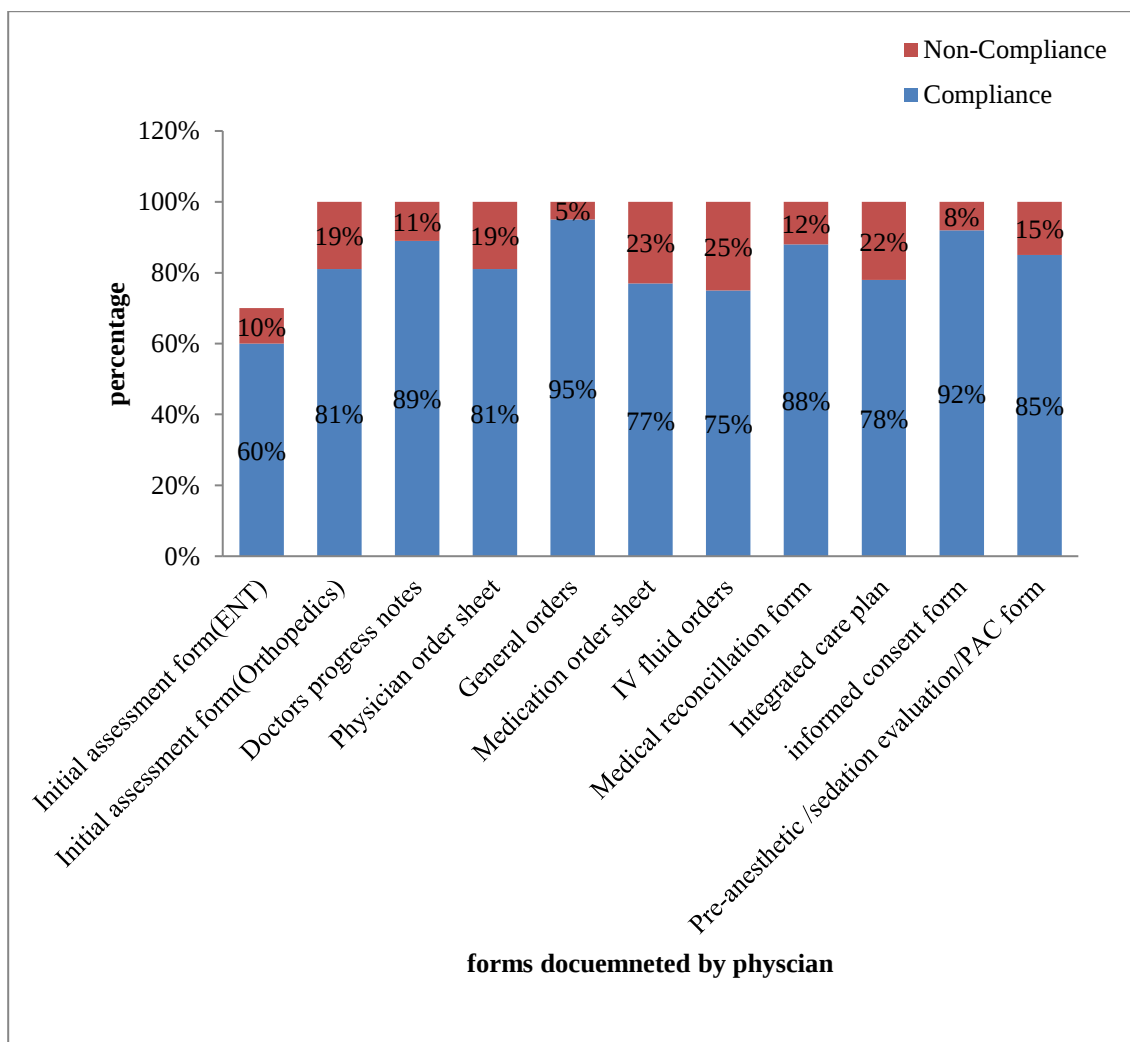
Initial assessment form(medicine), n=40

Initial assessment form(opthalmology), n=10

Name of form	Non-compliance	Compliance
Initial assessment form(ENT)	10%	90%
Initial assessment form(Orthopedics)	19%	81%
Doctors progress notes	11%	89%
Physician order sheet	19%	81%
General orders	5%	95%
Medication order sheet	23%	77%
i.v fluid orders	25%	75%
Medical Reconciliation form	12%	88%
Integrated care plan	22%	78%

Consent form for surgery/special procedure/informed consent form	8%	92%
Pre-anesthesia /sedation evaluation/PAC FORM	15%	85%

Table showing the compliance percentage of set of forms documented by physician



Graphical representation showing compliance of physician related forms

Initial assessment form(ENT), n=20

Initial assessment form(orthopedics), n=13

Doctors progress notes, n=183

Physician orders sheet, n=183

General orders, n=183

Medication order sheet, n= 183

IV fluid orders, n= 183

Medical reconciliation form, n=183

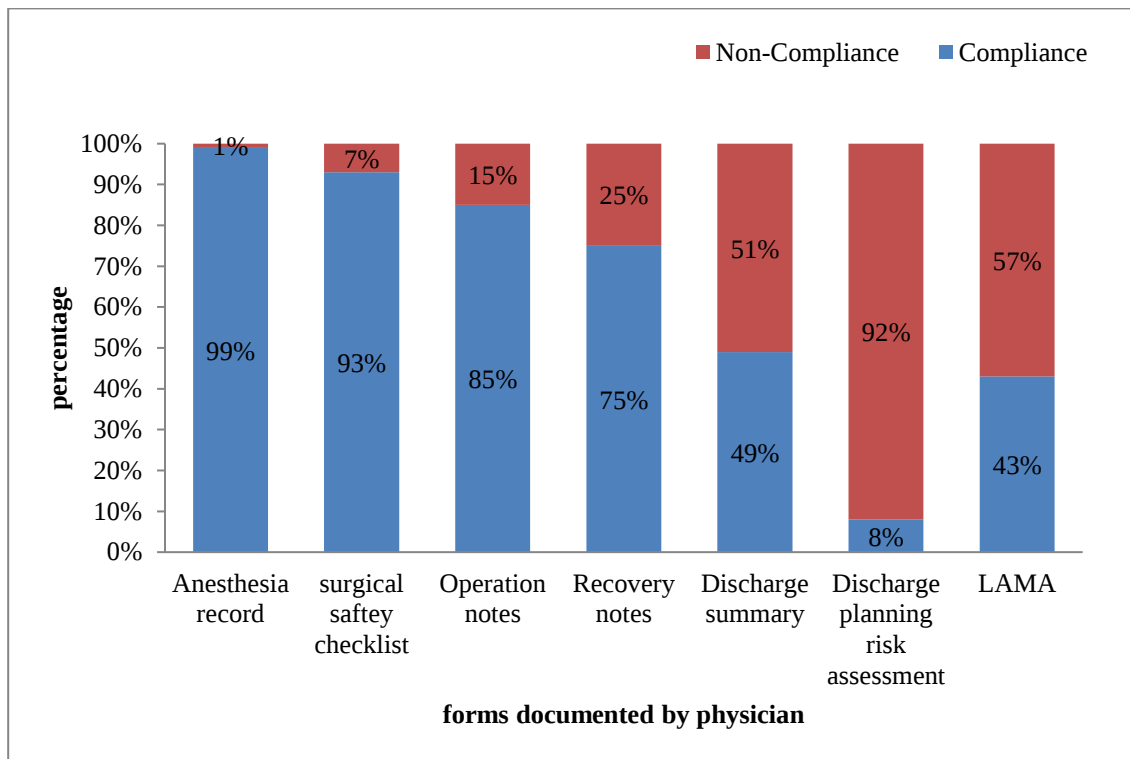
Integrated care plan, n =183

Informed consent form, n =183

Pre-anesthetic/sedation/PAC form, n=70

Name of form	Non-compliance	Compliance
Anesthesia record	1%	99%
Surgical safety checklist	7%	93%
Operation notes	15%	85%
Recovery notes	25%	75%
Discharge summary	51%	49%
Discharge planning risk assessment-	92%	8%
LAMA	57%	43%

Table showing the compliance percentage of set of forms documented by physician



Graphical representation showing compliance of physician related forms

Anaesthesia record, n=111

Surgical safety checklist, n=69

Operation notes, n=75

Recovery notes, n=75

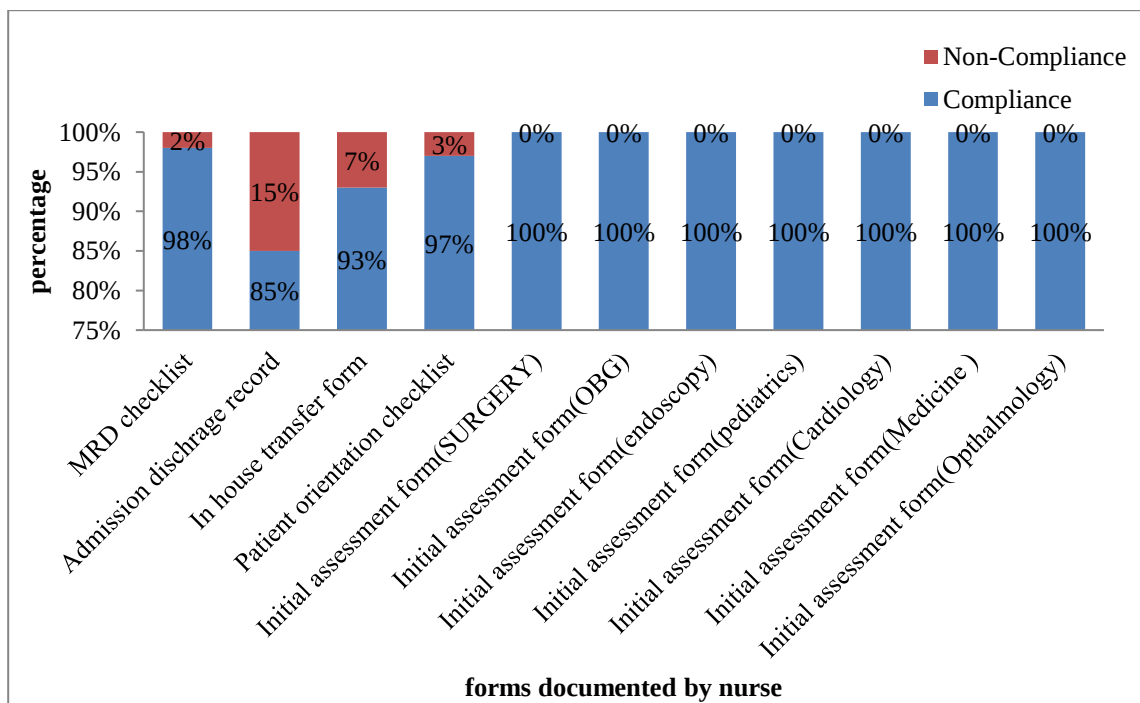
Discharge summary, n=183

Discharge planning risk assessment, n=183

LAMA, n=21

NURSES		
Name of form	Non-compliance	Compliance
MRD Checklist	2%	98%
Admission discharge record	15%	85%
In house transfer form	7%	93%
Patient orientation checklist	3%	97%
Initial assessment form(SURGERY)	0%	100%
Initial assessment form(OBG)	0%	100%
Initial assessment form(endoscopy)	0%	100%
Initial assessment form(pediatrics)	0%	100%
Initial assessment form(Cardiology)	0%	100%
Initial assessment form(Medicine)	0%	100%
Initial assessment form(Ophthalmology)	0%	100%

Table showing the compliance percentage of set of forms documented by nurse



Graphical representation showing compliance of nursing related forms

MRD checklist ,n=183

Admission discharge record, n=44

In-house transfer form, n=183

Patient orientation checklist, n= 183

Initial assessment form(surgery), n=20

Initial assessment form(OBG),n=30

Initial assessment form(endoscopy), n=20

Initial assessment form (paediatrics), n=20

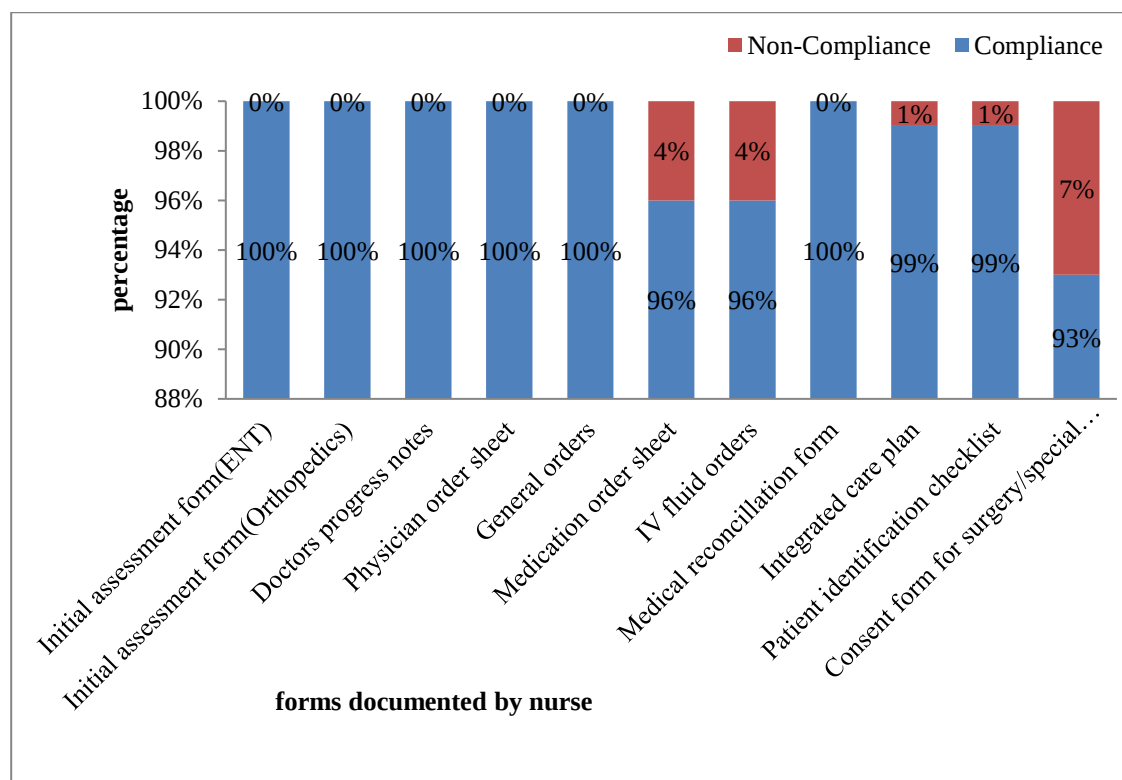
Initial assessment form(cardiology),n=20

Initial assessment form(medicine), n=40

Initial assessment form(opthalmology), n=10

Name of form	Non-compliance	Compliance
Initial assessment form(ENT)	0%	100%
Initial assessment form(Orthopedics)	0%	100%
Doctors progress notes	0%	100%
Physician order sheet	0%	100%
General orders	0%	100%
Medication order sheet	4%	96%
i.v fluid orders	4%	96%
Medical Reconciliation form	0%	100%
Integrated care plan	1%	99%
patient identification checklist	1%	99%
Consent form for surgery/special procedure/informed consent form	7%	93%

Table showing the compliance percentage of set of forms documented by nurse



Graphical representation showing compliance of nursing related forms

Initial assessment form(ENT), n=20

Initial assessment form(orthopedics), n=13

Doctors progress notes, n=183

Physician orders sheet, n=183

General orders, n=183

Medication order sheet, n= 183

IV fluid orders, n= 183

Medical reconciliation form, n=183

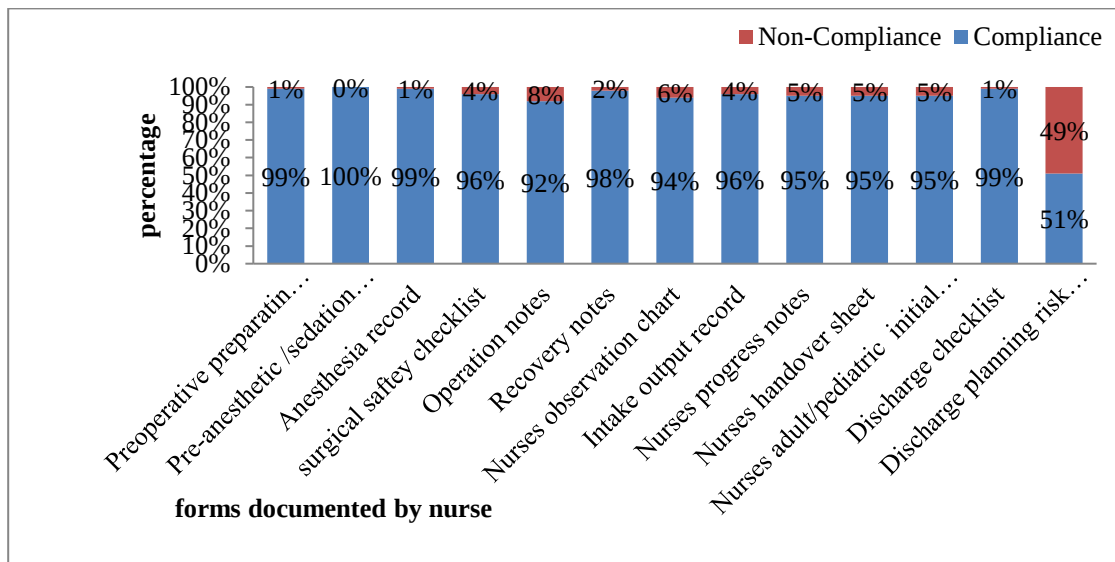
Integrated care plan, n =183

Patient identification checklist, n=183

Pre-anesthetic/sedation/PAC form, n=70

Name of form	Non-compliance	Compliance
pre operative preparation checklist	1%	99%
Pre-anesthesia /sedation evaluation/PAC FORM	0%	100%
Anesthesia record	1%	99%
Surgical safety checklist	4%	96%
Operation notes	8%	92%
Recovery notes	2%	98%
Nurses observation chart	6%	94%
Intake output record	4%	96%
nurses progress notes	5%	95%
Nursing handover sheet	5%	95%
Nursing adult/pediatric initial assessment form	5%	95%
Discharge checklist	1%	99%
Discharge planning risk assessment-	51%	49%

Table showing the compliance percentage of set of forms documented by nurse



Graphical representation showing compliance of nursing related forms

Preoperative preparation checklist, n=70

Pre-anesthetic /sedation evaluation, n= 70

Anaesthesia record, n=111

Surgical safety checklist, n=69

Operation notes, n=75

Recovery notes, n=75

Nurses observation chart, n=181

Intake output record, n=135

Nurses progress notes, n=183

Discharge summary, n=183

Nurses handover sheet, n=183

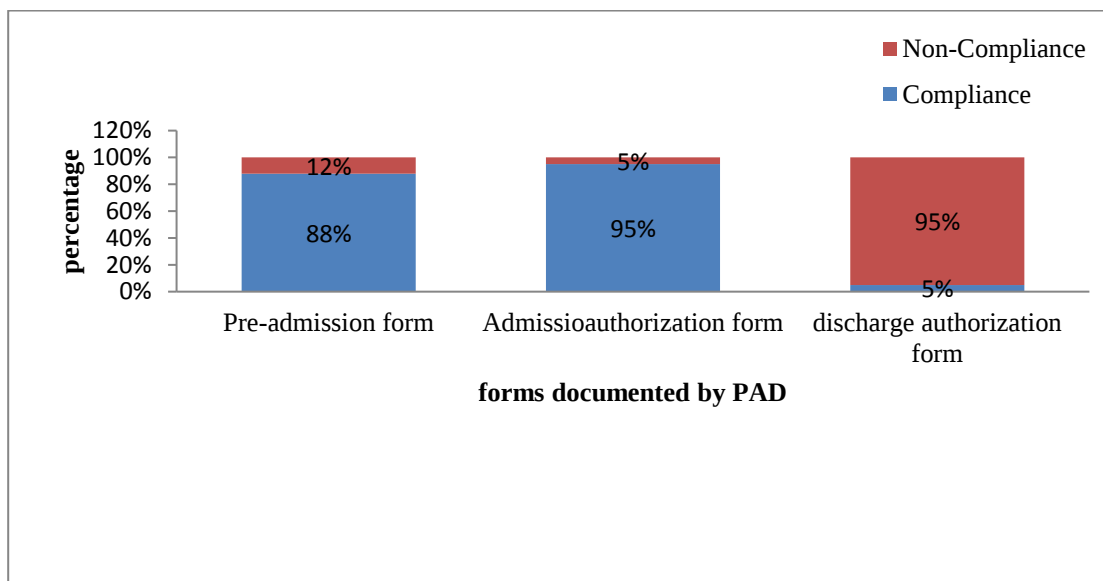
Nurses pediatrics/adult initial assessment form, n=183

Discharge planning risk assessment, n=183

Discharge checklist, n=183

PAD		
Name of form	Non-compliance	Compliance
Pre-admission form	12%	88%
Admission authorization form	5%	95%
Discharge authorization form	95%	5%

Table showing the compliance percentage of set of forms documented by PAD



Graphical representation showing compliance of PAD related forms

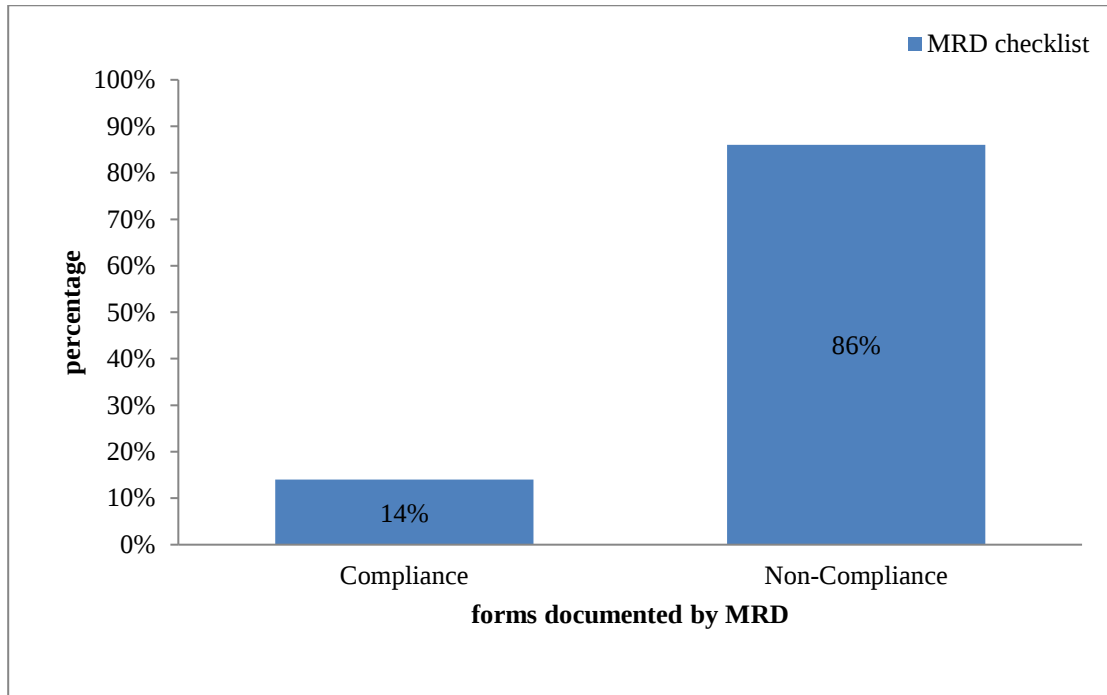
Pre-admission form, n=183

Admission-authorization form, n=183

Discharge authorization form, n= 174

MRD		
Name of form	Non-compliance	Compliance
MRD Checklist	86%	14%

Table showing the compliance percentage of set of forms documented by MRD

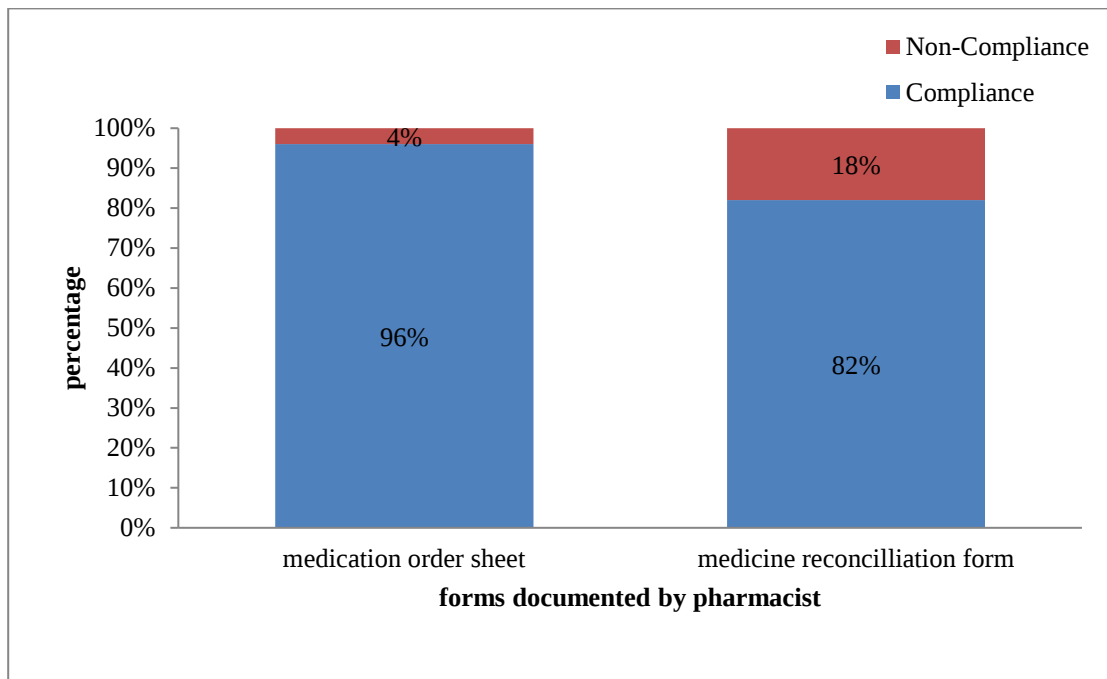


Graphical representation showing compliance of MRD related forms

MRD checklist, n=183

PHARMACIST		
Name of form	Non-compliance	Compliance
Medication order sheet	4%	96%
Medical Reconciliation form	18%	82%

Table showing the compliance percentage of set of forms documented by pharmacist



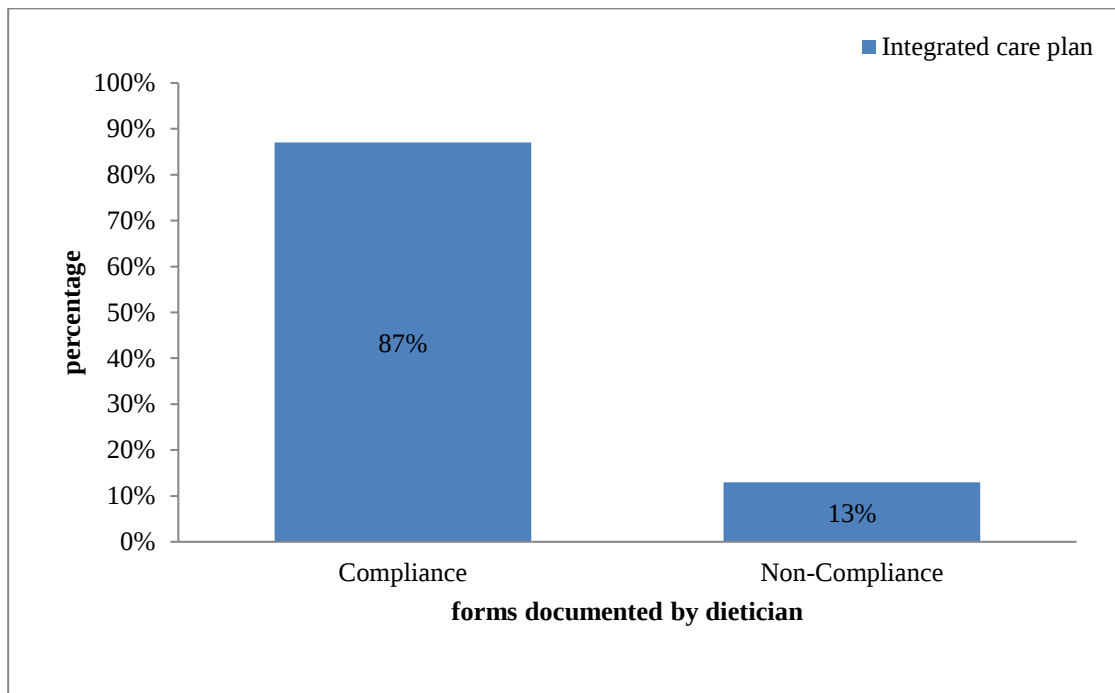
Graphical representation showing compliance of nursing related forms Pharmacist

Medication order sheet, n=183

Medicine reconciliation form, n=183

DIETICIAN		
Name of form	Non-compliance	Compliance
Integrated care plan	13%	87%

Table showing the compliance percentage of set of forms documented by distician

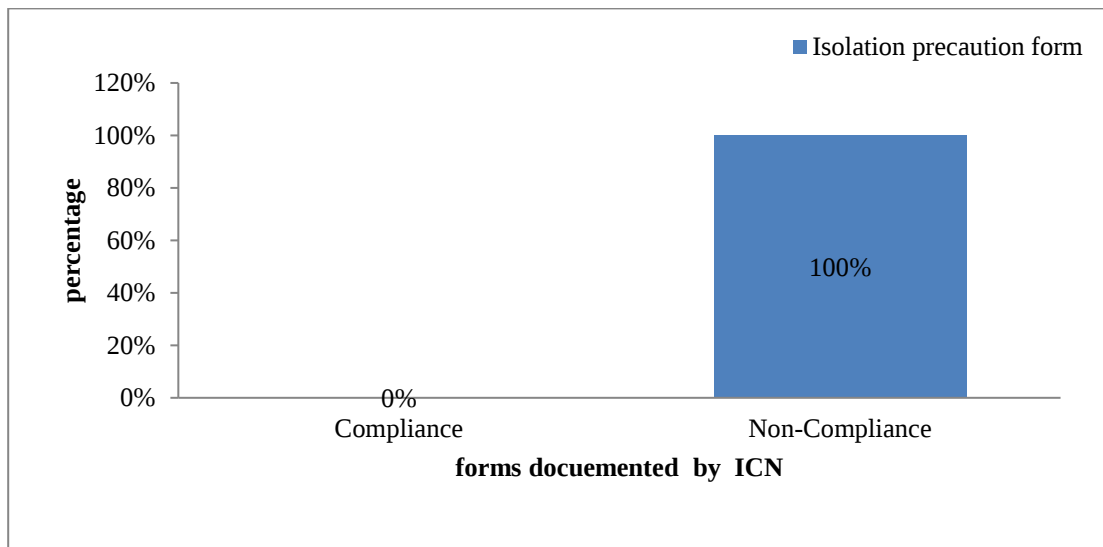


Graphical representation showing compliance of nursing related forms Dietician

Integrated care plan, n=183

ICN		
Name of form	Non-compliance	Compliance
islocation precaution form	100%	0%

Table showing the compliance percentage of set of forms documented by ICN

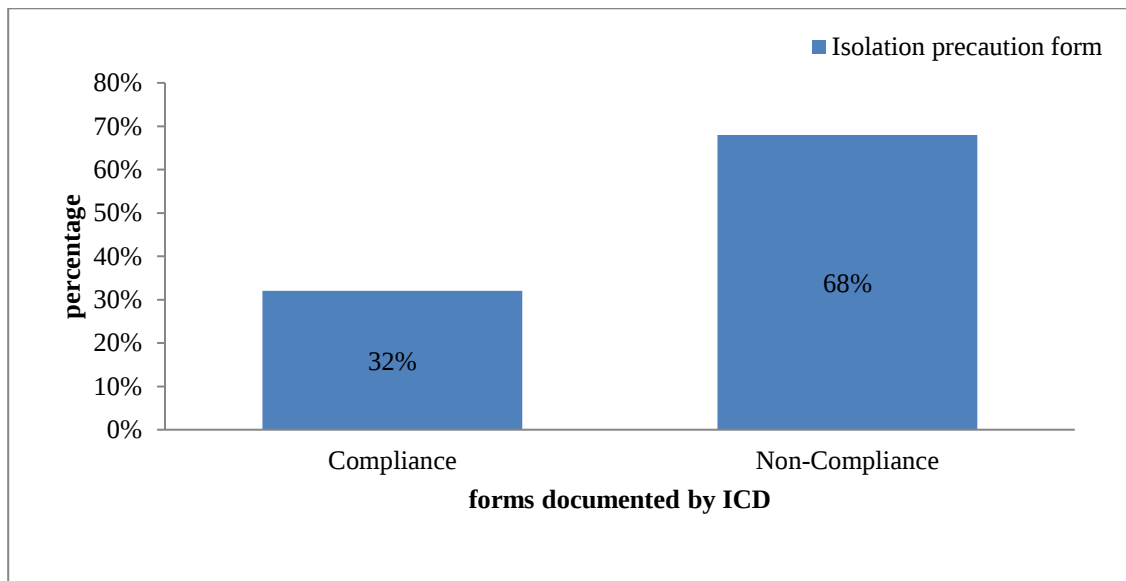


Graphical representation showing compliance of nursing related forms ICN

Isolation precaution form, n=22

ICD		
Name of form	Non-compliance	Compliance
isolation precaution form	68%	32%

Table showing the compliance percentage of set of forms documented by ICD

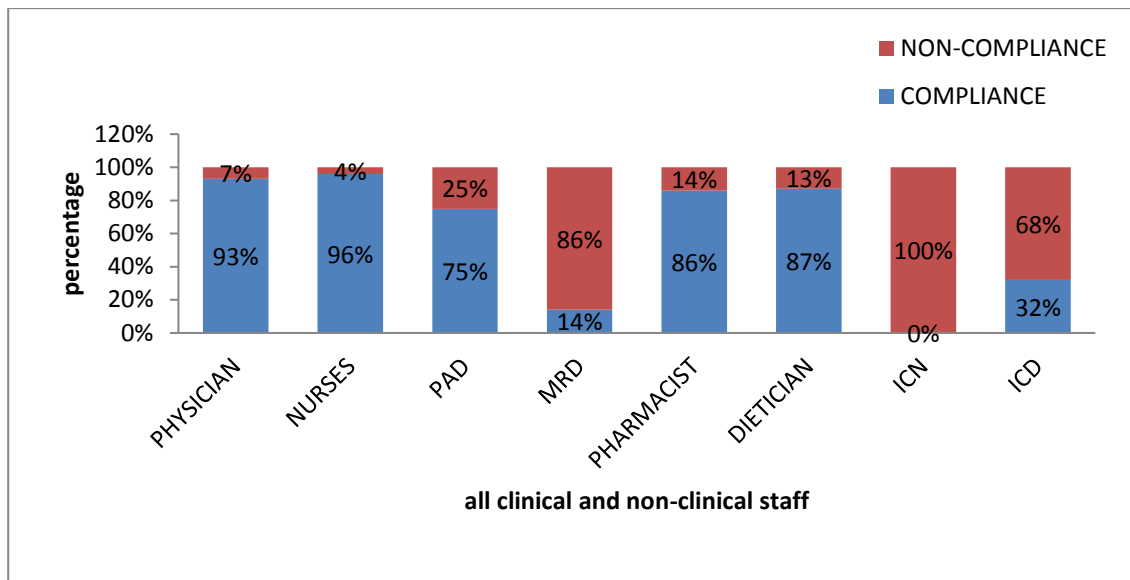


Graphical representation showing compliance of nursing related forms ICD

Isolation precaution form, n=22

	PHYSICIAN	NURSES	PAD	MRD	PHARMACIST	DIETICIAN	ICN	ICD
COMPLIANCE	93%	96%	75%	14%	86%	87%	0%	32%
NON-COMPLIANCE	7%	4%	25%	86%	14%	13%	100%	68%

Table Showing the total compliance of inpatient medical record documentation by all the clinical and non-clinical staff involved in the process.



Graphical representation of the total compliance percentage of documentation based on parameters by (clinical and non-clinical staffs)

4.2.3. Analyze Phase

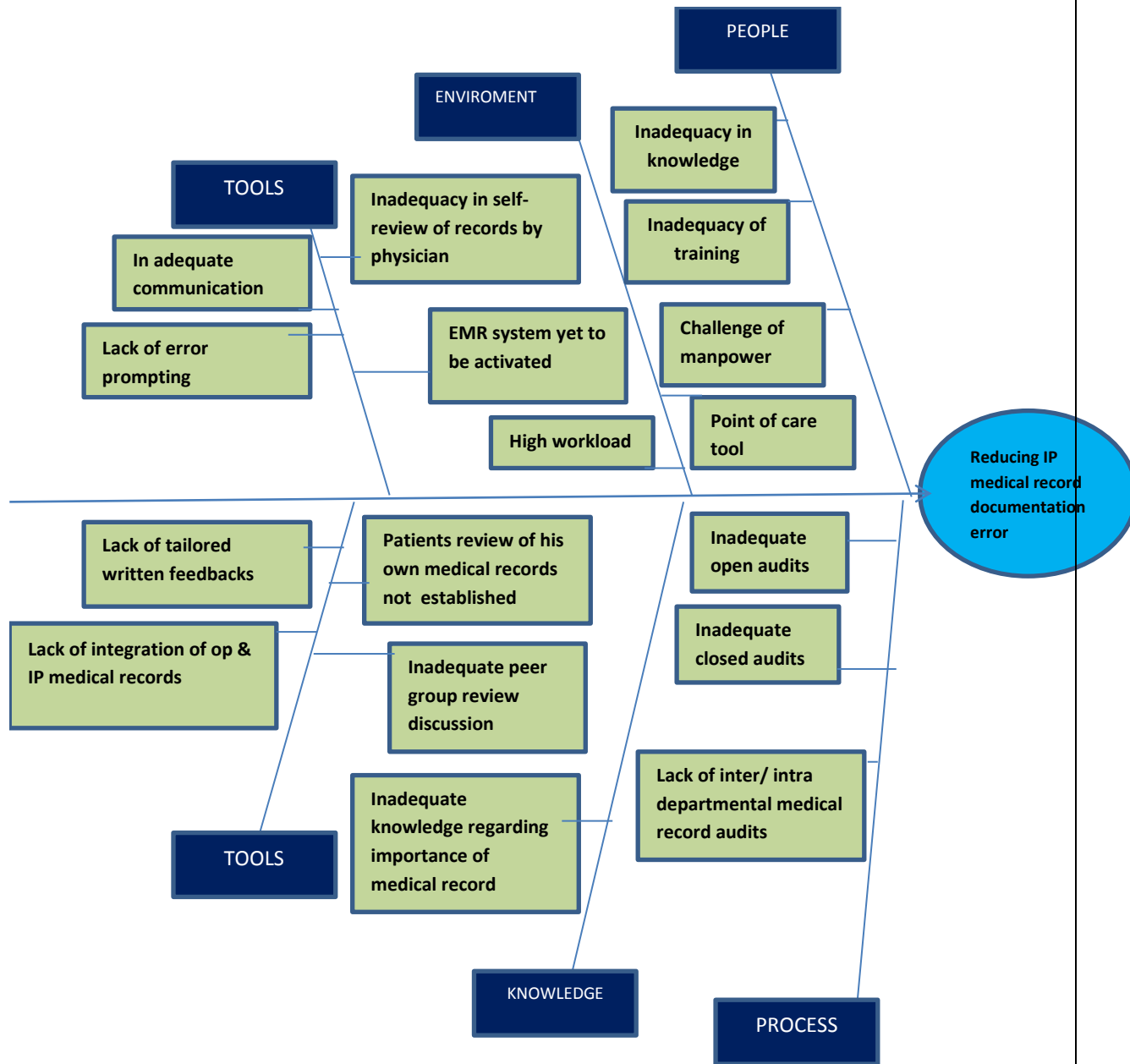
- 4.2.3.1.** Identified the gaps (i.e.) the errors/deficiencies/findings in the inpatient medical record documentation of its current performance in with comparison with the goal performance.
- 4.2.3.2.** A brainstorming session was held with the clinical and non-clinical staff engaged in the documentation of medical records and a root cause analysis in form of (Fish bone analysis- Reducing the IP medical record documentation error was prepared).Figure-1
- 4.2.3.3.** In the define phase, the key output variables (KOVs) was identified as Reducing/improving the documentation error in inpatient medical records. Thus in the analyze phase developed a list of key input variables (KIVs) or found the number of solutions/initiatives on the basis of their effect with the “KOVs”. The “KIV” were selected on the basis of

how these variables can improve over all compliance of the “KOV”. Table-2

- 4.2.3.4. The “KIVs” was selected using a cause-and-effect matrix related to reducing the compliance percentage of documentation error in the inpatient medical record; the C&E matrix was selected as analysis method to open up possibilities for improving the quality of documentation of inpatient medical records.
- 4.2.3.5. A list of improvement measures was taken for improving the quality of documentation of inpatient medical records and on the basis of its importance the rating is done on scale of (1–10, were 10 being rated as highest importance to the improve documentation error). After identifying the initiatives or activities a list of possible changes or improvements to the issues were identified.)
- 4.2.3.6. In the next step correlations was established between the factors needed to improve the documentation error of inpatient medical records and the proposed change/initiatives were estimated.
- 4.2.3.7. If perceived that the changes had a high impact on the factors, a high correlation was assigned. For example, for Improving the knowledge of staffs (clinical & non-clinical) regarding documentation & its importance and it was concluded that Aggressive training /awareness /knowledge enhancing program for documentation will help cater to this improvement, a correlation of > 9 will be assigned.
- 4.2.3.8. On the other hand, if a change wouldn't affect an improvement, low correlations were estimated. For example, by Inclusion & improvement of patients/clinical/non-clinical staff in self-review of documentation still the overall improvement is not taking place. Therefore, a correlation of > 1 will be assigned.

Root Cause Analysis

Causes Of The Documentation Error In The Inpatient Medical Records



Fish bone analysis of reducing the IP medical record documentation error

	Rating On Basis Of Importance	10	6	7	5	4	3	8	9		
s.no		1	2	3	4	5	6	7	8		
	Process outputs (what we want to Improve)→	Improving the knowledge of staffs (clinical & non- Improving the shortage of	Improving technical	Improving inter/ intra departmental communication	Improving the feedback providing/receiving mechanism	Inclusion & improvement of patients/clinical/non-clinical	Timely corrections	Improving the auditing mechanism for documentation	Total	Impact/Implementation score	
s.no	↓Process inputs(initiatives or activities)										
1	Aggressive training /awareness /knowledge enhancing program for documentation	9	3	3	3	3	1	9	9	309	1
2	Open audits	9	0	0	1	9	3	9	9	293	2
3	Closed audits	9	0	0	1	9	3	9	9	293	2
4	Reducing work load (new GP etc.)	0	9	1	3	1	0	9	9	233	3
5	Peer group review(case discussions)	9	0	0	3	9	1	9	9	297	2
6	Enhancing IT infrastructure (EMR, Online portal, software's, point of care tools etc.)	9	9	3	9	9	9	9	9	426	1
7	Motivating to openness to discuss/suggestion	9	3	1	9	9	3	1	9	294	2

Table – Cause and effect matrix

Correlation rating:-

> 0 = the process input is not correlated to process output.

> 1 = the process input is remotely correlated to process output

> 3 = the process input is moderately correlated to process output

> 9 = the process input is direct and strongly correlated to process output

Implement	Impact	
	High	Low
Easy	1	2
Hard	3	4

1= Top priority, immediate attention

2= Complete when convenient

3= Long term objective, need to keep it persistently active

4= Low priority, shelve until all other options are completed

4.2.4. Gap analysis of the process:-

To access the areas of improvement of the quality of inpatient medical records documentation, gap analysis is done.

The following points were considered as gaps for documentation error, which are the following-

- 4.2.4.1.** Inadequacy of knowledge / awareness of staffs (clinical & non-clinical) regarding documentation & its vital connection with legal aspects.
- 4.2.4.2.** Inaggressive training sessions and inability to maintain the previously held training session's persistently.
- 4.2.4.3.** Challenges to overcome manpower which is leading to workload.

- 4.2.4.4. Infrequent open, closed and tracer audits by quality team which is also acting as a contributing factor in negligence / ignorance from staff in documentation.
- 4.2.4.5. Inattentiveness by staff & lack of responsibility.
- 4.2.4.6. Timely corrections of audited medical records not done by the responsible staff.
- 4.2.4.7. Inadequacy of inter & intra departmental review of medical record documentation.
- 4.2.4.8. Inadequacy of communication patterns between staffs, for correcting the error when rectified one to another.
- 4.2.4.9. There is no EMR system being activated so far for the documentation of inpatient medical records also there is no error prompting mechanism followed technically.
- 4.2.4.10. There is no online portal so far where the patient could review his own medical records and also there is no self-review mechanism of medical records done by physicians & other staffs as well.
- 4.2.4.11. Rewards and recognition program for best medical record documentation.

4.2.5. Improve Phase

- 4.2.5.1. In the improve phase, the results of the analyze phase were used to make tentative changes in design. These recommendations were then piloted, confirmed, and institutionalized in the control phase.
- 4.2.5.2. For example if the clinical staffs were not documenting what is being required then aggressive trainings identified to be conducted by emphasizing on the needs and importance of its documentation factors.
- 4.2.5.3. Manpower increase by appointing GP was considered to solve problem for legible documentation in condition of workload, review of medical records done by senior physicians, preparing discharge summaries for timely dispatch with patient.

- 4.2.5.4.** The same way frequent open and closed audits was identified as step taken on a frequent basis as well as tracer audits which will empower the medical staff to understand its importance.
- 4.2.5.5.** The same way auditing committee should be established with experts who audit time to time comprising of quality staffs and experienced doctors.
- 4.2.5.6.** Technological intervention by implementing EMR system was considered to improve documentation for inpatient medical records.
- 4.2.5.7.** Statistically significant evidence that the new system improved key output variables (KIVs) is not available until the control phase. However, during the implementation the immediate anecdotal feedback was positive.
- 4.2.5.8.** Due to the limitation of time baseline data for the control phase could not be a part of the study. The documentation of the same is in process and will be recorded.

5. CHAPTER 5 : Suggestions And Conclusions

Various suggestions and recommendations were suggested for improving the quality of inpatient medical records documentations using DMAIC methodology, which are following:-

5.1. On the perspective of Staff-

- 5.1.1.** Vigorous training sessions focused on (Individual and grouped sessions on documentation)
- 5.1.2.** Tracer audits (to explain and rectify the documentation mistakes done by staff on spot/on the heat of moment when documentation is going on).
- 5.1.3.** Self-review of medical records by staffs (junior nurses should complete the documentation of patient's record whom they are attending and the same shall be reviewed by the nursing in charge) before sending it to MRD.
- 5.1.4.** If in MRD and quality closed audits its found that the medical record still have errors, responsible staff along with nursing in charge of respective department shall be called and discussed, if still the problem persist than on weekly meetings the errors shall be discussed in presence of nursing superintendent /medical director.
- 5.1.5.** Peer group discussions inter / intra department on medical records documentation involving Head of departments, experienced doctors, nursing superintendent, MRD staff and quality department staffs.
- 5.1.6.** For physicians whose documentation was full of errors and not legible, weekly meetings with medical director to discuss the cause and effect of it should be conducted with strictness and prompt analysis of improved performance in coming week shall be done to maintain sustainability in performance .
- 5.1.7.** Recruiting new staffs to decrease the workload so that prompt documentation could be done.
- 5.1.8.** Conducting timely suggestions competition to improve the medical record documentation error shall be done, as this way the staffs will feel enthusiasm to be a part of process in improvement and this way we can

get an overview of their understanding towards medical record documentation and new ideas can be discussed and implemented, accordingly training sessions can be improvised.

5.1.9. A new system should be introduced where the staffs (clinical and non-clinical) should maintain a record of the hospital number of cases along with the count of errors(names) which happened by them (which will come in front by self-review/ rechecking) & this case files along with the maintained records will be reviewed by quality team to analyze the improvements happening because of self-review.

5.2. On the perspective of Documentation-

5.2.1. Frequent Open inpatient medical record audits

5.2.2. Frequent Closed inpatient medical record audits

5.2.3. Trial runs of records (Inter / intra departmental inpatient medical record audits by staffs interchangeably)

5.2.4. EMR system implementation for inpatient medical records

5.2.5. Online portals where patient/relatives could review their own medical records during stay and could question based on their understanding and knowledge.

5.2.6. Timely corrections after quality audits.

5.2.7. Using bright colored stickers having a arrow mark in it or stickers used for denoting high risk and high alert medication in crash cart shall be sticked in essentially important sections where documentation is necessary and after documentation these stickers could be removed.

5.2.8. Placing the sticker so that they are not obscured by other objects or documents.

5.2.9. Changing the color of forms which is essentially needed to be documented in any condition, like admission and discharge record have colored format.

5.2.10. For physicians, for example- wherever it is mandatory to put sign seal date and time those sections border color could be changes as an indication.

5.2.11. Rewards and recognition program for better quality documentation

5.2.12. Empowering IT infrastructure to operate various tools for error prompting mechanism, for example- point of care tool, online portals for patients & staffs.

5.2.13. Tailored feedback monthly on documentation by auditing committee (shall be done with experts who audit time to time comprising of quality staffs and experienced doctors.)

5.3. Conclusion:-

Documentation errors is one of the important factor to be considered when it comes on improving the quality of inpatient medical records, as it impacts directly on the efficiency to sustain the acquired accreditations, coordination and continuity of care, reinforces decision-making capacities, augments staff accountability and in achieving more accurate vital statistics. The quality of inpatient medical record documentation is considered important to be in the setting of JCI, NABH and HAAD, according to its policies and guidelines., it is also important when it comes to compare the benchmarks of our hospital with benchmark set by other hospitals accredited by JCI in and around the world in terms of medical records documentation. Each provider must meet a maximum of 100% compliance with medical record documentation guidelines.

Hence improving the quality of inpatient medical records documentation should be implemented, through this study improvement is targeted through

5.3.1. Open inpatient medical record audits

5.3.2. Closed inpatient medical record audits

5.3.3. Inter / intra departmental inpatient medical record audits

5.3.4. EMR system implementation for inpatient medical records

5.3.5. Timely corrections after quality audits

5.3.6. Online portals

5.3.7. Using bright colored stickers or stickers (crash cart)

5.3.8. Changing the color of forms

5.3.9. Empowering IT infrastructure

6. CHAPTER 6- Reference:-

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- 6.17.** Joint Commission on Accreditation of Healthcare Organizations. 2005 National patient safety goals.

APPENDIX

List of forms with its parameters documented by physician

Physician		
Name of form	Opportunities of Errors	Compliance
Pre-admission form	Seal & signature missing	75%
Discharge authorization form	Doctors name and signature missing	38%
Admission discharge record	Final diagnosis missing	76%
	Discharge status missing	83%
	Signature,seal,Date & time not documented	32%
	Full form of abbreviations not documented	79%
	Unapproved abbreviation	90%
	Illegible handwriting	92%
	Over-writing with no error mark and sign	97%
	operations/ procedure missing	91%
	provisional diagnosis missing	100%
In house transfer form	Transferring physician time /date /seal missing or not clear/signature missing	44%
	unaproved abbreviation	97%
	allergies missing	97%
	diagnosis missing	95%
	medication missing	98%
	vitals missing	96%
Initial assessment form(SURGERY)	Vitals missing	100%
	cheilf complains missing	100%
	history of present illness not completed	99%
	allergies missing	100%
	personal history not documented	100%
	family history not documented	97%
	past history not documented	98%
	current medication missing	95%
	general examination missing	99%
	systemic examination missing	100%
	surgical site marked if any	99%
	provisional diagnosis missing	100%
	signature and seal of physician	98%

Initial assessment form(OBG)	Vitals documented	100%
	chief complains documented	100%
	history of present illness completed	98%
	allergies documented	100%
	personal history documented	97%
	Menstrual history documented	100%
	expected date of delivery history documented	100%
	contraceptive history documented	96%
	obstetric history documented	100%
	mode of delivery documented	100%
	family history not documented	96%
	Prenatal lab finding present	93%
	past history documented	100%
	current medication present	100%
	general examination present	97%
	systemic examination present	100%
	surgical site marked if any	100%
	provisional diagnosis present	99%
	signature and seal of physician with date and time	87%
Initial assessment form(endoscopy)	Vitals documented	98%
	Eligible hand writing	99%
	Correction marked error and signed	97%
	Surgical site is ticked	93%
	Major illness documented	99%
	Recent diagnostic test history present	100%
	History of present illness completed	99%
	Personal history documented	98%
	Family history documented	95%
	past history documented	97%
	Current medication present	93%
	General examination present	100%
	systemic examination missing	98%
	Approved abbreviations	92%
	Provisional diagnosis present	99%
	signature and seal of physician with date and time	100%

Initial assessment form(pediatrics)	Vitals documented	96%
	Immunization history present	99%
	Eligible hand writing	97%
	Major illness documented	98%
	Recent diagnostic test history documented	100%
	History of present illness completed	100%
	Personal history documented	100%
	Family history documented	98%
	Past history documented	99%
	Current medication documented	93%
	systemic examination documented	99%
	General examination documented	98%
	Provisional diagnosis documented	96%
	Birth history documented	100%
	Allergies written	97%
	signature and seal of physician with date and time	96%
Initial assessment form(Cardiology)	Vitals documented	100%
	Cheif complains missing	100%
	History of present illness completed	100%
	Allergies written	100%
	Personal history documented	99%
	Family history documented	94%
	Past history documented	96%
	Current medication documented	96%
	General examination documented	100%
	systemic examination documented	100%
	Approved abbreviations	97%
	Eligible hand writing	96%
	Discharge plan incomplete	99%
	Surgical site marked if any	100%
	Provisional diagnosis documented	99%
	signature and seal of physician with date and time	97%
Initial assessment	Vitals missing	97%

form(Medicine)	cheilf complains missing	100%
	Illeligible handwriting	92%
	unapproved abbreivation	95%
	history of present illness not completed	100%
	allergies missing	97%
	personal history not documented	100%
	family history not documented	94%
	past history not documented	100%
	current medication missing	95%
	general examination missing	100%
	systemic examination missing	100%
	recent diagnostic missing	98%
	surgical site marked if any	100%
	provisional diagnosis missing	100%
	date and time missing	98%
	signature and seal of physician	98%
Initial assessment form(Opthalmology)	Vitals missing	100%
	cheilf complains missing	100%
	history of present illness not completed	100%
	date and time not documented by physician	98%
	allergies missing	100%
	personal history not documented	98%
	family history not documented	98%
	past history not documented	98%
	current medication missing	98%
	general examination missing	100%
	systemic examination missing	100%
	time of completion of initial assessment missing	98%
	surgical site marked if any	100%
	provisional diagnosis missing	100%
	signature and seal of physician	100%
Initial assessment form(ENT)	Vitals missing	100%
	cheilf complains missing	100%
	history of present illness not completed	100%
	allergies missing	99%
	personal history not documented	100%

	family history not documented	96%
	past history not documented	99%
	current medication missing	96%
	general examination missing	100%
	systemic examination missing	99%
	surgical site marked if any	100%
	provisional diagnosis missing	100%
	signature and seal of physician	100%
Initial assessment form(Orthopedics)	Vitals missing	100%
	illegible handwriting	98%
	chief complains missing	100%
	history of present illness not completed	100%
	allergies missing	100%
	personal history not documented	99%
	family history not documented	97%
	past history not documented	99%
	current medication missing	96%
	general examination missing	100%
	systemic examination missing	100%
	orthopedic examination missing	100%
	surgical site marked if any	99%
	provisional diagnosis missing	100%
	signature and seal of physician	98%
Doctors progress notes	Time/date missing for entries	83%
	unapproved abbreviation	92%
	Illegible handwriting	80%
	discharge instruction not specific /discharge instruction to be written in general orders	98%
	No doctors notes /not readable	87%
	Physician seal & signature missing	90%
	Over-writing with no error mark and sign	95%
Physician order sheet	Time/date missing for entries	71%
	Illegible handwriting	92%
	No doctors notes /not readable	94%
	Physician seal & signature missing	77%
	Over-writing with no error mark and sign	98%
	diet orders missing	56%

General orders	Time/date missing for entries	94%
	Illeligible handwriting	92%
	unapproved abbreviation	97%
	No doctors notes /not readable	89%
	Physician seal & signature missing	98%
	Over-writing with no error mark and sign	97%
Medication order sheet	allergies missing	95%
	drug name in small letters	57%
	illeligible handwriting	89%
	dose/route/frequency not clear or missing	66%
	unapproved abbreviations	86%
	date/doctors sign/time ordered/pharmacist sign missing or not clear	72%
	Over-writing with no error mark and sign	74%
i.v fluid orders	doctors sign missing	75%
Medical Reconcillation form	Physician seal & signature missing	75%
	Over-writing with no error mark and sign	100%
Integrated care plan	initial care plan missing fully or partially	60%
	Illeligible handwriting	92%
	unapproved abbreviation	99%
	No doctors notes /not readable	100%
	Physician seal & signature missing with date	78%
	no sign of physician in the dietetics review column	52%
	no sign of physician in the nursing review column	24%
	no sign of physician in the physiotherapist review column	99%
	surgical care plan missing fully or partially	100%
informed consent form	name of physician missing	99%
	procedure missing	96%
	name /age of patient missing	81%
	type of anesthesia/sedation missing	100%

	expected result of anesthesia /alternative and their risk missing	88%
	anesthetist name /signature and seal/date missing	93%
	performing physician name/signature and seal /date missing	88%
Pre-anesthesia /sedation evaluation/PAC FORM	height/weight/BMI missing	73%
	date of PAC/time missing	80%
	proposed surgery missing	100%
	medical history missing	100%
	history of previous anesthetics/surgery missing	97%
	clinical examination missing	100%
	investigations missing	51%
	seal and signature of anesthesiologist missing	80%
Anesthesia record	Seal /time/date missing	84%
	start time/End time of anesthesia not documented	89%
	vitals missing	96%
	type of anesthesia not documented	95%
Surgical safety checklist	name of surgery missing	74%
	anesthetist signature /time/date missing	88%
	surgeon signature with date and time missing not documented	91%
Operation notes	Seal & signature of surgeon missing with date and time	72%
	illegible handwriting	92%
	pre-operative diagnosis missing	93%
	post operative diagnosis missing/not documented in right section	92%
	types of anesthesia not documented	77%
	specimen sent to pathology not documented	76%
	sponge /swabs/instruments counts not documented	80%
	procedure and findings	97%

	correction shall be marked error and signed	95%
	unapproved abbreviation	87%
	post surgical care plan not documented	76%
Recovery notes	signature and seal with date and time from transfer order from doctor missing	75%
Discharge summary	Assessment of transportation needs not documented	13%
	Comorbidities /allergies and risk/discharge advice/dietary advice not documented	58%
	Discharge medication not documented	97%
	Discharge summary not given to patient	27%
Discharge planning risk assessment-	signature and seal of physician along with date and time not documented	8%
LAMA	no sign and seal along with date and time of physician	24%
	reason of LAMA not documented	48%
	risks not documented	57%

List of forms with its parameters documented by nurse and other staffs

NURSES		
Name of form	Opportunities of Errors	Compliance
MRD Checklist	signature of ward sisters/ shift supervisor	98%
Admission discharge record	Patients identification sticker missing	85%
In house transfer form	Patients identification sticker missing	83%
	transferring nurse sign and name (date and time)	99%
	receiving nurse sign and name (date and time)	96%
Patient orientation checklist	signature missing	97%
	incomplete	99%
	Patients identification sticker missing	100%
	verified by SSN(Signature)	93%
Initial assessment form(SURGERY)	Patients identification sticker missing	100%
Initial assessment form(OBG)	Patients identification sticker missing	100%

Initial assessment form(endoscopy)	Patients identification sticker missing	100%
Initial assessment form(pediatrics)	Patients identification sticker missing	100%
Initial assessment form(Cardiology)	Patients identification sticker missing	100%
Initial assessment form(Medicine)	Patients identification sticker missing	100%
Initial assessment form(Opthalmology)	Patients identification sticker missing	100%
Initial assessment form(ENT)	Patients identification sticker missing	100%
Initial assessment form(Orthopedics)	Patients identification sticker missing	100%
Doctors progress notes	Patients identification sticker missing	100%
Physician order sheet	Patients identification sticker missing	100%
General orders	Patients identification sticker missing	100%
Medication order sheet	Patients identification sticker missing	100%
i.v fluid orders	date missing	100%
	iv fluids not mentioned	98%
	start time missing	95%
	end time missing	87%
	Patients identification sticker missing	99%
Medical Reconciliation form	Patients identification sticker missing	100%
Integrated care plan	sign missing	99%
	date and time missing	96%
	nursing notes missing	100%
	Patients identification sticker missing	100%
patient identification checklist	sign missing	99%
	date and time missing	99%
	all columns not ticked	99%
	Patients identification sticker missing	100%
informed consent form	patient name/signature/date & time missing	93%
	witness name/signature/date & time missing	87%
	nurses witness name/sign/date missing	92%
	Patients identification sticker missing	97%
pre operative preparation checklist	signature of charge nurse on floor with time missing	100%
	signature of or supervisor or charge nurse and time missing	100%
	Patients identification sticker missing	99%
Pre-anesthesia /sedation evaluation/PAC FORM	Patients identification sticker missing	100%
Anesthesia record	Patients identification sticker missing	99%
Surgical saftey checklist	Patients identification sticker missing	96%

Operation notes	Patients identification sticker missing	92%
Recovery notes	signature of nursing staff	97%
	Patients identification sticker missing	99%
Nurses observation chart	For overwriting mark a single strike write and sign in many places	96%
	unapproved abbreviation	98%
	To do(") abbreviation shall be avoided	98%
	Date shall be documented for all columns	88%
	Patients identification sticker missing	93%
Intake output record	date is missing	96%
	weight is missing	90%
	Patients identification sticker missing	100%
nurses progress notes	date and time missing	100%
	signature of nursing staff missing	92%
	For overwriting mark a single strike write and sign in many places	96%
	Patients identification sticker missing	93%
Nursing handover sheet	Unapproved abbreviation	92%
	Assessment column not documented	96%
	For overwriting mark a single strike write and sign in many places	93%
	Patients identification sticker missing	99%
Nursing adult/pediatric initial assessment form	Time and date missing by verified by SSN	80%
	Pain score not documented	98%
	Cross marking done which is not acceptable according to policy	74%
	diagnosis missing	100%
	chief complaints missing	100%
	past medical and surgical history missing	100%
	vitals missing	100%
	nutritional screening missing/documented wrongly	81%
	fall risk asesment scale missing	100%
	Pain score not documented	100%
	signature of RN missing with date and time	100%
	Unapproved abbreviation	94%
	Allergies not documented	94%
	For overwriting mark a single strike write and sign in many places	91%
	Patients identification sticker missing	100%
Discharge checklist	name and employee ID of staff completing the process with date and time missing	99%
	Patients identification sticker missing	99%

Discharge planning risk assessment-	signature of nursing staff with date and time	95%
	Patients identification sticker missing	97%

PAD		
Name of form	Opportunities of Errors	Compliance
Pre-admission form	Identification details/number missing	80%
	Pre-admission form missing	95%
Admission authorization form	received by missing	97%
	Signature missing	97%
Discharge authorization form	PAD signature missing	5%

MRD		
Name of form	Opportunities of Errors	Compliance
MRD Checklist	Signature missing of MRD staff	14%

PHARMACIST		
Name of form	Opportunities of Errors	Compliance
Medication order sheet	Over-writing with no error mark and sign	99%
	clinical pharmacist intervention sign missing	92%
Medical Reconciliation form	allergies missing	100%
	drug name/dose/route/frequency/last taken date and time missing	97%
	unapproved abbreviation	80%
	signature of pharmacist missing	98%
	date /time missing	91%

DIETICIAN		
Name of form	Opportunities of Errors	Compliance
Integrated care plan	dietician notes missing	98%
	time not documented by dietician	77%

ICN		
Name of form	Opportunities of Errors	Compliance
islocation precaution form	clinical condition not documented	0%

ICD		
Name of form	Opportunities of Errors	Compliance
islocation precaution form	Signature of ICD with date and time not documented	32%