Project : Quality Improvement Project On Medical Reconciliation at the time of admission to improve patients safety and care.

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IIHMR-U/01/2022-24/1458

About the Organisation

Max Healthcare Institute Limited ("Max Healthcare") is one of India’s largest healthcare organizations establish in 2001.
operating 19 healthcare facilities
with over 4000 beds
30+ specialties
5000+ clinicians
20,000+ employees
across NCR Delhi, Haryana, Punjab, Uttarakhand, and Maharashtra.
With 85% of its bed capacity in Metro/Tier 1 cities, Max Healthcare also runs a homecare business, Max@Home, offering health and wellness services at home, and Max Labs.
Promoted and led by Chairman and Managing Director Abhay Soi.
It is a NABH, NABL and JCI accredited.

Max Healthcare

Mission

To deliver comprehensive, high-quality, and patient-centered healthcare services. They aim to ensure the highest standards of medical care, embrace innovation, and enhance patient experiences. Max Healthcare is committed to upholding ethical practices, fostering community health.

Vision

our vision is to be the most well regarded healthcare provider in India committed to the highest standards of clinical excellence and patient care, supported by latest technology and cutting edge research

- Providing high standard of medical care and patient safety
- Enhancing patient experiences
- Upholding Ethical Standard and maintain Integrity

Values

- Excellence
- Compassion
- Efficiency
- Consistency

Project Background

Medical Reconciliation are an essentials aspects of patient care in hospitals, performed daily to ensure patients safety. This crucial process, if not done accurately can lead to multiple medication error. the reconciliation of a patients medications regimen involving numerous factors and remains a challenging task for caregiver, patients and healthcare professionals alike. The precision of medical reconciliation is critical ,as any mistake in medication –whether in term of drug, dosage, route or frequency can significantly impact patient outcome during their hospital stay.

This study aims to gain a comprehensive understanding of the medical reconciliation process for inpatients . This Include analyse the medical reconciliation process by identifying the factors contributing to incompleteness of medical reconciliation process. Ultimately the research will provide valuable recommendation to completeness of medical reconciliation process for inpatients to improve patients safety and care . The quality improvement project aimed to enhance the accuracy of medical reconciliation at the time of admission to improve patient safety and care. This quality improvement project has provided valuable insights into the current state of compliance and areas needing enhancement.

This study also improving the efficiency of the healthcare system.

High 5s Project set up by the World Health Organization in 2007 and coordinated globally by the WHO collaborating Centre agency for Healthcare Research and Quality, USA for patient safety.

Medical Reconciliation Statistics In India

It is estimated that around 5.2 million medical errors occur annually in the country, with a notable proportion attributable to medication errors due to incomplete medical reconciliation(Inn Health Magazine).

1 out of 10 patients every year globally

5.2 Million Medical Errors in India

WHO: "Medication Without Harm" initiative guidelines- 2017

WHO: "Medication Without Harm" initiative guidelines- 2017

introduced guidelines for medical reconciliation as part of its "**Medication Without Harm**" initiative, launched in March 2017. This initiative aims to reduce severe, avoidable medication-related harm by 50% over five years globally. The guidelines emphasize the importance of accurate medication information during all transitions of care to improve patient safety and reduce medication errors.

ICMR highlighted that about 10% of hospital admissions were due to medication errors, many of which were related to poor medical reconciliation practices.

NABH guidelines emphasize the importance of medication reconciliation as part of their accreditation standards.

JCI accredited healthcare organizations must implement processes to obtain and document a complete list of the patient's current medications upon admission to the facility.

NCQA accredited healthcare organizations recognition must demonstrate effective processes for medication reconciliation to ensure patient safety and continuity of care and he use of EHRs to facilitate accurate medication lists and reconciliation processes.

Introduction

Medication reconciliation is the formal process in which health care professionals' partner with patients to ensure accurate and complete medication information transfer at interfaces of care.

Medication reconciliation is a critical process aimed at ensuring the accuracy and consistency of patients' medication information during transitions of care. These transitions, such as hospital admissions, transfers between wards, and discharges to the community or residential care facilities, are often marked by poor communication between health professionals and between health professionals and patients or their carers. This communication breakdown is a significant contributor to avoidable adverse drug events (ADEs), which are a leading cause of injury and death in healthcare systems worldwide.

Medical Reconciliation Process In Max Healthcare

(On Direct Admission) – Done during Initial assessment by documented drug, dosage, route, frequency and YES for to be continue.

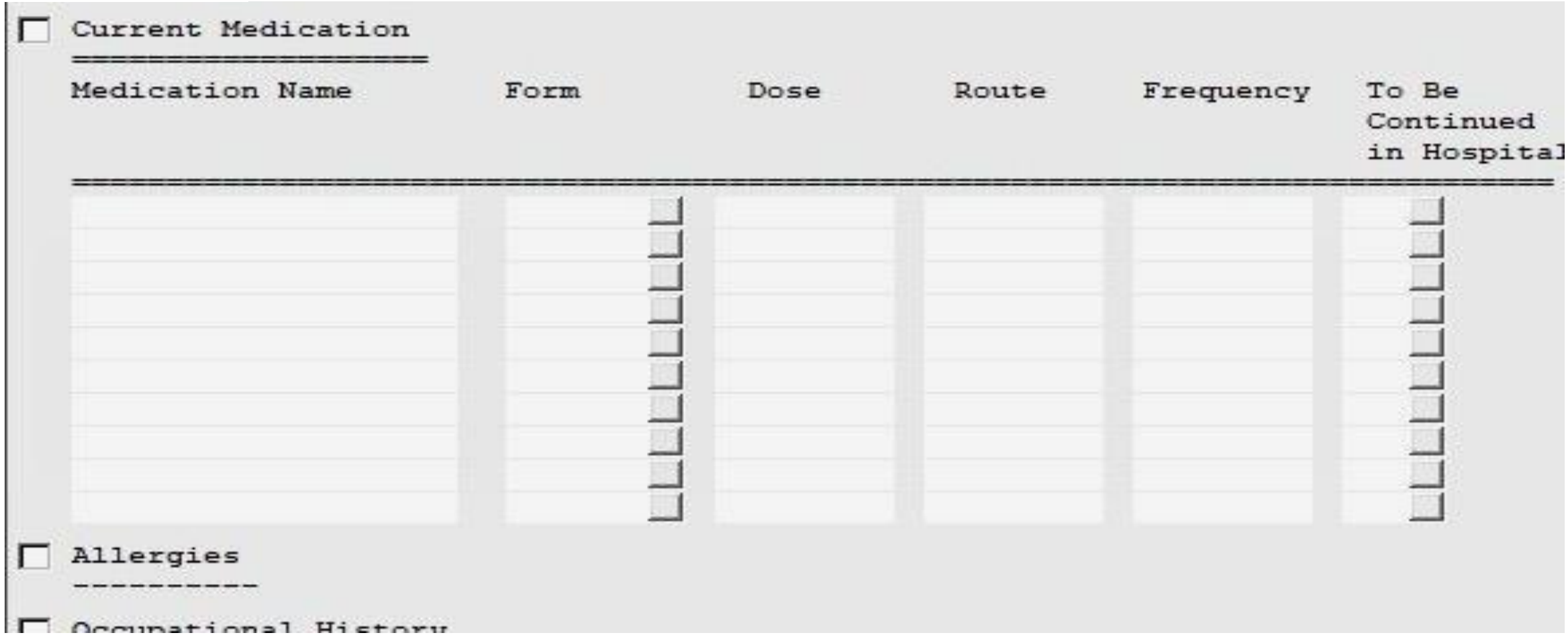
(Transfer Emergency – ICU/Ward) - Automatically Disable Through CPRS.

(Transfer ICU - Ward) - Renew Order and discontinue for no longer need.

(Transfer Ward - ICU) - Renew Order and discontinue for no longer need.

(On Discharge) - Reconciliation Medication only those required by patients.

Current Medication – a part of medical reconciliation process



☐ Current Medication

Medication Name	Form	Dose	Route	Frequency	To Be Continued in Hospital

☐ Allergies

☐ Occupational History

Research Question

To evaluate and enhance the accuracy, efficiency and effectiveness of the medication reconciliation process during patient admission by minimize medication error to ensure the continuity of care without any discrepancies to improve the patient care and outcome.

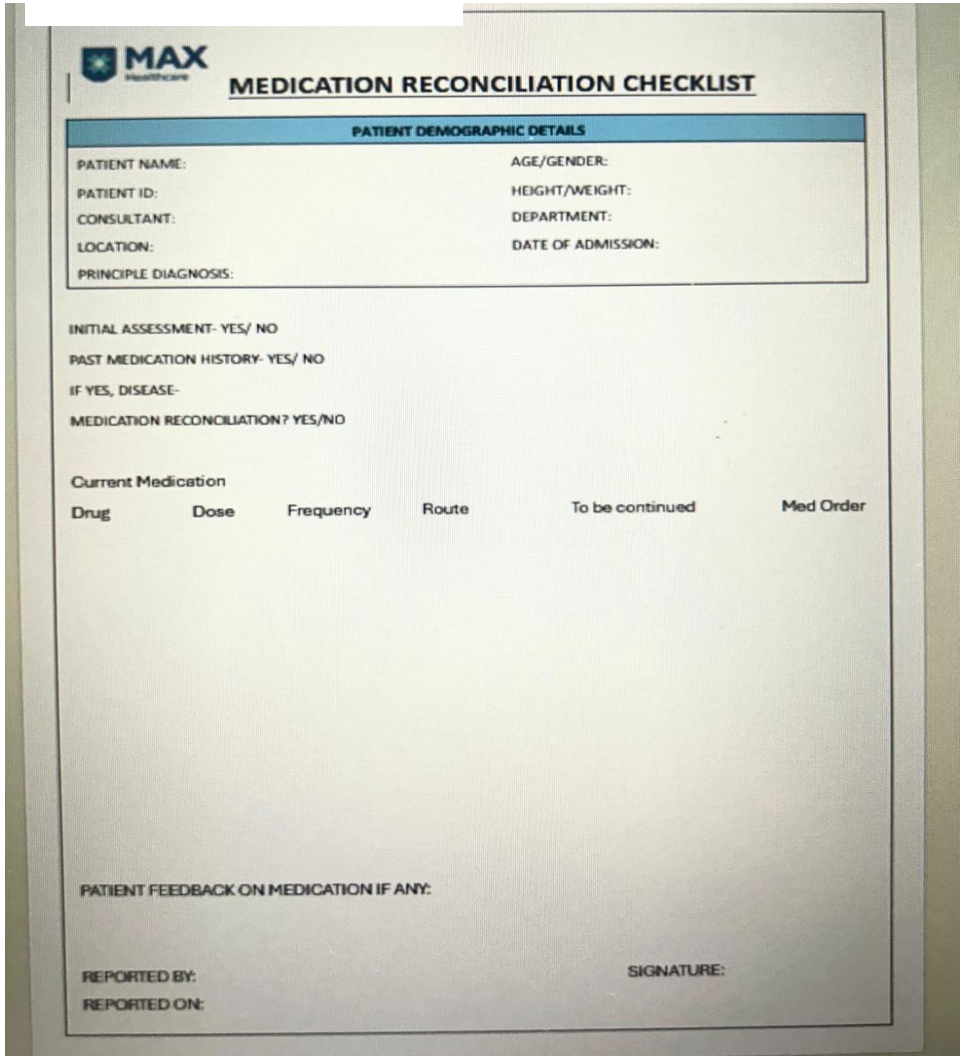
Objectives

- To study the medical reconciliation process at the time of admission.
- To ensure adherence to the organizations established guidelines and standard for medical reconciliation.
- To evaluate the efficiency of the medication reconciliation process in terms of incompleteness.
- To identify areas for improvement in the medication reconciliation process at the time of admission.

Methodology

STUDY	INCLUSION CRITERIA	EXCLUSION CRITERIA	VARIABLES
STUDY DESIGN- Retrospective Observational Study	Patients are admitted to any hospital department	Patients who are transfer to ICU/Ward	Patients demography
STUDY SETTING- Max Healthcare	Patients of all age groups and genders	Patients on discharge	IP Assessment
STUDY Duration- 3 Months	Patients of all disease categories		• Medical Reconciliation Parameters Drug • Dosage • Route • Frequency • Continuation and Medication Order
STUDY SAMPLE- 249			
STUDY TOOLS- CPRS , EXCEL			

Study Tools



MAX Healthcare

MEDICATION RECONCILIATION CHECKLIST

PATIENT DEMOGRAPHIC DETAILS	
PATIENT NAME:	AGE/GENDER:
PATIENT ID:	HEIGHT/WEIGHT:
CONSULTANT:	DEPARTMENT:
LOCATION:	DATE OF ADMISSION:
PRINCIPLE DIAGNOSIS:	

INITIAL ASSESSMENT- YES/ NO

PAST MEDICATION HISTORY- YES/ NO

IF YES, DISEASE-

MEDICATION RECONCILIATION? YES/NO

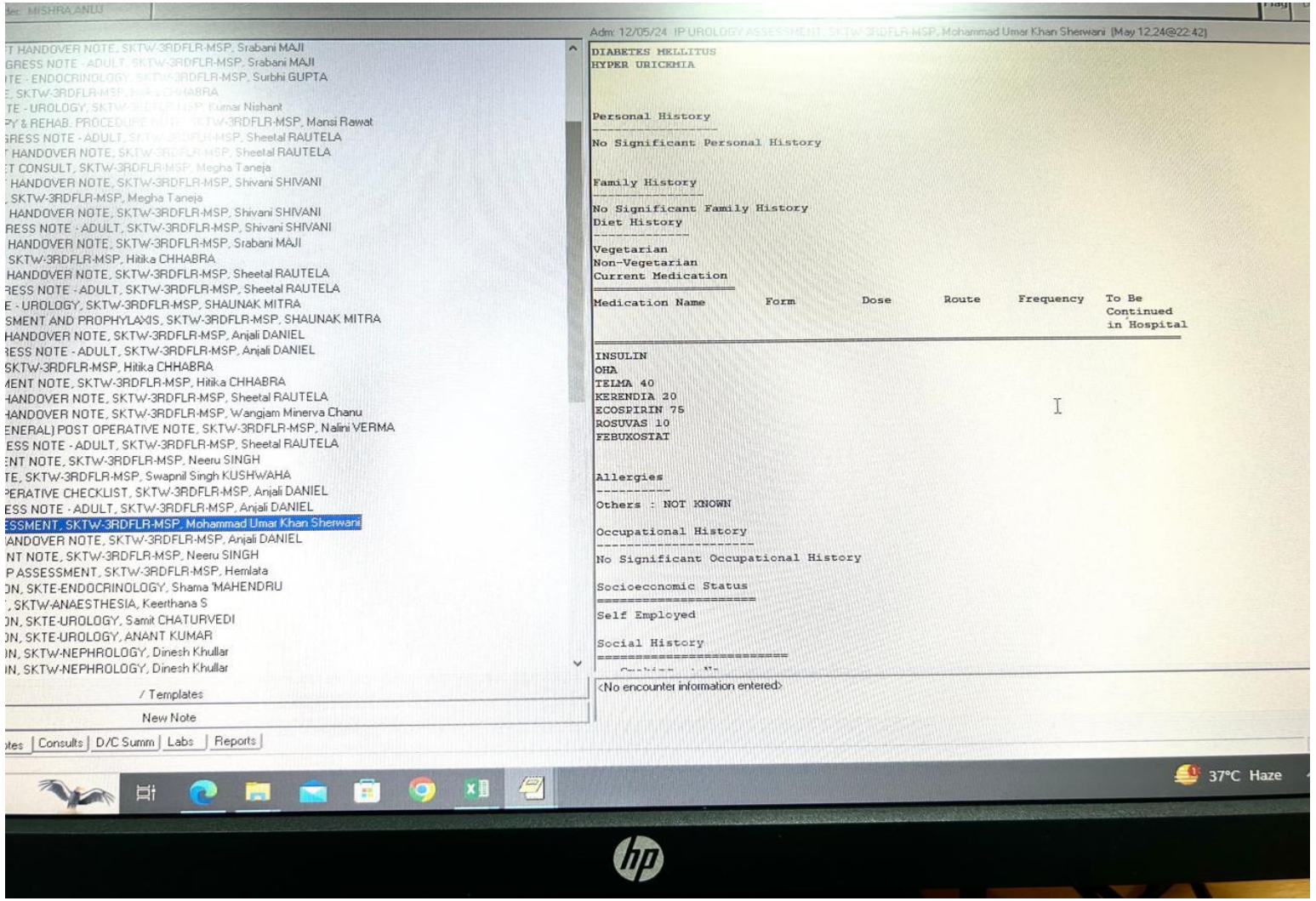
Current Medication

Drug	Dose	Frequency	Route	To be continued	Med Order

PATIENT FEEDBACK ON MEDICATION IF ANY:

REPORTED BY: SIGNATURE:

REPORTED ON:



Checklist

CPRS (EHIS)

Methodology and Ethical Considerations

Privacy and Confidentiality	Data Sharing and Reporting	Risk Of Harm
• Participant confidentiality will be maintained, with all data collected , stored and accessed only by study participant.	• To ensure that any data collected is used appropriately and reported in a responsible and transparent manner.	• The study ensure that any procedure used does not cause undue stress to the staff, patients and healthcare professionals.

Project Charter

Problem Statement

Patient Safety and Quality Care is the ultimate goal in healthcare. Incompleteness of medical reconciliation process can lead to multiple medication error and can affect patient outcome. This quality improvement project aimed to gain a comprehensive understanding of medical reconciliation process and increase awareness of the importance of medication reconciliation and analyze the medical reconciliation process By identify the factors contributing to incompleteness of process for inpatients and to ensure the patient safety and care at the time of admission.

Opportunity Statement

- There are enough opportunities to increase the compliance of Medical reconciliation at the time of admission and in different specialties.
- Ensure Completeness of medical reconciliation in different specialties.

Goal Statement

Metric	Current level	Goal / Target	Target date
MR Compliance conducted at the time of admission	current Rate: 44% compliance of medication reconciliation	To increase compliance of medical reconciliation – at least 75%	20-June-2024

Project Scope

In Scope – different specialty include – Nephrology, Neurology, Cardiology, Urology, Oncology, Internal Medicine, Pulmonology, Gastrology, Orthopedics, ENT etc.

Project Plan

Phase		Remarks
Plan	Prepare the audit checklist for assessing the medical reconciliation process	Done
Do	Conducting the audit for patients and record all the parameters of medical reconciliation	Done
Check	Analyze and review the data collected	Done
Act	Informed the Floor managers and healthcare professionals for the incompleteness of Medrec.	Done

Team Selection

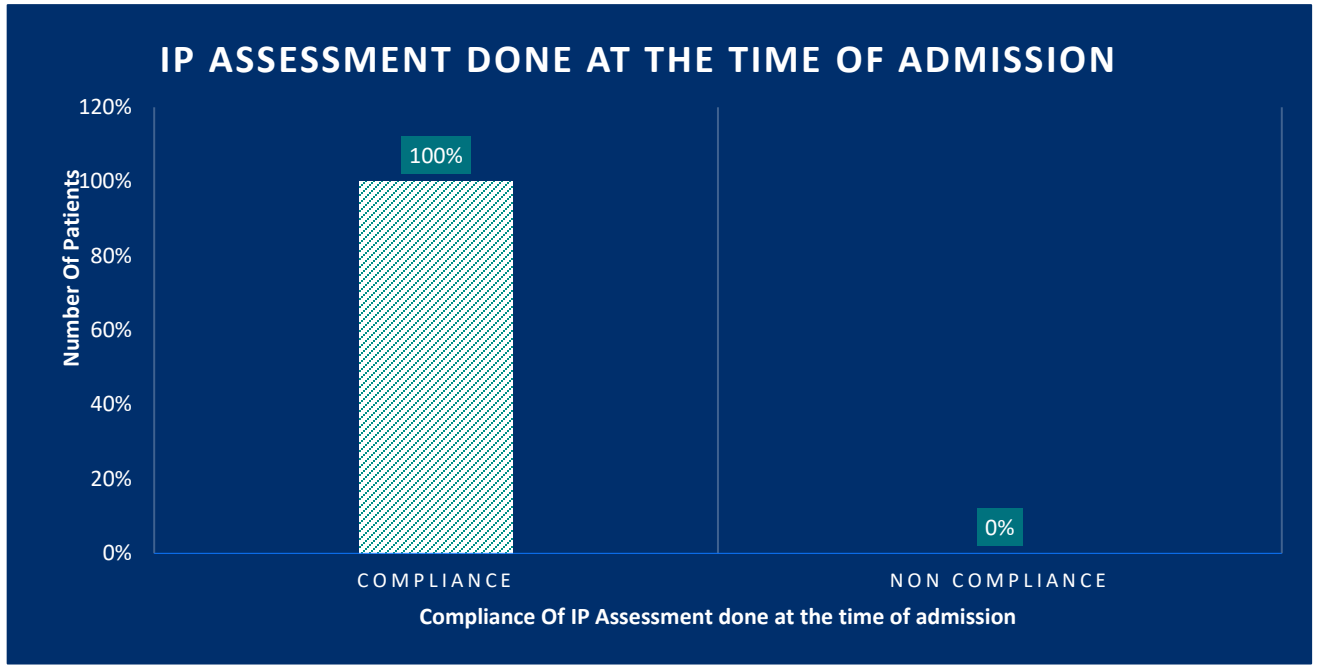
Champion :- Dr Ananya Saini

Project Leader's: Dr. Pranav Shankar (Medical Superintendent)
Dr Monica Manon (Medical Quality)
Dr Kanu Aggarwal (Medical Quality)
Dr Ravi Shanker (Head Of Clinical Pharmacy)

PDCA - Conceptual model-The project was developed with the reference of Donabedian model

PLAN	DO	CHECK	ACT
Preparing the medical audit checklist	Conducting the audit for data collection	Review the data and analyse data	Coordinate with the floor managers and healthcare professionals
Using the CPRS for data collection	Record, Monitor and gather feedback	Use regular audits and spot checks to ensure adherence to procedures	Informed the floor manager, Iimplement regular review meetings .

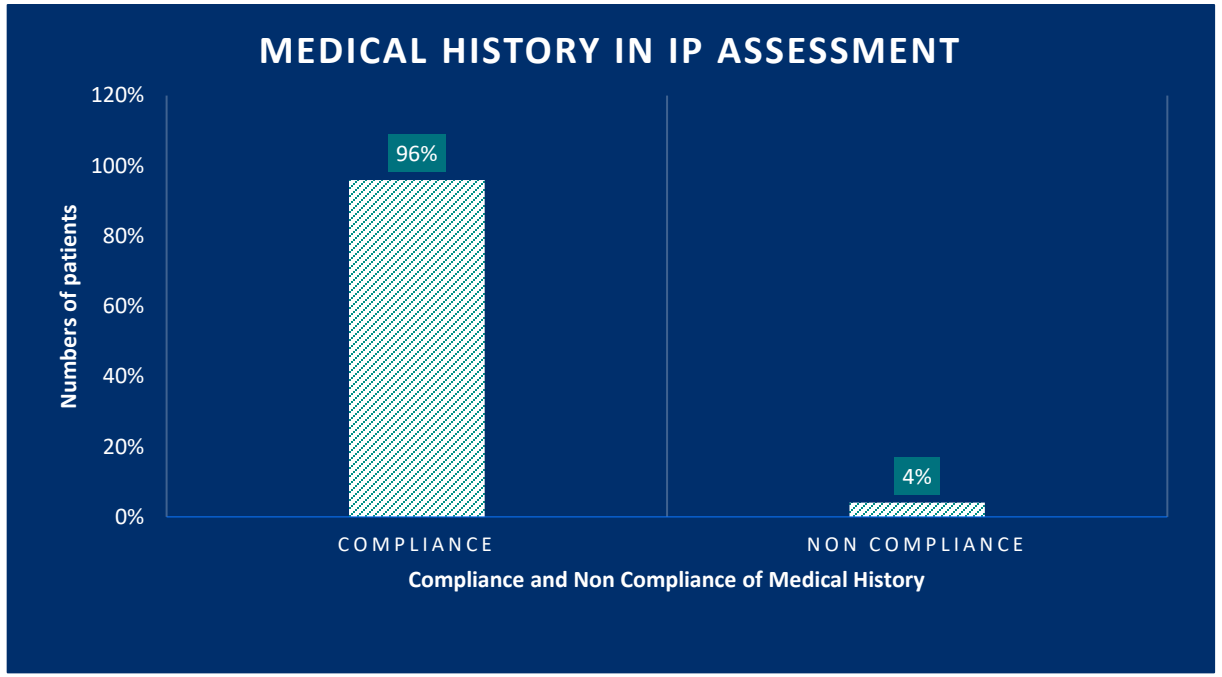
IP Assessment done at the time of admission



Key Observations:-

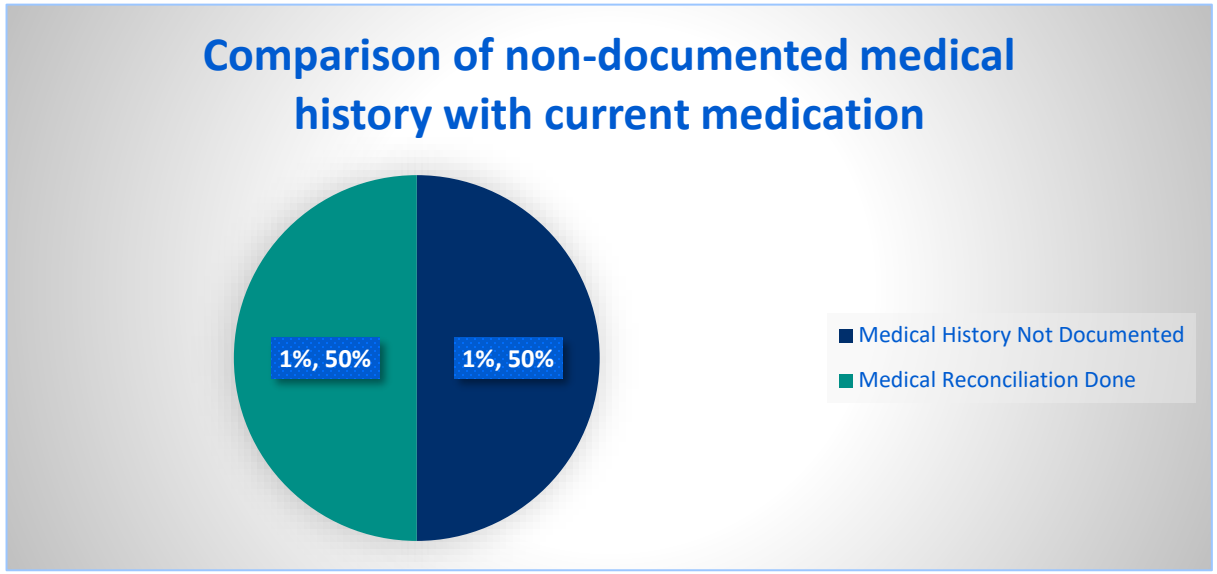
The compliance rate for IP assessments done at the time of admission is shown as 100%. This indicates that every patient admitted has had their inpatient assessment completed as required which implies that the hospital's processes for conducting IP assessments at admission are robust and strictly adhered to.

Medical History in IP Assessment



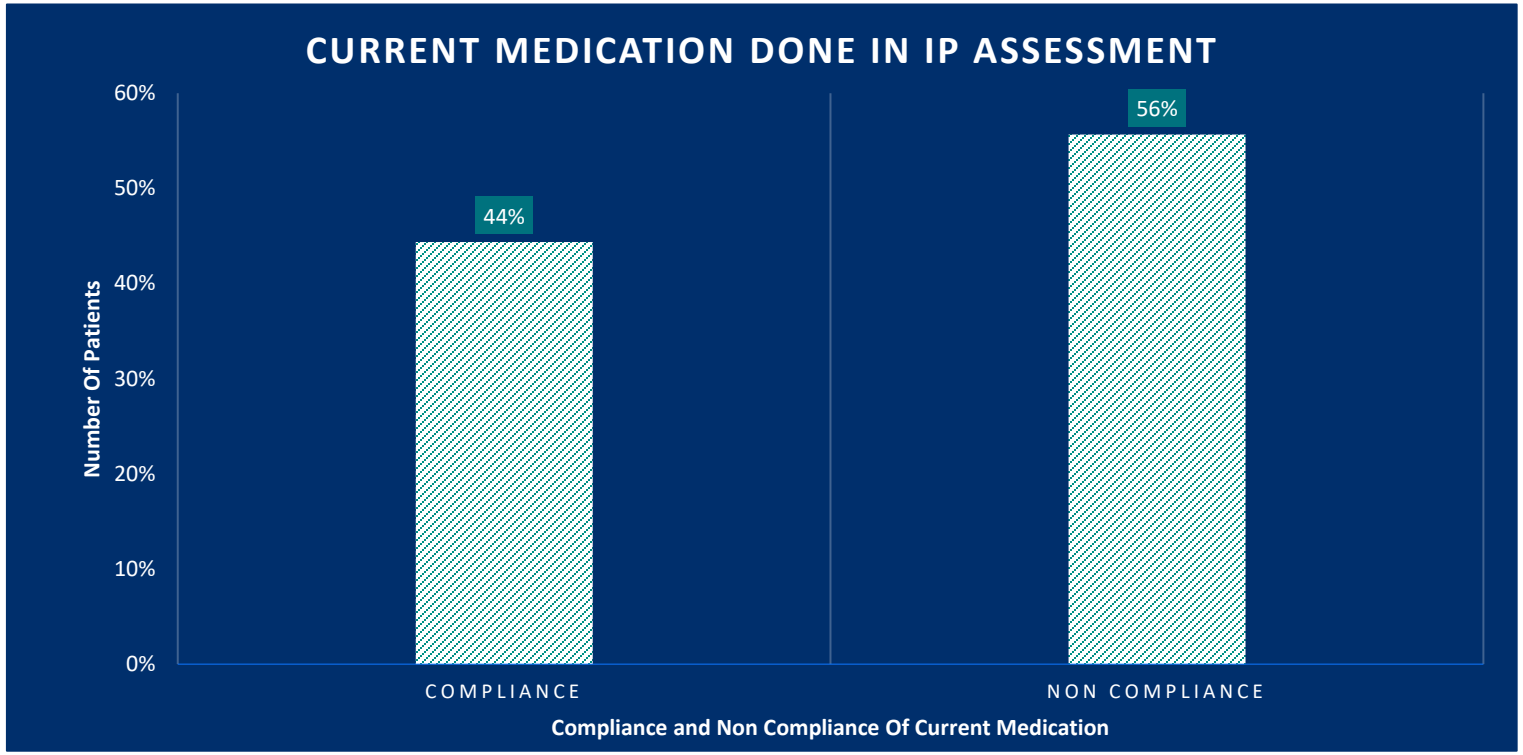
This graph shows that the compliance for medical history in IP assessment is 96% while Non compliance for medical reconciliation is 4% which shows that the medical history is not documented in IP assessment

Comparison of non-documented medical history with current medication



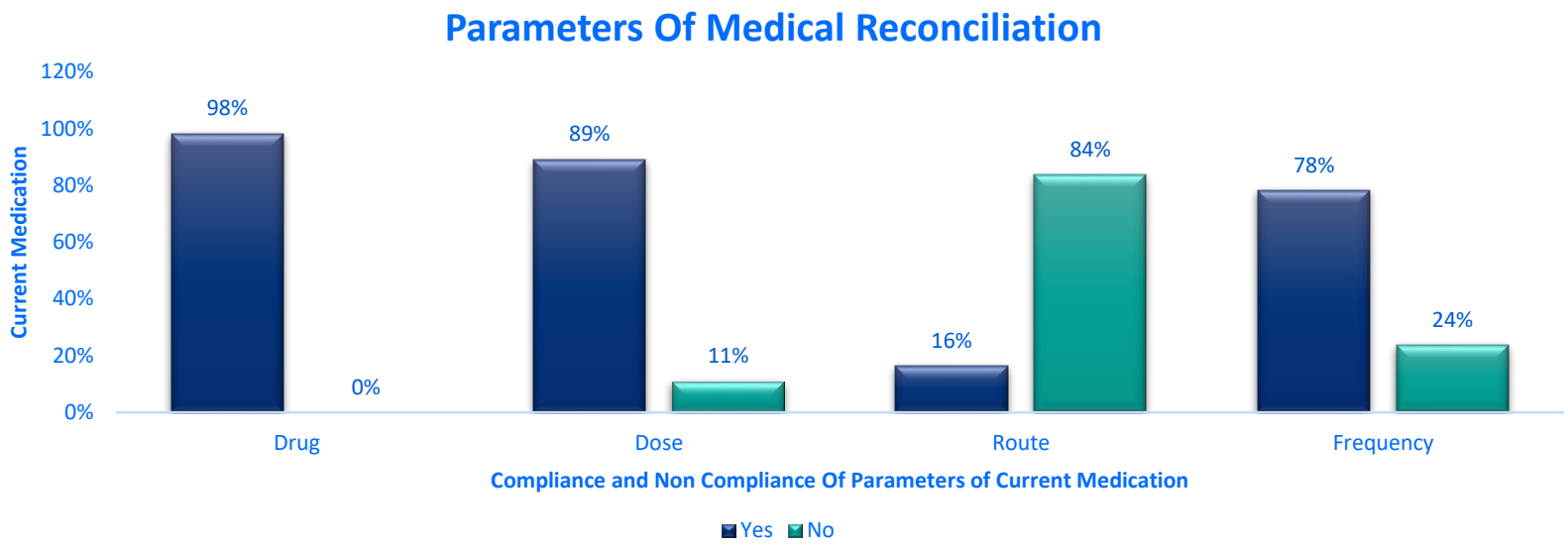
Key Observations:-Within this 4%, an alarming 1% proceeds with documenting current medications, which highlights a critical flaw in the medication reconciliation process.

Current Medication done in IP Assessment



Key Observations- The graph indicates that compliance with current medication assessments during inpatient (IP) admissions is 44%, while non-compliance is 56%. This means that medication assessments were not conducted for patients .

Parameters Of Medication Reconciliation

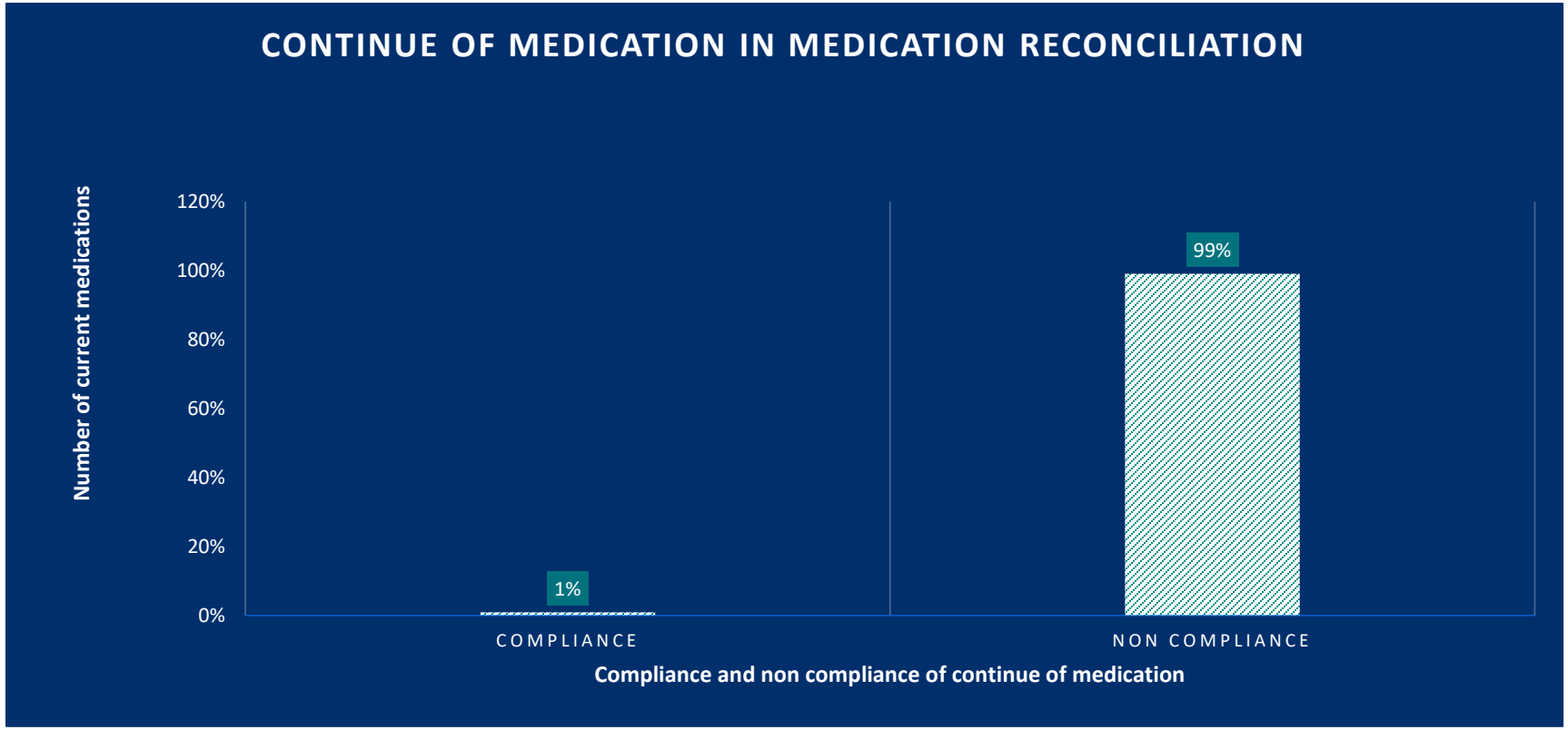


Key Observations:-

Compliance rates are highest for the drug parameter at 98% indicates that the documentation of the drug name is very accurate and reliable.

- The dose parameter shows 89% compliance and 11% non-compliance.
- the route parameter has 16% compliance and 84% non- compliance.
- The frequency parameter has the compliance rate at 78%, with 24% non-compliance.

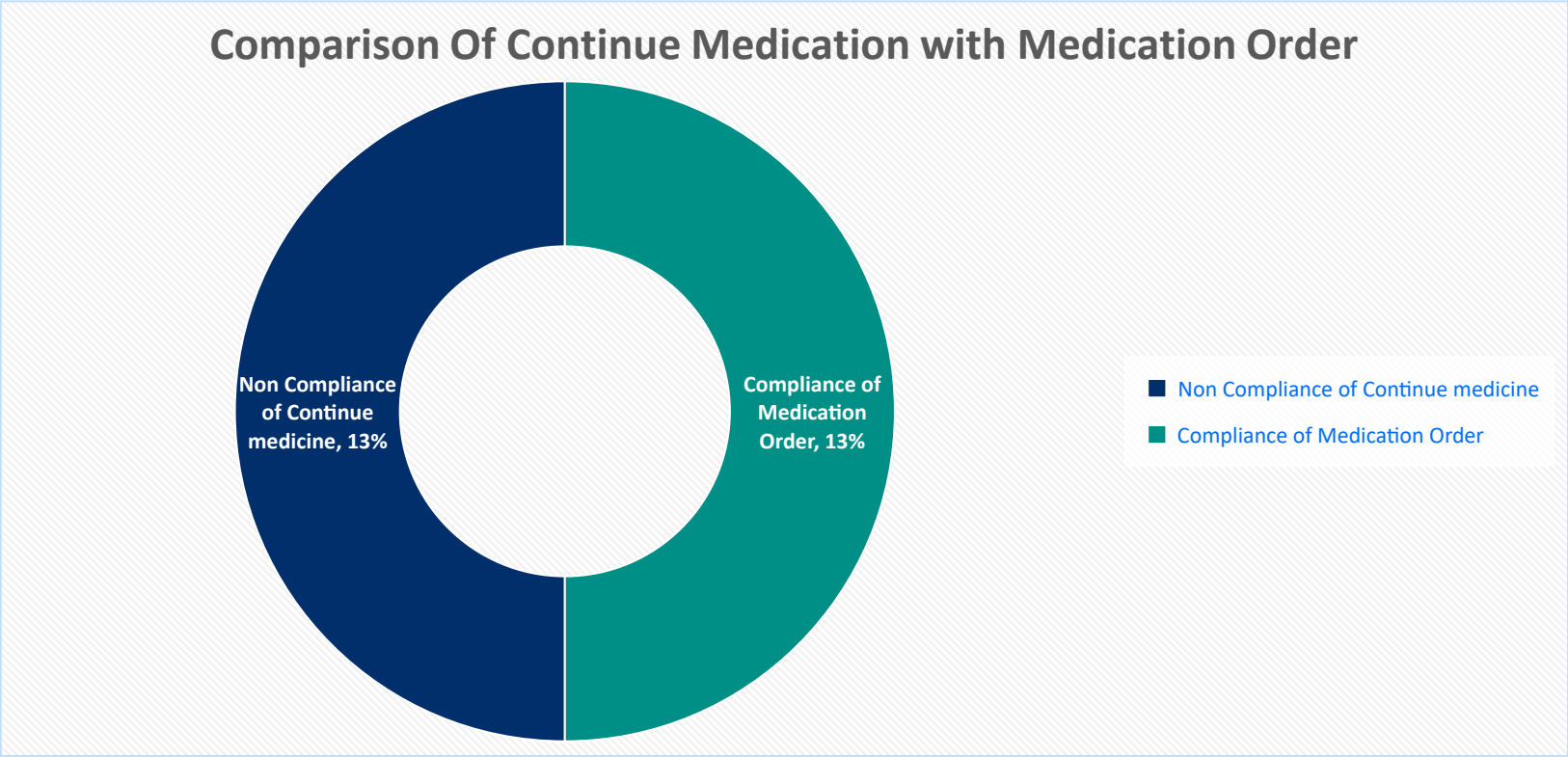
Continue of Medication in Medication Reconciliation"



Key Observation:- Only 1% of current medications were accurately continued according to the reconciliation process.

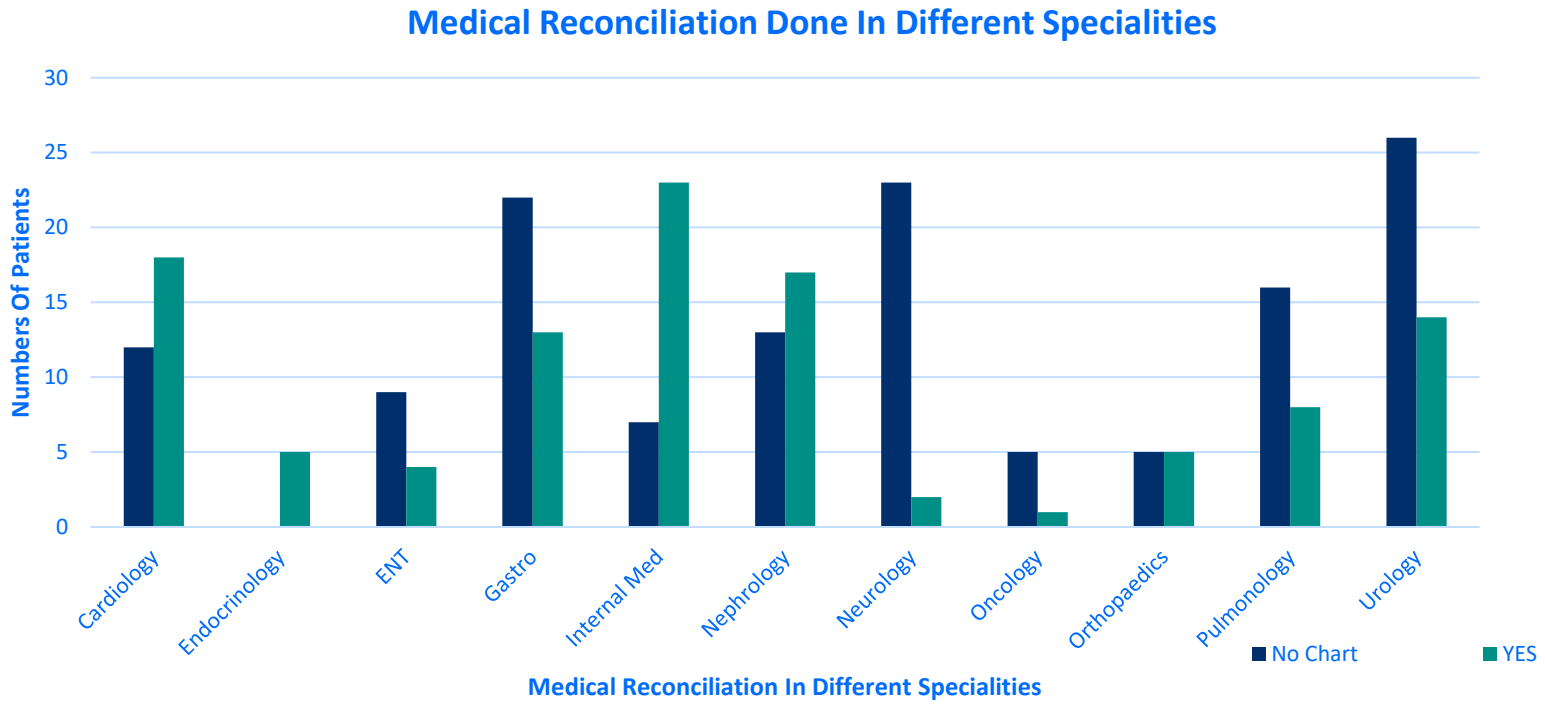
- A significant 99% of current medications were not accurately continued in the medication reconciliation process.

Comparison Of Continue Medication with Medication Order



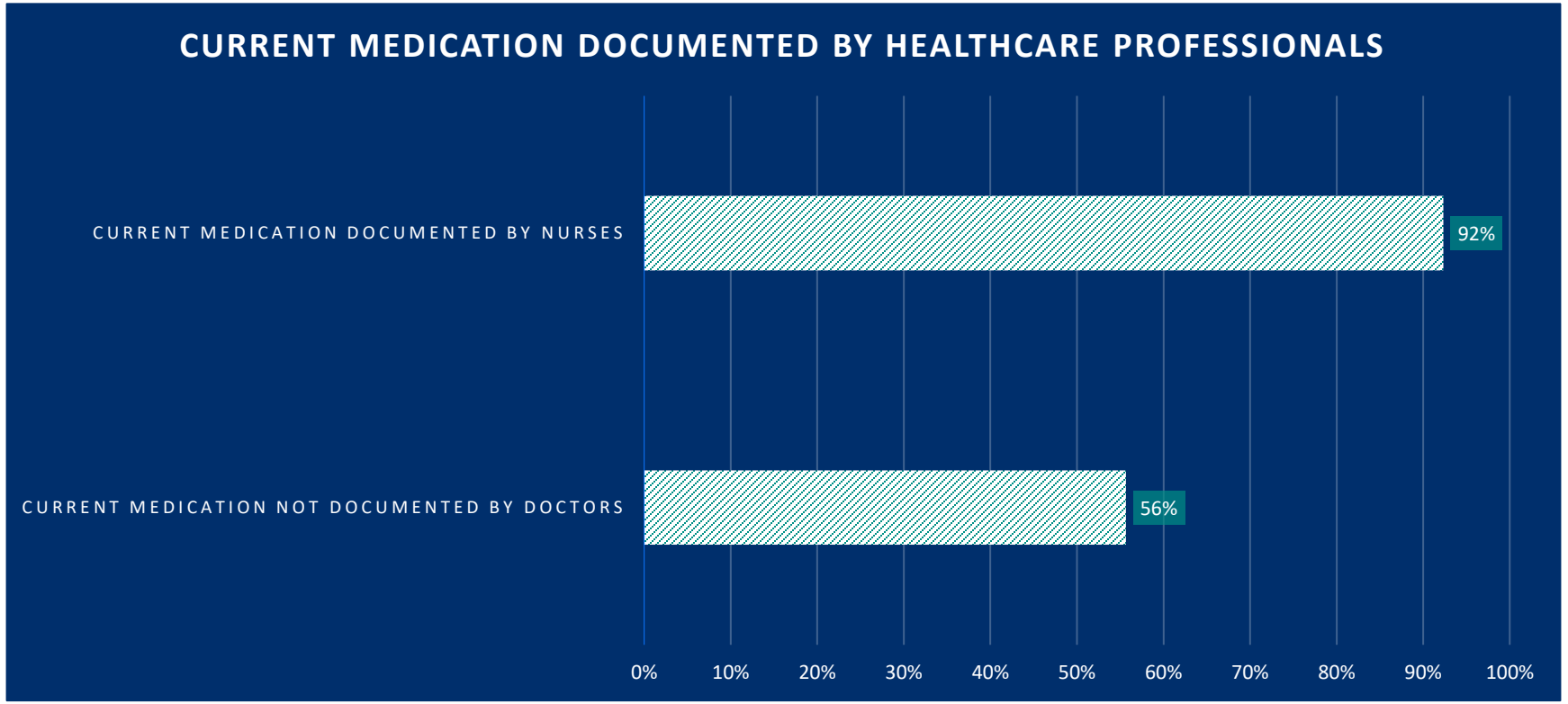
Key Observation:- It shows that 13% of patients did not have their medications continued, indicating non-compliance. Conversely, the compliance rate for medication orders is also 13%, indicating that these patients had their medication orders correctly processed.

Medical Reconciliation Done In Different Specialities



- **High Compliance (>75%):** Endocrinology (100.0%), Internal Medicine (76.7%)
- **Moderate Compliance (50%-75%):** Cardiology (60.0%), Nephrology (56.7%), Orthopaedics (50.0%)
- **Low Compliance (<50%):** ENT (30.8%), Gastroenterology (37.1%), Neurology (8.0%), Oncology (16.7%), Pulmonology (33.3%), Urology (35.0%)

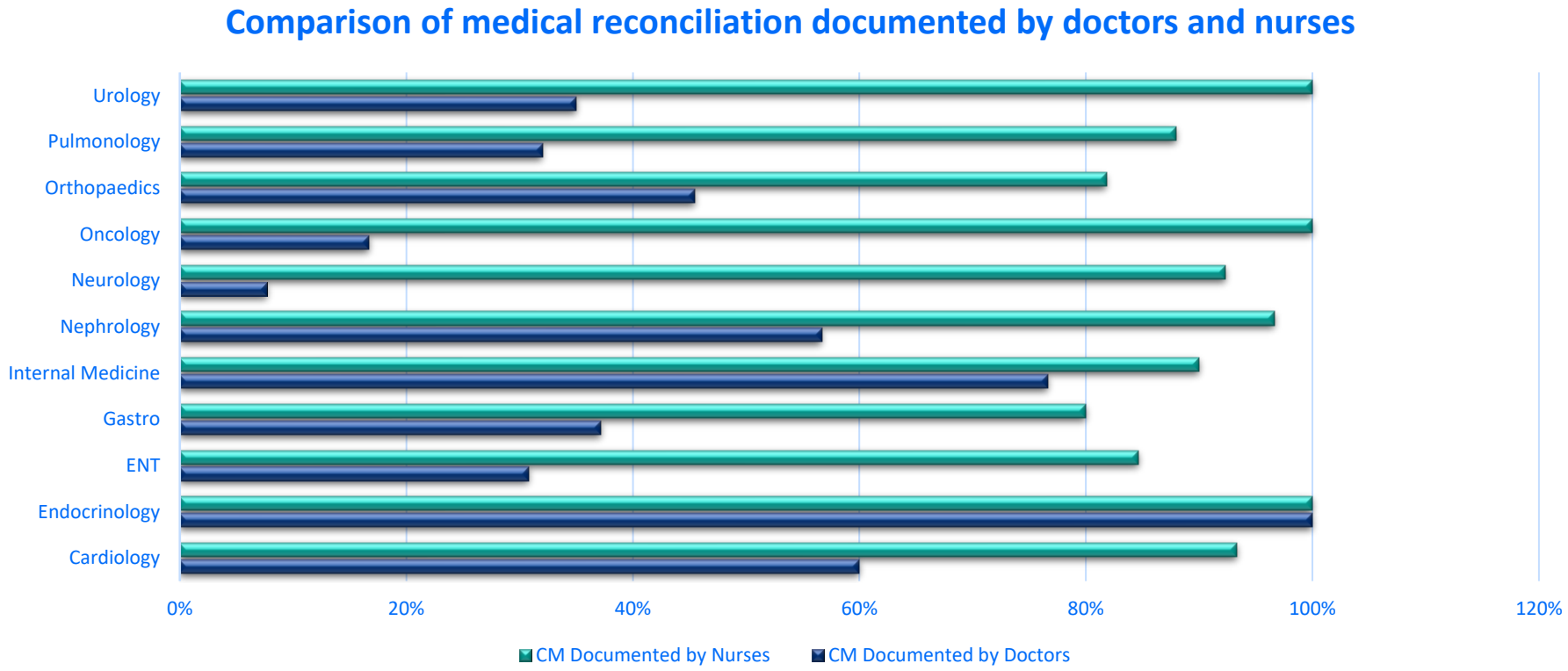
Current Medication documented by healthcare professionals



Key Observation:-

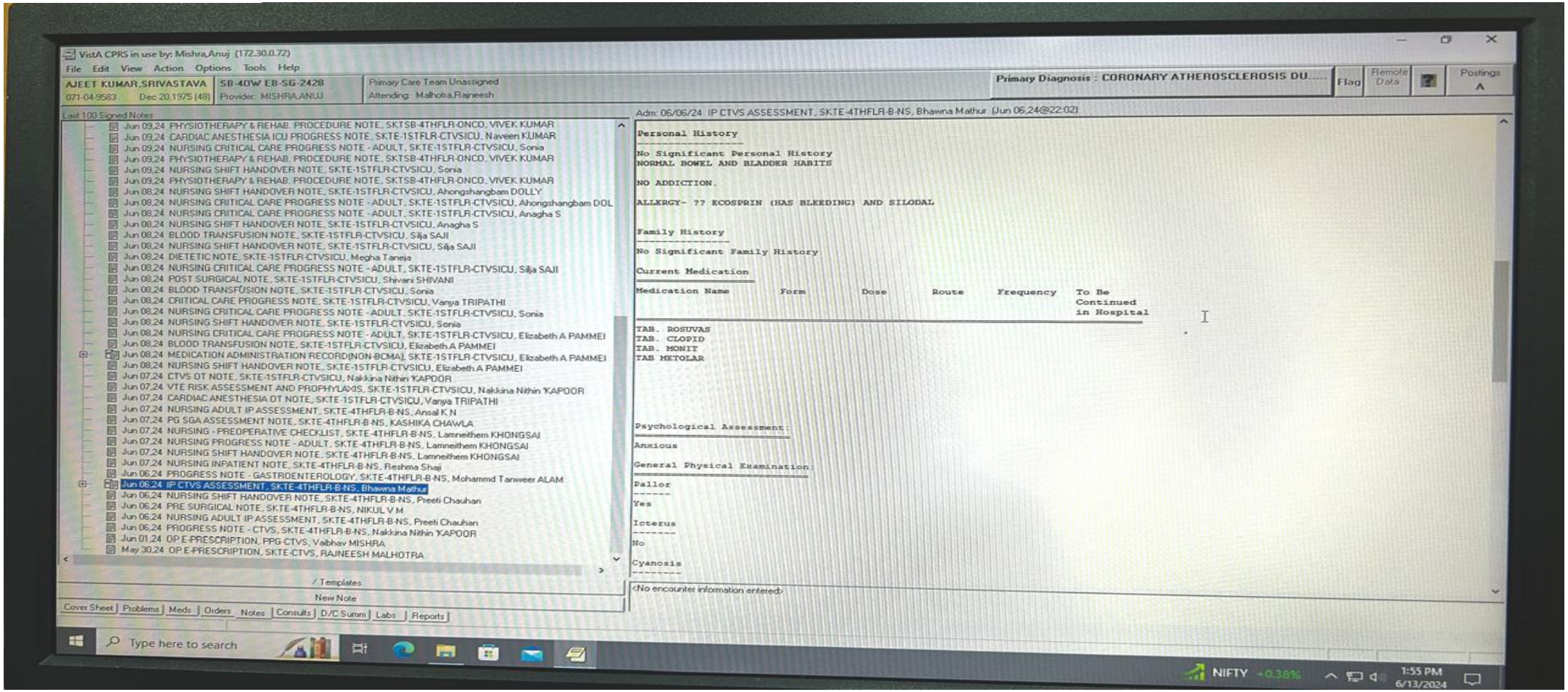
- The documentation of current medication compliance by doctors stands at 56%.
- Nurses have documented current medication compliance at a rate of 91%.

Comparison of medical reconciliation documented by doctors and nurses

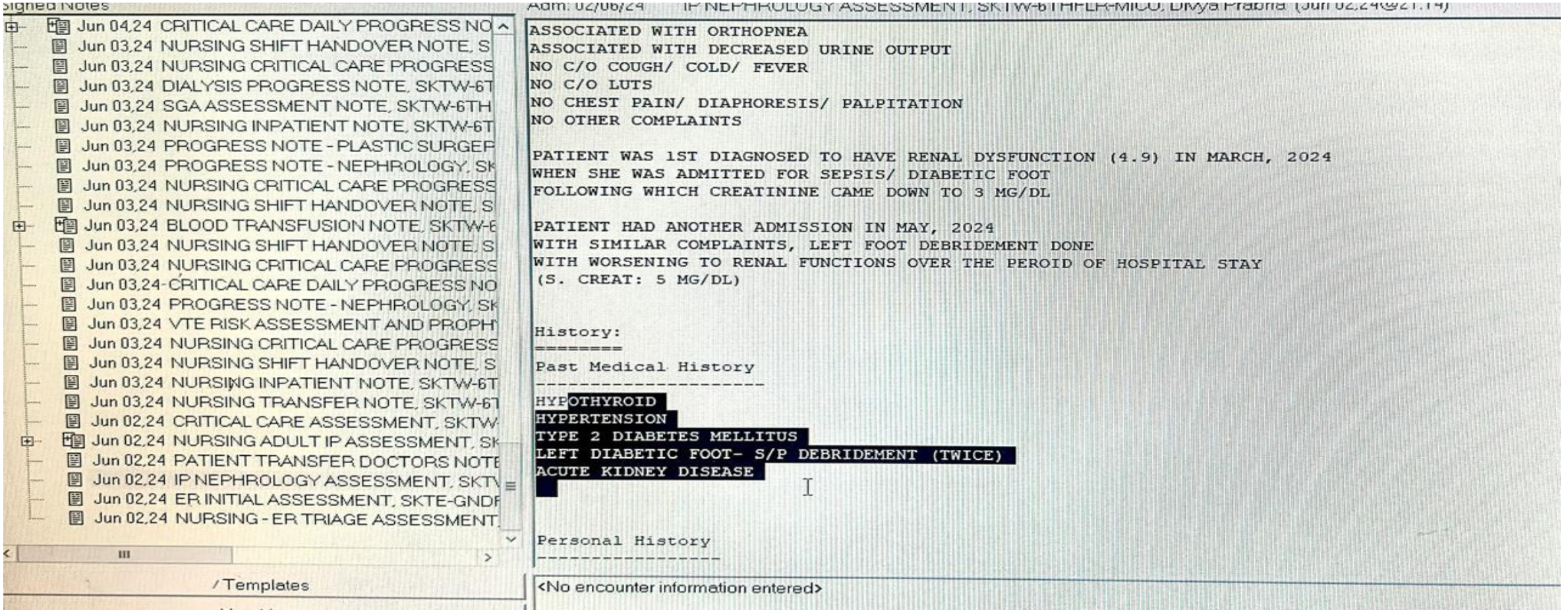


Key Observations:-

- The disparity in documentation is most pronounced in Nephrology, where nurses document 80% of CM while doctors document only 30%.
- Cardiology shows the highest documentation rate by both nurses and doctors, with nurses documenting about 95% and doctors about 55%.
- The smallest gap between nurse and doctor documentation is in Endocrinology, with a difference of about 15%.

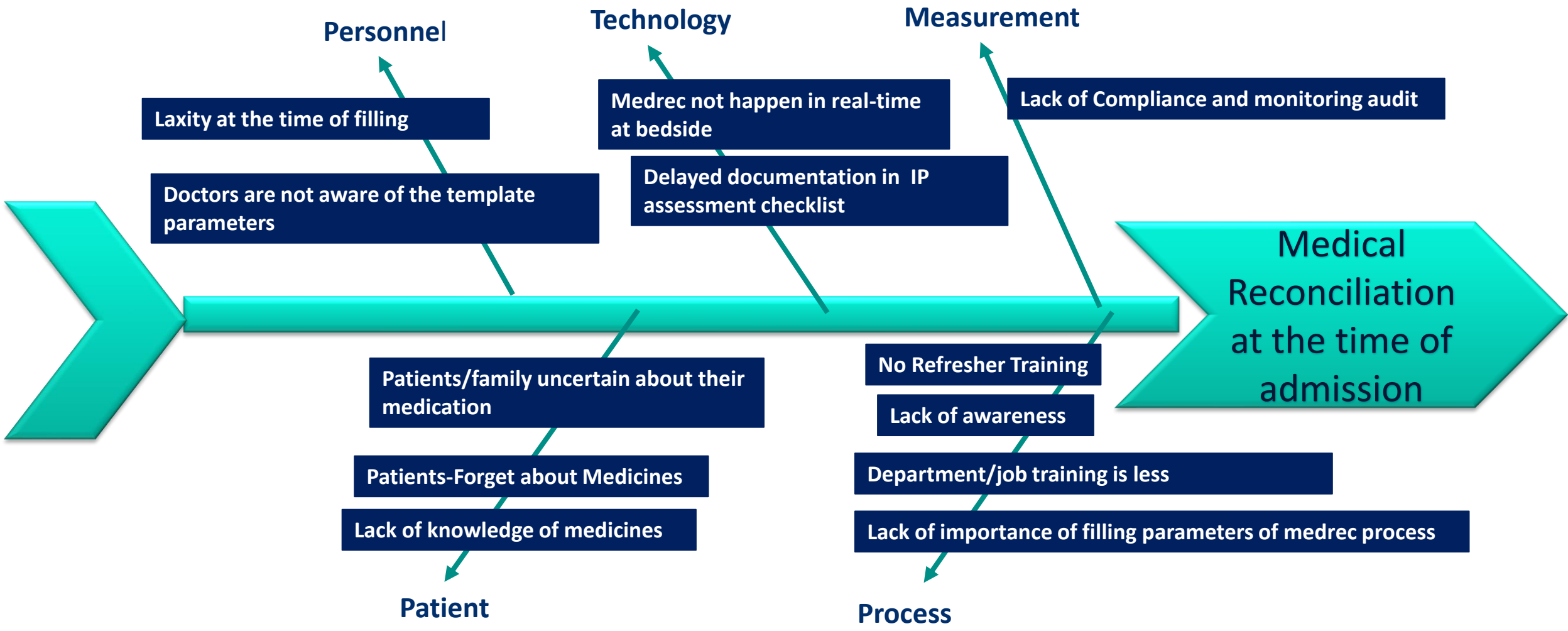


This Image shows the incompleteness of medical reconciliation process – Only drug name is documented without dose, route and frequency.

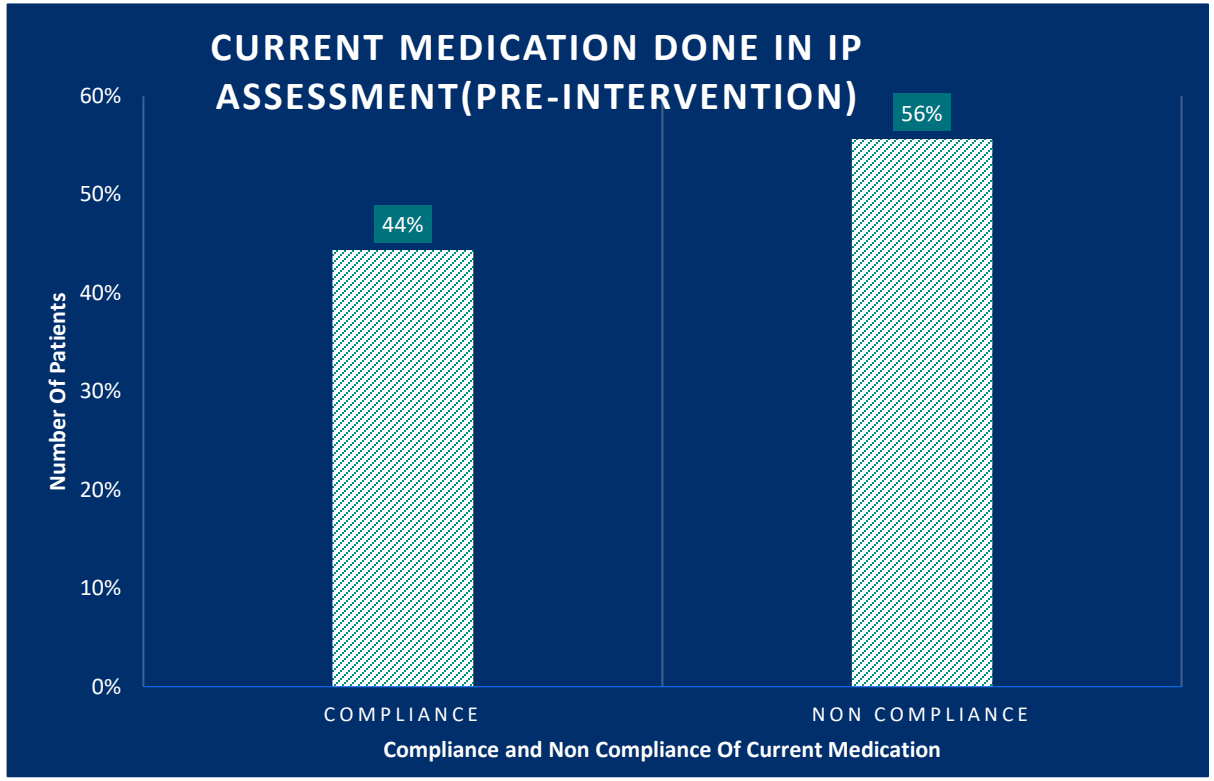


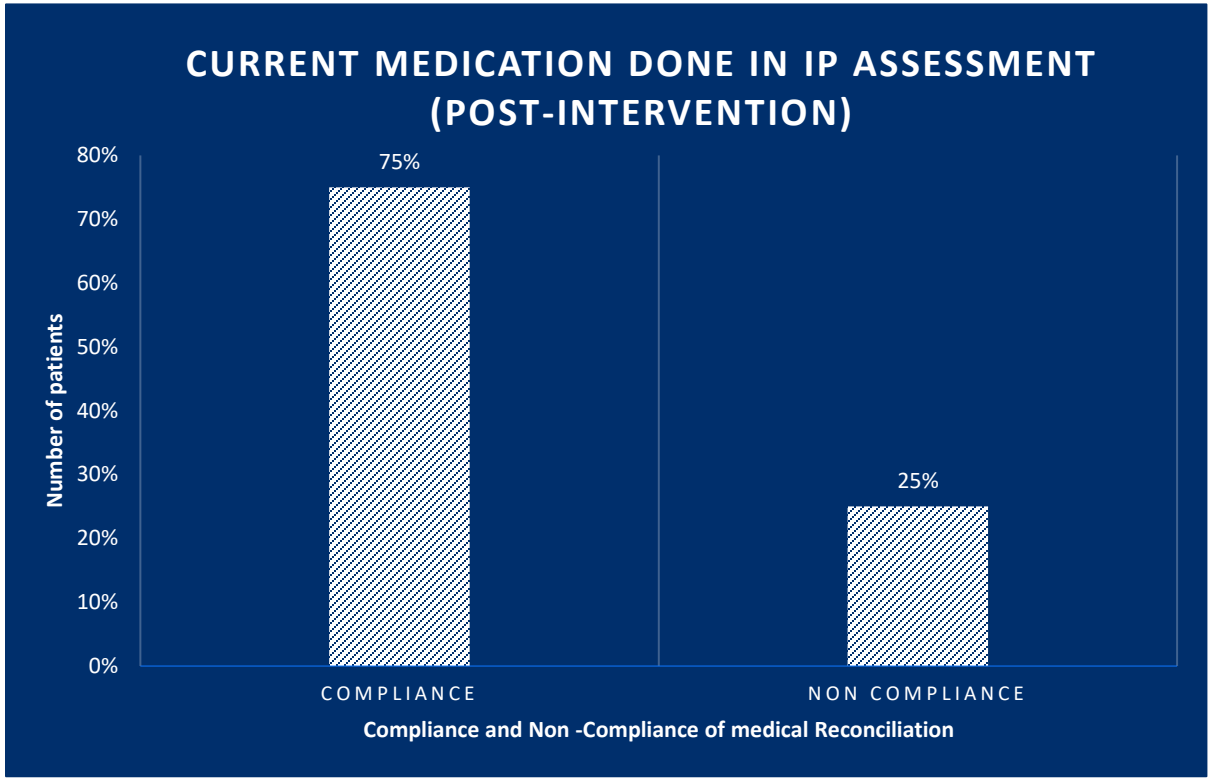
This Image shows the Incompleteness of medical reconciliation process –as only medical history is documented while current medication not documented

Fishbone analysis



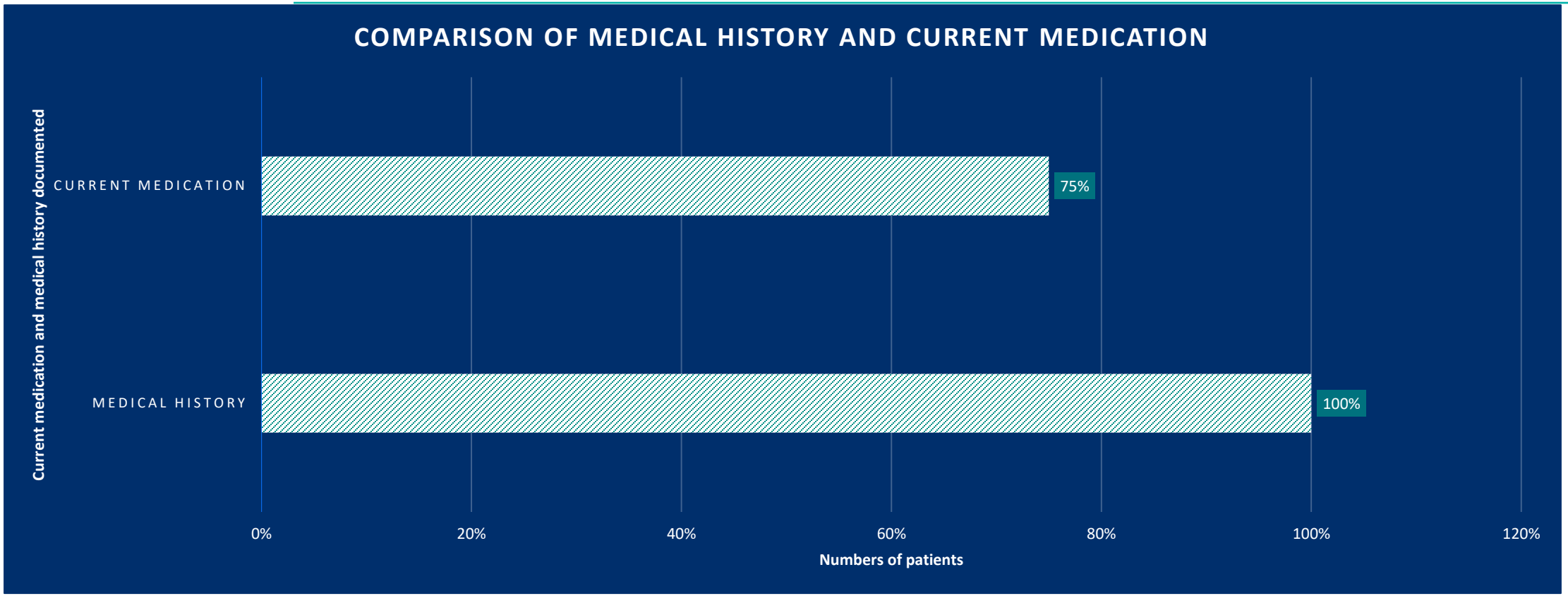
Medication Reconciliation done in pre-intervention and post-intervention





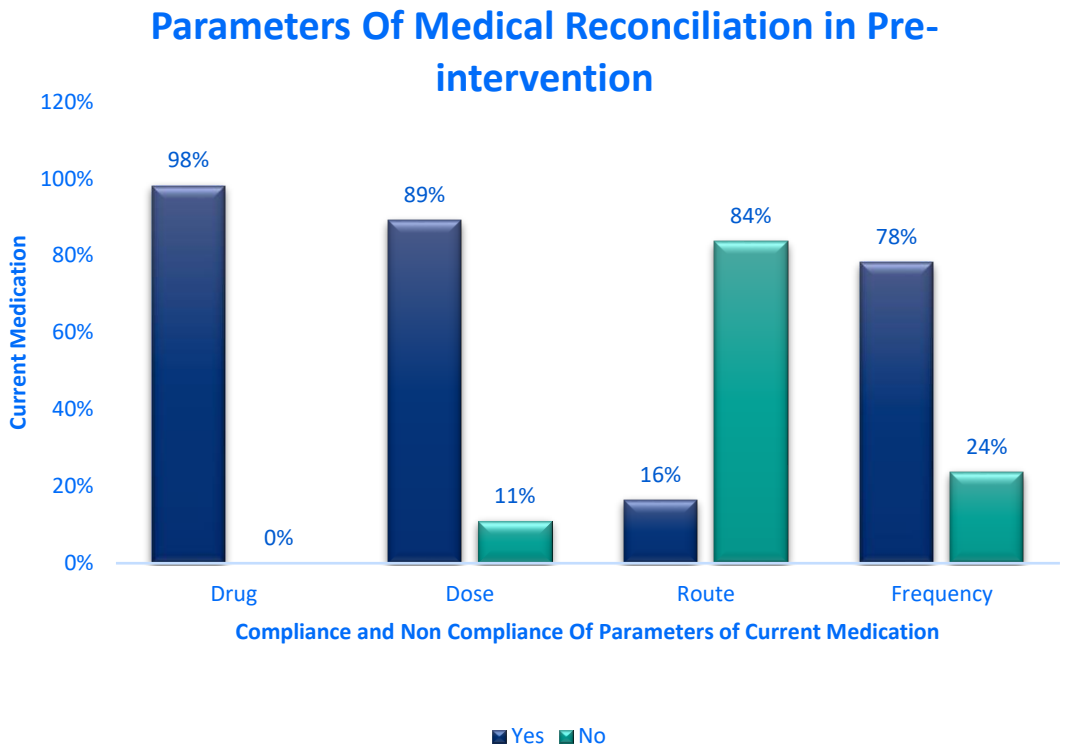
Key Observations:- There is 44% compliance for medical reconciliation in pre-intervention while in post-intervention the compliance increase 75%.

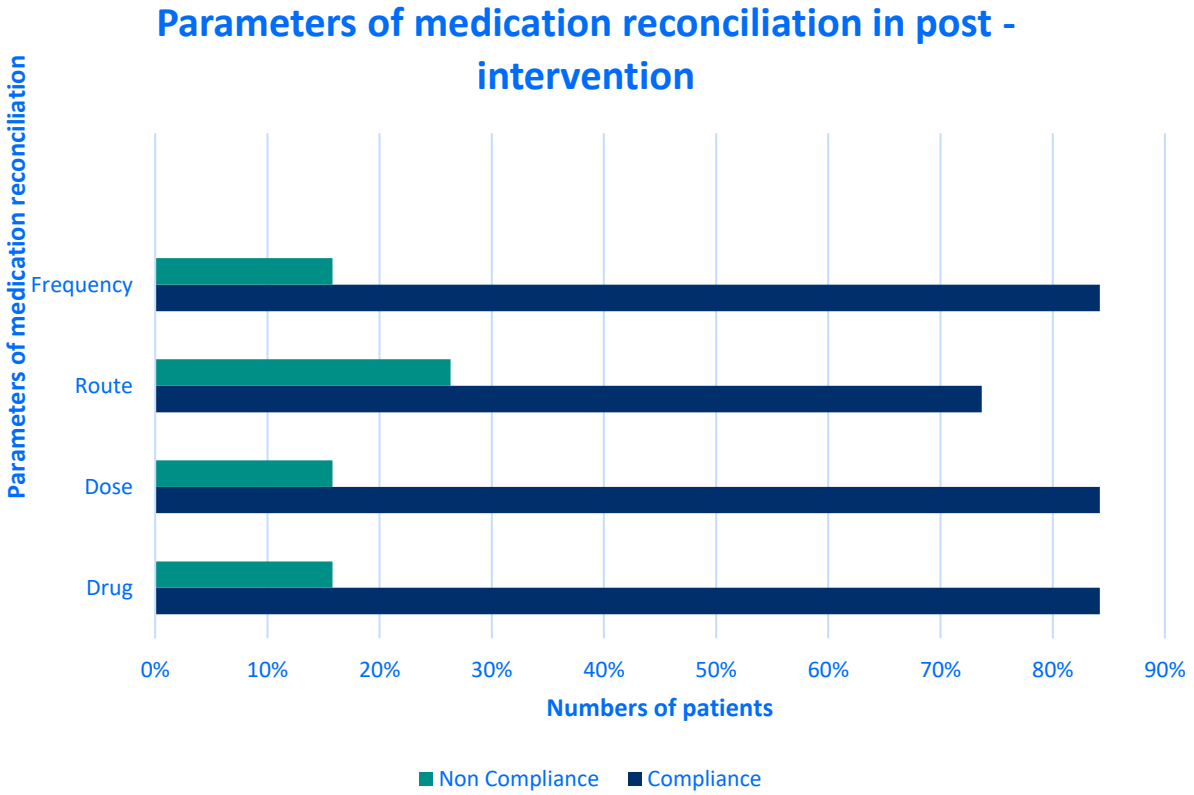
Medical Reconciliation done Post Intervention



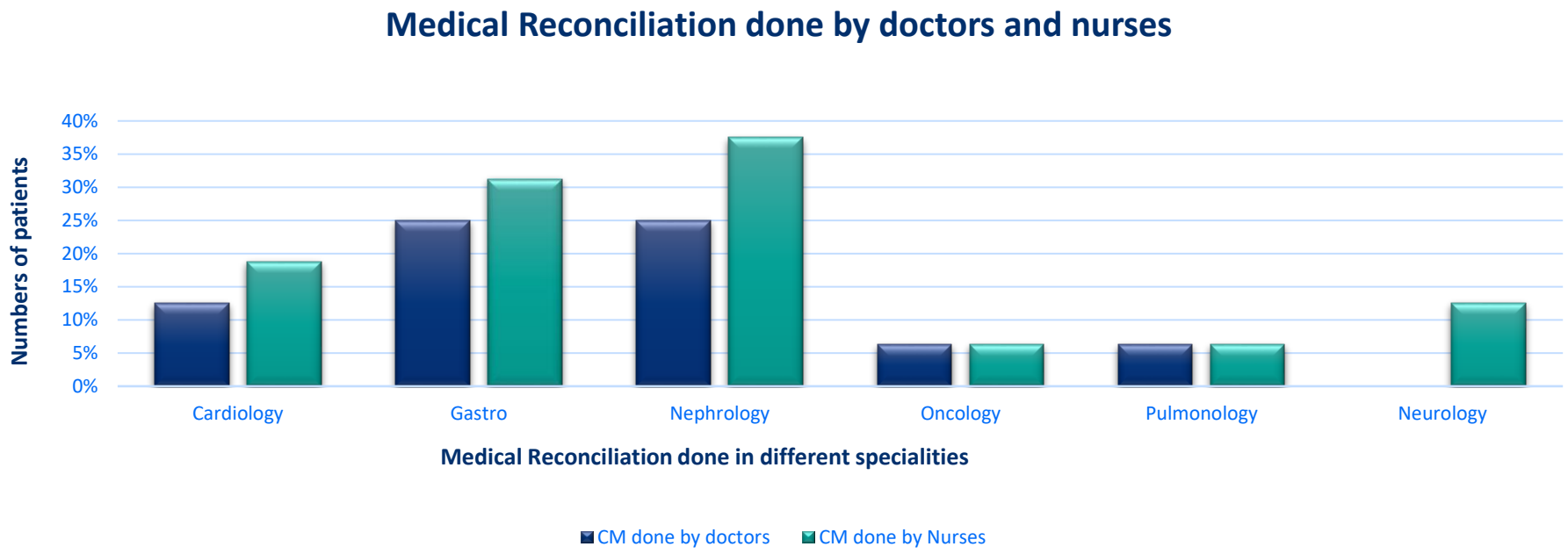
Key Observation:-he chart shows that 100% of patients had their medical history documented, 75% of patients had their current medication documented. This suggests that there is a significant gap in the completeness of current medication documentation compared to medical history documentation..

Parameters of Medical Reconciliation done in pre and Post Intervention





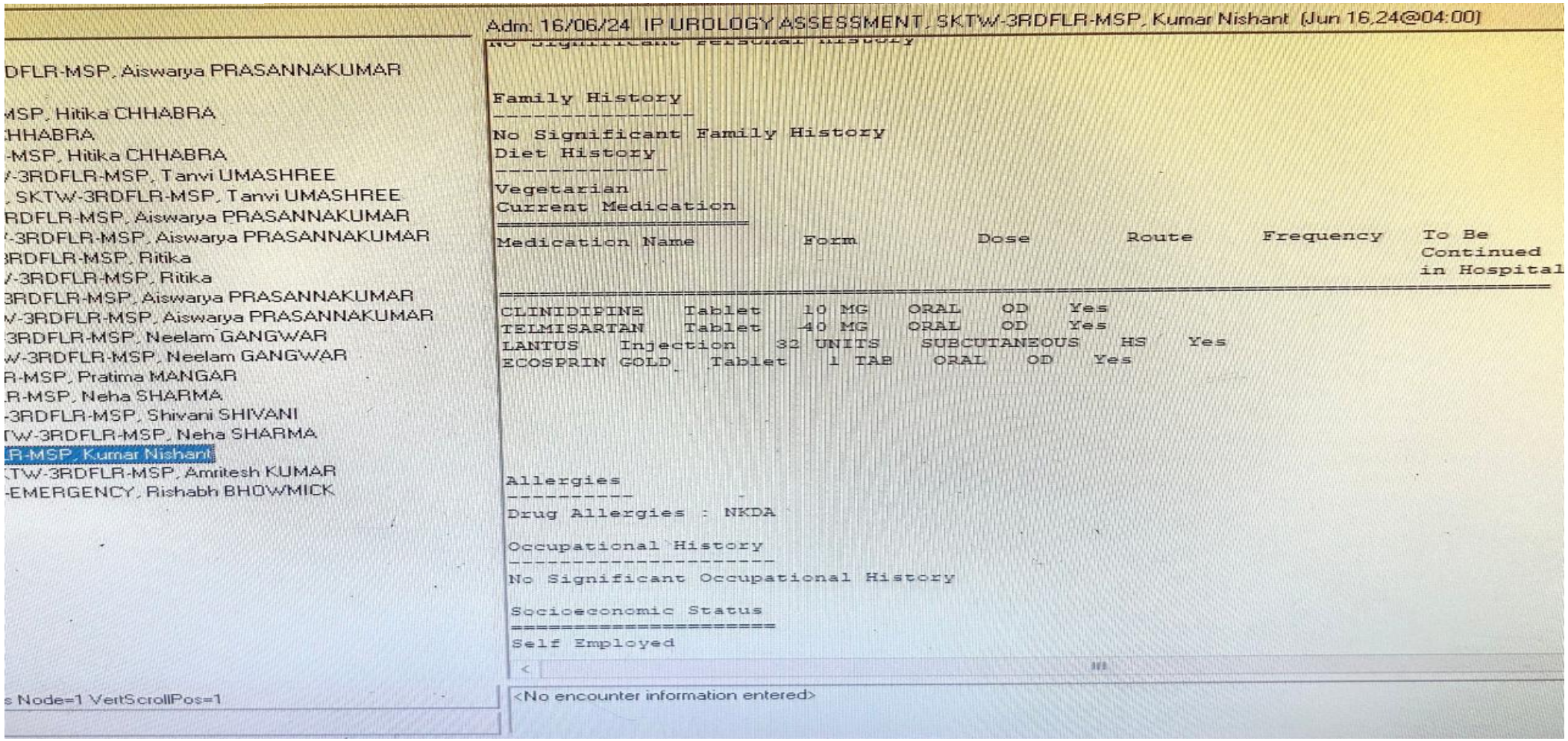
Medical Reconciliation done by doctors and nurses in post- intervention



Key Observation:- In **Cardiology** and **Neurology**, nurses are more actively involved in medical reconciliation than doctors.

Lower reconciliation rates in Oncology and Pulmonology suggest a need for increased focus and resources to improve the process in these specialties.

Medical Reconciliation in post-intervention



This image shows the complete parameters of medication reconciliation in post-intervention

Corrective Action

Development and Utilization of Checklists	Prepare and implement a standardized checklist for the medical reconciliation process.
Informed Healthcare Professionals	Inform floor managers and nurses about the current issues with the incompleteness of the medical reconciliation process across different specialties.
Communication of Patient Identifier	Inform floor managers about the patient identifiers necessary to facilitate and verify the completion of the medical reconciliation process.
Regular audit and monitoring	Implement regular audits to monitor and ensure the completeness of the medical reconciliation process.
Data Analysis for Compliance and Improvement	Analyze audit data to identify compliance and non-compliance in medical reconciliation across different specialties.

General Recommendations

Medical reconciliation in hospitals is a critical process that ensures patient safety by accurately documenting a patient's medication history and ensuring it aligns with current prescriptions during transitions of care.

Interdisciplinary Collaboration

- To ensure comprehensive medication history gathering s reconciliation.
- Feedback mechanisms to address challenges and improve reconciliation practices.

Feedback and Audit Mechanisms

- Regular audits and reviews of medication compliance documentation practices.
- Analyze trends and identify areas for improvement.

Medical Reconciliation done in real-time filling at bed side

- Ensure medical reconciliation done in real-time at bed side across all specialties.
- communicated effectively and consistently .
- Engagement of patients for medical reconciliation

Conclusions

- The quality improvement project aimed to enhance the accuracy of medical reconciliation at the time of admission to improve patient safety and care. This quality improvement project has provided valuable insights into the current state of compliance and areas needing enhancement.
- As per finding, high compliance rates were observed in medical history documentation (96%) and drug name accuracy (98%), significant gaps exist in current medication assessments (44%), route documentation (16%), and frequency documentation (78%) Conversely, a compliance rate of 13% for medication orders highlights that a subset of patients had their medication orders correctly processed. This discrepancy underscores the need for improved processes and protocols to ensure continuity of care and accurate medication management.
- This project highlighted significant disparities in compliance rates across various specialties-High compliance rates (>75%) were observed in Endocrinology (100%) and Internal Medicine (76.7%). However, several specialties exhibited low compliance rates (<50%), including ENT (30.8%), Gastroenterology (37.1%), Neurology (8%), Oncology (16.7%), Pulmonology (33.3%), and Urology (35%). The disparity in documentation is most pronounced in Nephrology, where nurses document 80% of current medications (CM), while doctors document only 30%. Cardiology shows the highest documentation rate by both nurses and doctors.
- **These findings underscore the critical need for targeted interventions to improve medication reconciliation practices, especially in specialties with low compliance rates. Enhanced training, standardized protocols, and better interdisciplinary collaboration are essential to address these discrepancies and ensure accurate and comprehensive medication documentation, thereby improving patient safety and care outcomes.**

References

1-Dombrowski MP, Lawrie K. Twelve-week project to improve medication reconciliation at hospitals in Wellington, New Zealand.
2-Garcia, Crystal, "A QUALITY IMPROVEMENT PROJECT FOR MEDICATION RECONCILIATION" (2021).
3-World Health Organization. Guide to Improving Medication Safety in High-Risk Situations: Medication Reconciliation. Geneva: World Health Organization; 2019

Quality means doing it right when no one is looking.

— Henry