

**ANALYSIS OF PATIENT SAFETY STANDARDS IN NON-COVID
IPD AT THE MISSION HOSPITAL, DURGAPUR**

Dissertation Submitted to



THE IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

In

Hospital & Health Management

(2019-2021)

by

Pratibha Gupta

Under the Supervision and Guidance of

Alok Mathur

2021

**ANALYSIS OF PATIENT SAFETY STANDARDS IN NON-COVID IPD
AT THE MISSION HOSPITAL, DURGAPUR**

by

Pratibha Gupta

**Dissertation submitted in partial fulfillment of the requirement of the
degree**

MBA Hospital and Health Management

Academic year 2019-2021

THE MISSION HOSPITAL, DURGAPUR

DECLARATION BY STUDENT

I hereby declare that this dissertation titled “**Analysis of patient safety standards in Non-Covid IPD at The Mission Hospital, Durgapur.**” is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Pratibha
(Signature)

Dr. Pratibha Gupta

Date : 19/06/21



Ref: TMH/HRD/OG/June -21/23

Date: 21.06.2021

To Whom It May Concern

This is to certify that **Dr. Pratibha Gupta** has done her three months dissertation on "Analysis of patient safety standards in the Non Covid OPD at The Mission Hospital, Durgapur" from 22.03.2021 to 21.06.2021.

During the period of dissertation she has been found sincere.

We wish her a successful future and career ahead.

Ramesh Lall
VP – HR

Dr. Partha Pal
Chief Medical Superintendent

Dr. Partha Pal
Chief Medical Superintendent
The Mission Hospital
Durgapur :- 12 (W.B.)
Regd. No.- 70288 (WBMC)

ABSTRACT

Title: Analysis of Patient Safety Standards in Non-COVID IPD at The Mission Hospital, Durgapur

Study Objectives:

- To assess the compliance of Patient Safety Quality Indicators in non-COVID IPD as per NABH and International Patient Safety Goals.
- To assess the compliance of Patient Safety devices in non-COVIDIPD.

Methodology: This is a study with Quantitative & Qualitative method done in The Mission Hospital, Durgapur from 22nd March to 19th June 2021. The study was a retrospective, Observational & descriptive study and Purposive sampling size was chosen as per Patient Safety Quality Indicators & devices.

Key Results : Patient Safety Quality Indicator includes inpatient fall rate which was 5.85 and 14.13 fall per thousand patient bed days in the month of November and March. Catheter days had been exceeded in the month of October with 2.32 cauti per thousand catheter days and 2.1 cauti per thousand catheter days in the month of February whereas pressure ulcer rate was highest at 10.68 per thousand patient bed days in the month of October followed by 5.29 per thousand patient bed days in the month of February. Hand Hygiene overall data revealed 374 compliance & 163 non-compliance in the month of April and 374 compliance and 163 non-compliance in the month of May. Prescription audit in the name of drug (clear & legible) depicts 28.0% & 26.7% non-compliance in the month of April & May whereas improper unit of dose & measure depicts 34.7% & 36.0% non-compliance in the month of April & May. 10% compliance and 90% non-compliance with cart lock & key followed by 60% compliance and 40% non-compliance in the expired drugs in the cart and 80% compliance and 20% non-compliance with the documentation of crash cart trolley whereas 8% compliance and 92% non-compliance with the availability of white color patient Identification band.

Conclusion:

Patient safety is considered as the basic key value as per WHO in 2005. Healthcare organizations emphasize on continuous improvement for the patient safety in the organization environment. Training regarding education & knowledge should be utmost preference to magnify the staff understanding. It is the responsibility of the hospital to sensitize the staff regarding the patient safety and train them.

ACKNOWLEDGEMENT

At the outset, I would like to articulate this project as small journey which was a remarkable learning experience to me. The successful completion of this project is only because of the extraordinary support, guidance, counselling & motivation from my respectable staff, of IIHMR University and my organization The Mission Hospital, Durgapur.

This journey could not be completed without the support of my family and friends. I express my deep gratitude to Alok Mathur Sir (Professor) & mentor to this project for the support provided to me, I have imparted knowledge on the avenues which this project has opened and explored.

I extend my gratitude's to my organization staff, my colleagues & friends for their encouragement, support, guidance & assistance for undergoing training and for preparing the project report.

Contents

Chapter	Particulars	Page Number
1.	Introduction	11-13
2.	Review of Literature	14-16
3.	Methodology	17-18
4.	Results	19-30
5.	Discussions & Recommendations	31-35
6.	Conclusion	36
7.	References	34-35

List of Figures

Sl.No.	Figure Number	Figure titles	Page Number
1	Fig. 4.1.1	Inpatient Fall rate	19
2	Fig 4.1.2	Cauti Infection Rate	20
3	Fig 4.1.3-1	Hospital associated Pressure Ulcer	21
4	Fig 4.1.3-2	Location and stage wise Pressure Ulcer	21
5	Fig 4.1.4-1	Hand Hygiene Compliance of overall participants	22
6	Fig 4.1.4-2	Hand Hygiene compliance of individual participants	23
7	Fig 4.1.5-1	Name of drug (clear & legible) in the medicine card	24
8	Fig 4.1.5-2	Name of drug in block letters in the medicine card	25
9	Fig 4.1.5-3	Numerical dose & unit of measure run together	25
10	Fig. 4.1.5-4	Error prone drug abbreviations in the medicine card	26
11	Fig 4.1.5-5	Route, dose & frequency administered in the medication card	26
12	Fig. 4.1.5-6	Prescribers signed & stamped in the medicine card	27
13	Fig. 4.2.1-1	Compliance & Non-compliance of Crash Cart trolley	28
14	Fig. 4.2.1-2	Compliance & Non-compliance of Crash Cart trolley drawer wise	29
15	Fig 4.2.2	Patient's Identification wrist band	29
16	Fig 4.2.3	Availability of Nursing Call bell	30
17	Fig. 4.2.4	Electrical board near Patient beds	30
18	Fig. 5.1	Ishikawa diagram for Inpatient Falls	31
19	Fig. 5.2	Ishikawa diagram for Hand-Hygiene non-compliance	33

List of Tables

Sl.No.	Figure Number	Figure titles	Page Number
1	Table 4.1.1	Inpatient Fall Rate	15
2	Table 4.1.2	Cauti Infection Rate	16
3	Table 4.1.3	Hospital associated Pressure Ulcer rate	17
4	Table 4.1.4-1	Percentage Compliance of Hand hygiene of participants	19
5	Table 4.1.4-2	Demographic characteristics of participants	20
6	Table 4.1.4-3	Reasons for not following Hand Hygiene	21

List of Abbreviations

IPD	Inpatient Department
IOM	Institute of Medicine
NABH	National Accreditation board for hospital and health care providers
JCI	Joint Commission of International
ISQUA	International Society for Quality in Health Care
USA	United States of America
IPSG	International Patient safety Goals
HH	Hand Hygiene
WHO	World Health Organization
CAUTI	Catheter Associated Urinary tract Infection
GDA	General Duty Assistant
OPD	Out-patient department
CCU	Coronary care Unit
MICU	Medical Intensive care Unit
ITU	Intra-thoracic Unit
HDU	High dependency Unit

CHAPTER - 1

INTRODUCTION

Patient safeties in the hospitals are set of standards based on the collection of conditions that are essential for the implementation for the safety of the patient. Mishap & adversity happen in the medical management have been validated as a crucial reason of morbidity and, mortality of patient in many hospitals. A process estimation tool for the safety of patient has developed to tackle and identify the safety level of the patient.

Patients come to healthcare facility or providers to get rid of their suffering or illness. The standards layout substructure for continuous improvement and assurance of quality and also patient safety & quality care being the focal point followed by the standards in the hospitals. The standards sound continual surveillance of the events including adverse and sentinel and correctional plan of action in raising the functions & value of quality at all magnitude.

Patient Safety is defined as –

It is a discipline in the health care sector that applies safety science methods toward the goal of achieving a trustworthy system of health care delivery. Patient safety is also an attribute of health care systems; it minimizes the incidence and impact of, and maximizes recovery from, adverse events. [1]

Patient safety definition has appeared from quality movement of the health care to more tangible key components with varied approached. IOM defined the safety of the Patient as “the prevention of harm to patients.” Accent is laid on care delivery of system that (1) to avert mistakes; (2) learning from the fault that do occur; and (3) safety culture is laid on every individual which are segment of the health care system including organizations, patients and health professionals. Practices for Patient safety have been defined as “those that reduce the risk of adverse events related to exposure to medical care across a range of diagnoses or conditions.” [2]

Quality is an essential catchphrase for the healthcare providers of present generation. The majority of healthcare providers and hospitals are classified and rated based on their organizational quality and performance. [3]

Patient safety origin & concepts :-Hippocrates coined the phrase "first, do no harm. Hippocratic Oath – I will prescribe regimens for the good of my patients according to my ability and my judgment and “never do harm” to anyone.

Types of Errors :-

- 1) Adverse Health care Events
- 2) Health care Near Miss Events
- 3) Adverse Drug reaction
- 4) Medication Error
- 5) Sentinel Error

History of accreditation:

The word accreditation refers to the procedure of systematically evaluating health center against set norms. The procedure of accreditation originated in USA & developed a protocol in 1917 by the American college. The Surgeons of American College flourish a layout for “minimal hospitals standards” & recognize appropriate hospitals for the training of surgical which grew into a multidisciplinary standardization initiative that culminated in the establishment of the hospital accreditation by the Joint commission which is now familiar with Joint Commission on Accreditation of Healthcare Organizations.

In 1998, the Joint Commission International Accreditation (JCI) was founded in the United States to meet the growing demand for accreditation. The standards of JCI accreditations are built on consensus standards by the health professionals from around the world. ISQua (International Society for Quality in Health Care) was set up as an umbrella organization to deliver certifications to other accredited organization. In 1999, a program launched known as Agenda for Leadership in Programs in Healthcare Accreditation to administer international standards of healthcare to provide services to varied accreditation organization.

In the year 2006, NABH was founded and was established to design and manage healthcare organization through accredited program. NABH is assiduous to upgrade healthcare services in terms of development & quality through different mode of technique & drive to all inhabitants in our country to amplify the strive health care professionals to fulfill the needs at various magnitude. It exists as an institutional member as well as standards set have been certified & approved by ISQua accreditation

council. So the global standards and benchmarks set by ISQua are in NABH standards alignment & accredited organizations have international recognition.[3]

JCI (Joint Commission International) in the year 2006 developed IPSP (International Patient safety Goals).Conformity of IPSP has been evaluated in JCI approved hospital since January 2006.JCI endorse focused rational approach to fulfill IPSP standards to help out hospital.

- Goal 1 : Identify patients correctly.
- Goal 2 : Improve effective communication.
- Goal 3 : Improve the safety of high-alert medications.
- Goal 4 : Ensure safe surgery.
- Goal 5 : Reduce the risk of health care-associated infections.
- Goal 6 : Reduce the risk of patient harm resulting from falls.

CHAPTER - 2

REVIEW OF LITERATURE:-

Prescription audit is an active process that checks for improvement in quality of health care. An audit is defined as “the review and the evaluation of the health-care procedures and documentation to compare the quality of care which is provided, with the accepted standards. This study was conducted in a tertiary care hospital in Kolkata, Eastern India. This prospective, cross-sectional study was conducted in various indoor patient departments of a 400-bed tertiary care hospital in Kolkata. Patients receiving medications during their treatment visits were documented. Six thousand four hundred and six medicine cards (6406) of inpatients were prospectively analyzed for the duration of 6 months. The data produced from the study of various departments showed that drug allergy in the 1st month was reported to be 62.95%, whereas in the 6th month, it was 70.44%; route of administration in the 1st month was 100%, and in the 6th month, it was found to be 99.55%; dose documentation in the 1st month was 100%, whereas in the 6th month, it was 99.50%; frequency documentation in the 1st month was 100%, and in the 6th month, it was 98.6%; diagnosis documentation in the 1st month was 75.53%, whereas in the 6th month, it was 72.4%; avoidance of error-prone abbreviation in the 1st month was 88.42%, and in the 6th month, it was 91.82%; prescribing date documentation in the 1st month was 96.55%, whereas in the 6th month it was 97.85%; prescriber signature in the 1st month was 99.91%, whereas in the 6th month, it was 99.81%; compliance rate on therapeutic duplication in the 1st month was 100%, and in the 6th month also, it was found to be 100%; and drug written in capital letters in the 1st month was 93.73%, and in the 6th month, it was 93.78%. [4]

A pressure ulcer is an ischemic cutaneous lesion between a hard plane and bony prominence induced by compression of the soft tissues, which is typically seen in patients who undergo resuscitation or requiring long-term institutional care. Pressure ulcers have a wide range of incidences depending on clinical setting. A longitudinal & observational study at the Hospital of Sahloul was conducted in the Anesthesia-Resuscitation departments, Internal Medicine, Aesthetic and Restorative surgery. An overall 150 patients were acceptable for this study and the mean age was 46.1 ± 20.2 years and sex ratio was 1.94. In this study, 29 patients suffered from pressure ulcers, representing 19.3% (95% CI: [13-25.3]) incidence of patient. Furthermore, patients had 56 occurrence of pressure ulcers, resulting in a 37% (95% CI: [29.3-44.7]) incidence

of pressure ulcer and incidence density of 2.3 occurrence per 1000 days of hospitalization. The heels were the most recurring site followed by the buttocks. [5]

In a similar studies it mentioned that falls are prevalent among hospital inpatient, with estimated range from 2.3 to 7 per 1000 patient days. 1 to 4 inpatient falls contribute for about 30% of all falls, with 4% to 6% of those ending in serious damage. Fractures, subdural hematomas, severe bleeding and even death are some of the major fall-related injuries. Injuries which occurred due to falls escalated health-care costs. This research was conducted at Barnes-Jewish in St. Louis, Mo Hospital, a 1,300-bed academic teaching hospital allied with Washington University School of Medicine. A prospective study of 200 patient falls took place. Patient falls were identified by the data collectors after they were reported by hospital staff into the hospital's secure online adverse event reporting system. In 2002, 3.29 falls per thousand patient days were reported at Hospital. The rate of falls during the period of study was 3.38 falls per 1,000 patient-days. [6]

The other studies revealed that the patient's identification serves two objectives – firstly to identify the individual safely being the authentic recipient of the method and second, to ensure that the procedure is effective in meeting the patient's needs. This is a research with a quantitative, descriptive and transversal approach, carried in Porto Alegre in the state of Rio Grande do Sul, Brazil, in a teaching hospital with 841 beds. The data was gathered in total 19 department including mother & child, clinical, surgical and pediatric inpatient units. The 385 samples were chosen with the proportionality of the bed. There were 364 (98.64%) wristbands with two identifiers were identified and 5 (1.36%) wristbands had three identifiers among 369 patients who has the wristband. In terms of identifiers, 363 (98.38%) had, the name and registration number as the identifiers, 1 (0.27%) had, the name and the bed number, four (1.08%) wristbands had name, registration number, and bed number and in addition 1 (0.27%) had the name, registration number, and medical team. The pediatric inpatient unit has 6 (37.5%) of the 16 patients without a wristband. A further four patients (25%) were having inpatient treatment in the psychiatric ward without wristbands, with the patients themselves reporting that they did not have one because they did not want to wear one. [7]

Utilization of emergency trolley in the general ward. To assess the usage of eight emergency trolleys in a non-public hospital (by reason and drug users). Based on trolley records of daily emergency, manually related search linked the patient medical records

to determine the reason for using emergency trolleys. Trolley used in the inpatient unit were with 361 identified reasons, and not each of them for emergency conditions (70.64%), and 9.97% were unaccounted. The most prevalent emergency situation was cardiac arrest, while shock maintenance care occur the most common non-emergency reason. In certain cases, the trolley would open without the consumption of the medicine or without being documented. Epinephrine was the most commonly used medicine in emergency situations, whereas nor-epinephrine was used in non-emergency situations. [8]

In a similar studies it is found that hand hygiene compliance must be efficacious and plays a crucial role in enhancing safety from the patient & provider prospect and in averting HAI (health-care associated infections). The study was a cross-sectional and observational using direct observation technique. HH data was collected by a single observer. During this analysis, hand hygiene conformity was followed as per WHO guidelines for all 5 moments & 1500 Hand hygiene opportunities were noted down. In total compliance in line with WHO Guidelines was 78%. Cohesion rate of Nurses was 63%; allied staff cohesion rate was 86.5%. Conformity rate was 93% after patient contact versus 63% before patient contact. Before aseptic procedures conformity rate was at lowest i.e. 39% of the nurses. The certainty that diseases averted by hand washing, ideal time duration of hand hygiene, and minimization of HAI and 92% staff were aware of it. [9]

Catheter-associated urinary tract infections (CAUTI) are a frequent and significant healthcare associated infection. Despite multitude efforts to diminish the event of CAUTI, there is still a gap in the research about risk factors of CAUTI, particularly effect of catheter stay-time on CAUTI development and patient co-morbidities associated with it. Retrospective cohort study of all catheterized patients from the year 2012 to 2016, including those who had & those who did not had being the exposure variable is Indwelling urinary catheterization. As the participants were exposed to number of time so the variable is interval. The study included 47926 patients had underwent 61047 catheterizations, of which 861 (1.41%) of them resulting in a CAUTI. CAUTI rates increased randomly with an added day of catheterization; CAUTI-free survival was 97.3% (CI: 97.1 to 97.6) at 10 days, 88.2% (CI: 86.9 to 89.5) at 30 days and 71.8% (CI: 66.3 to 77.8) at 60 days. This translated to an instantaneous HR of. 49%–1.65% in the 10–60 day time range. [10]

CHAPTER - 3

METHODOLOGY -

RESEARCH QUESTIONS

- a) What are the Patient Safety Quality Indicators in non-COVID IPD?
- b) What are the Patient Safety Devices in non-COVID IPD?

OBJECTIVES

- To assess the compliance of Patient Safety Quality Indicators in non-COVID IPD as per NABH and International Patient Safety Goals.
- To assess the compliance of Patient Safety devices in non-COVID IPD.

Patient Safety Quality Indicators are–

- Catheter associated Urinary tract Infection (CAUTI)
- Patient Fall
- Pressure Bed sores
- Prescription error
- Hand Hygiene Compliance

Patient safety devices are -

- Patient Identification wrist band
- Crash cart trolley
- Nurse call bell
- Electrical board near Patient beds

Method – Quantitative & Qualitative

Study design – Retrospective, Observational and descriptive study

Duration of Study - 22nd March 2021 to 19th June 2021 (3 months)

Study Setting -The Mission Hospital, Durgapur

Sample Size - Purposive sampling

Inclusion Criteria:

- Non-COVID General wards are included
- Open file audit for prescription.
- Doctors, Nurses, Physiotherapist & GDA staff of non-COVID IPD for hand hygiene
- Patient safety devices of general wards are included

Exclusion Criteria:

- COVID Isolation Ward, OPD, CCU, MICU, ITU, HDU & Pediatric ward are excluded
- Closed file audit is excluded.
- Patient safety devices of OPD, CCU, MICU, ITU, HDU & Pediatric ward are excluded

Objectives	Samples	Data Collection	Tool	Technique
Objective 1	• CAUTI • Patient fall • Pressure Bed sores • IPD files of prescription error • Hand Hygiene Compliance	• Secondary data • Secondary data • Secondary data • Primary data • Primary data	Checklist Checklist	Survey through ObservationObservation
Objective 2	• Patient Id band • Crash Cart trolley • Nurse Call-bell • Electrical board near Patient beds	• Primary data • Primary data • Primary data • Primary data	Checklist Checklist Checklist Checklist	Observation Observation Observation Observation

CHAPTER - 4

RESULTS:-

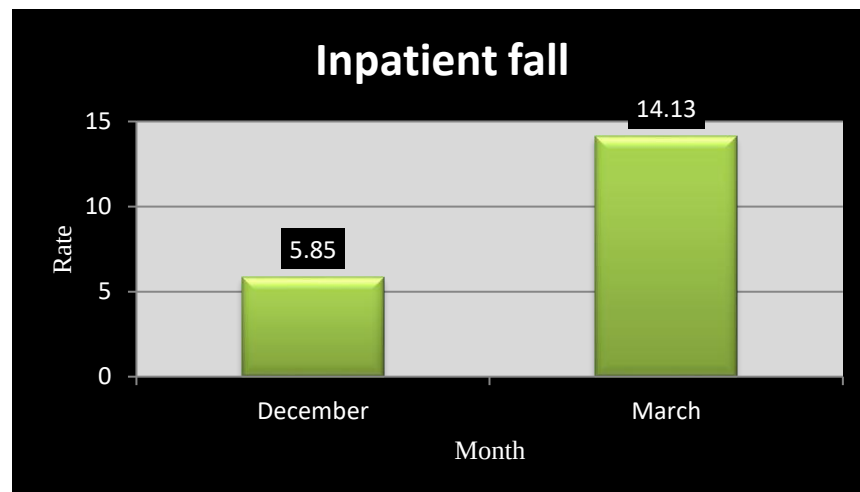
(4.1) Patient Safety Quality Indicators

(4.1.1) Inpatient Fall:

Table 4.2.1: Inpatient Fall Rate

Month	Formula	Rate
December	$3 / 512 * 1000$	5.85
March	$2 / 583 * 1000$	14.13

Fig4.1.1 depicts that 5.85 fall per thousand patient bed days occurred in the month of December and 14.13 fall per thousand patient bed days occurred in the month of March.



(4.1.2) Catheter Associated Urinary Tract Infection (CAUTI)rate:

Table 4.1.2 :Cauti Infection rate

Month	Formula	Rate
October	$3/1288 * 1000$	2.32
November	$2/2192 * 1000$	0.91
December	$3/1852 * 1000$	1.61
January	$2/1956 * 1000$	1.02
February	$4/1902 * 1000$	2.10
March	$3/2682 * 1000$	1.11

The total study population was 3487 and 11872 had catheter days of which 2.32 cauti per thousand catheter days infection occurred in the month of October whereas 0.91cauti per thousand catheter days occurred in the month of November, 1.61 occurred in the month of December, 1.02 occurred in the month of January, 2.10 occurred in the month of February, 1.11 occurred in the month of march with a benchmarking of 2.0 for all the month.

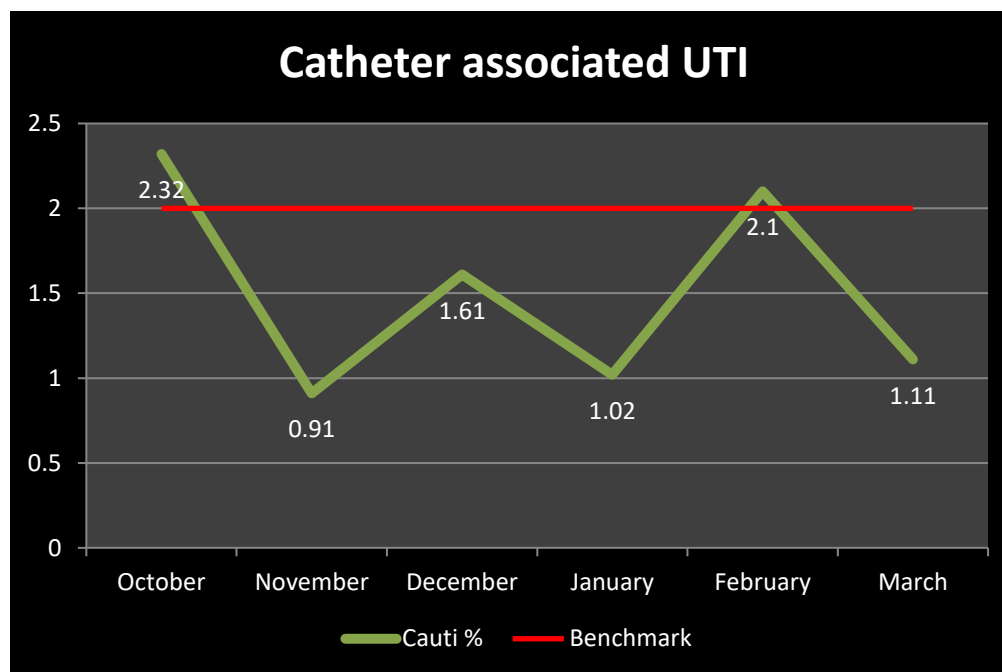


Fig 4.1.2 :Cauti Infection Rate

(4.1.3) Hospital associated Pressure Ulcer rate :

Table 4.1.3 : Hospital associated Pressure Ulcer rate

Month	Formula	Rate
October	$5 / 468 * 1000$	10.68
November	$2 / 536 * 1000$	3.73
December	$2 / 512 * 1000$	3.90
January	$2 / 632 * 1000$	3.16
February	$4 / 756 * 1000$	5.29
March	$2 / 583 * 1000$	3.43

Fig.4.1.3-1 depicts that 10.68 pressure ulcer per thousand patient bed days occurred in the month of October whereas 3.73 per thousand patient bed days in the month of November, 3.9 per thousand patient bed days in the month of December, 3.16 per thousand patient bed days in the month of January, 5.29 per thousand patient bed days in the month of February, 3.43 per thousand patient bed days in the month of March.

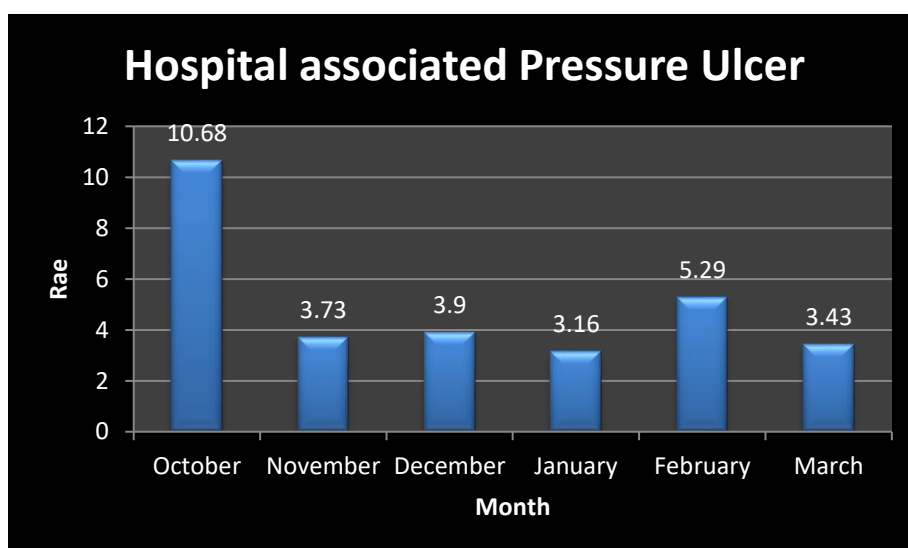


Fig 4.1.3-1 Hospital associated Pressure Ulcer

Fig.4.1.3-2 depicts that Stage 1 is the most common occurring ulcer followed by stage 2 while none of the patient suffered from stage 3 and stage 4 ulcer while location wise left buttock followed by both buttock and sacrum region is the most common affected area in Stage 1 while right buttock followed by sacrum region is the most affected area in the stage 2.

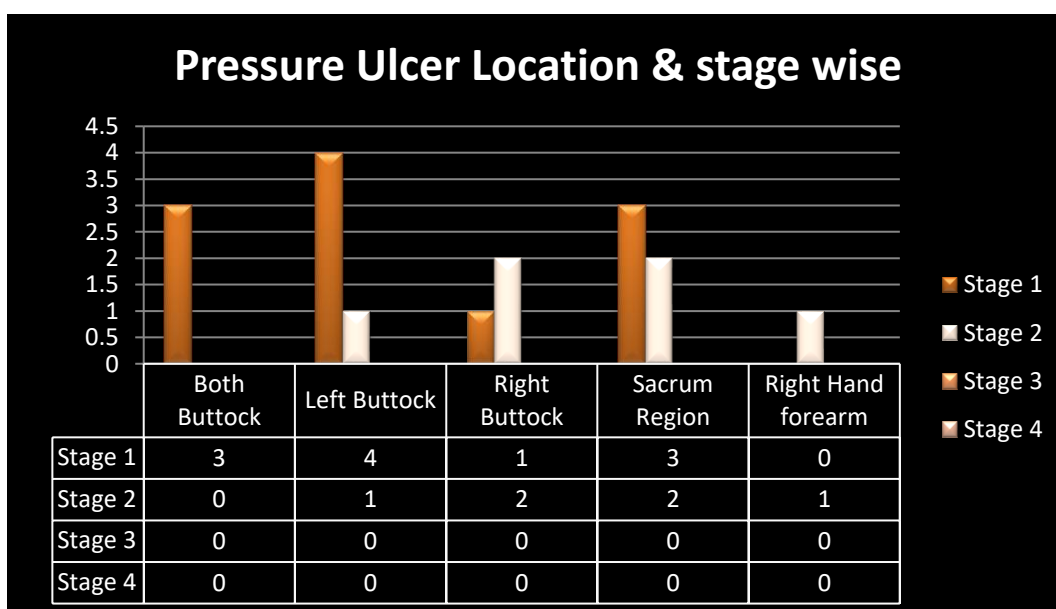


Fig 4.1.3-2 Location and stage wise Pressure Ulcer

(4.1.4) Hand Hygiene Compliance:-

The hand hygiene data was collected with the help of checklist & observational technique was implied for the collection of data. Fig. 4.1.4-1 depicts that the overall opportunity in the month of April is 537 out of which 374 is the compliance and 163 is the non-compliance whereas 530 is the total opportunity out of which 352 is the compliance and 178 is the non-compliance.

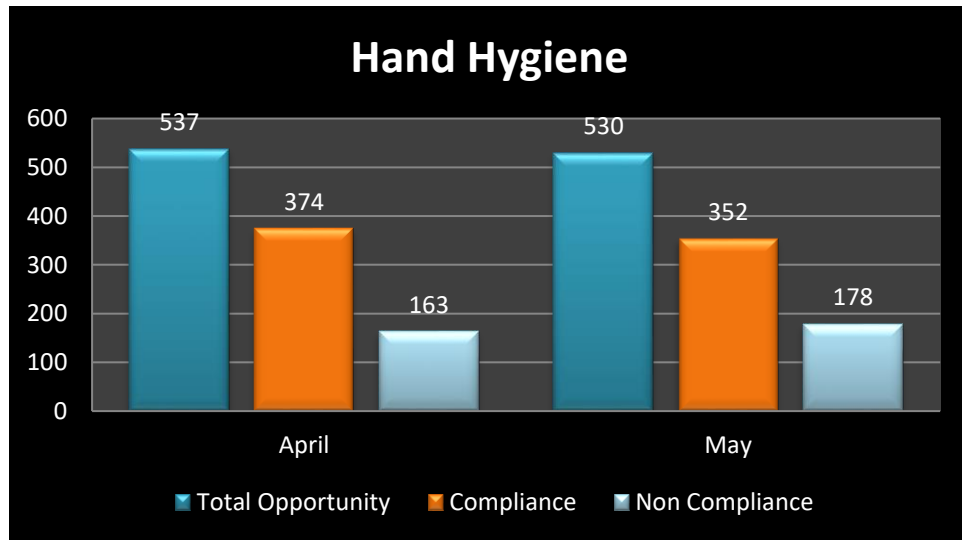


Fig 4.1.4-1 : Hand Hygiene Compliance of overall participants

Table 4.1.4-1: Percentage Compliance of Hand hygiene of participants

April			
Occupation	Observation	Opportunity	Percentage Compliance
Doctors	49	78	62.8
Nurses	252	346	72.8
GDA	63	98	64.3
Physiotherapist	10	15	66.7
Total	374	537	

May			
Occupation	Observation	Opportunity	Percentage Compliance
Doctors	55	84	65.5
Nurses	236	346	68.2
GDA	53	87	60.9
Physiotherapist	8	13	61.5
Total	352	530	

Fig. 4.1.4-2 depicts that compliance rate of doctors is 62.8%, Nurses 72.8%, GDA 64.3%, Physiotherapist 66.7% in the month of April while compliance rate for doctors is 65.5%, Nurses 68.2%, GDA 60.9%, Physiotherapist 61.5% in the month of May.

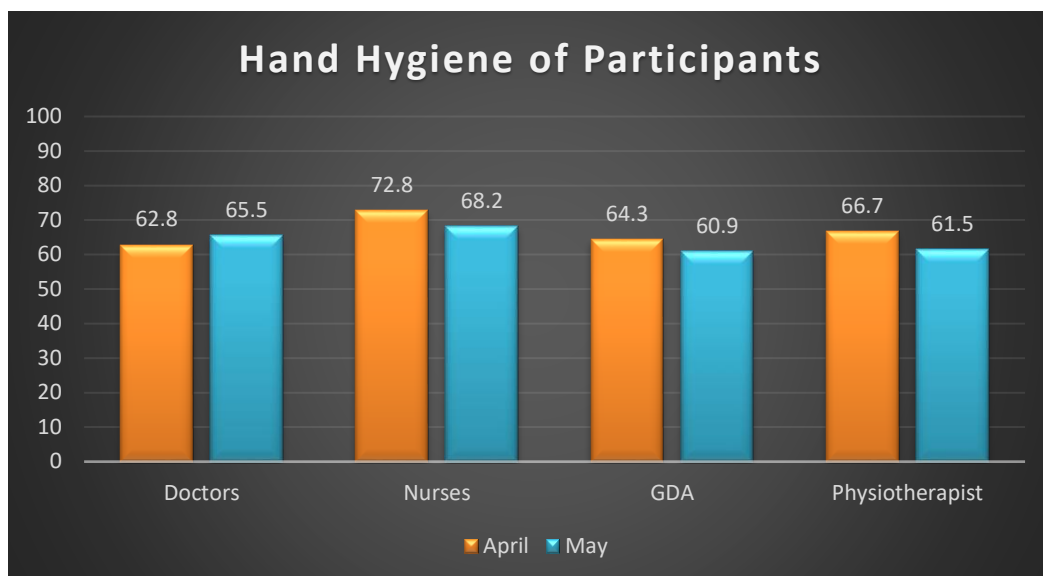


Fig 4.1.4-2 : Hand Hygiene compliance of individual participants

Reasons for Non-compliance of Hand Hygiene –

Table 4.1.4-2 : Characteristics of participants

Participants	Number	Percentage
Doctors	12	21.8%
Nurses	26	47.3%
Physiotherapist	5	9.1%
GDA	12	21.8%

On being asked, what's the reason for non-compliance of hand hygiene through google forms survey questionnaire by Likert Scale 4 items (Never, Rarely, Often, Every time). Among all respondents 49.1% never reported that they forgot whereas 27.3% rarely forgot, 18.2% often & 5.5% every time. 47.3% never reported that they have a skin damages & irritation whereas 32.7% reported rarely, 10.9% often & 9.1% every time. 49.1% never reported that they have non-accessibility of sink or the ABHR, 25.5% rarely, 21.8% often, 3.6% every time non-accessibility. 49.1% never reported that hand hygiene is not important for every patient whereas 29.1% reported rarely, 9.1% often & 12.7% every time. 38.2% never reported due to lack of time whereas 32.7% rarely follow, 23.6% often, 5.5% every time follow. 56.4% never reported that hand hygiene practiced by other colleagues whereas 12.7% rarely practices, 9.1% often practiced, 21.8% practiced every time. 34.5% never reported that patient get offended by my washing hands whereas 41.8% rarely offended, 14.5% often & 9.1% every time offended.

Table 4.1.4-3 : Reasons for not following Hand Hygiene

Respondents	Never	Rarely	Often	Every time
I forgot	49.1% (27)	27.3% (15)	18.2% (10)	5.5% (3)
Due to skin damages & irritation	47.3% (26)	32.7% (18)	10.9% (6)	9.1% (5)
Non accessibility of sink or the alcohol-based hand rub	49.1% (27)	25.5% (14)	21.8% (12)	3.6% (2)
Hand hygiene is not important for every patient	49.1% (27)	29.1% (16)	9.1% (5)	12.7% (7)
Due to lack of time	38.2% (21)	32.7% (18)	23.6% (13)	5.5% (3)
Hand Hygiene not practiced by other colleagues	56.4% (31)	12.7% (7)	9.1% (5)	21.8% (12)
Patients get offended by my washing hands	34.5% (19)	41.8% (23)	14.5% (8)	9.1% (5)

AUDIT

(4.1.5) Prescription Audit

Overall 300 IPD files were audited with the help of checklist for the 2 month i.e. April & May by the observation technique through checklist.

(4.1.5-1) Name of drug (clear & legible) in the medication card

It is mandatory that name of drug must be clearly legible to avoid unwanted error by other staff before dispensing of drug to patient. Fig. 5.1.1 shows that in the month of April 37.3% compliance, 34.7% partial compliance and 28.0% non-compliance while in the month of May 34.7% Compliance, 38.7% partial-compliance & 26.7% non-compliance.

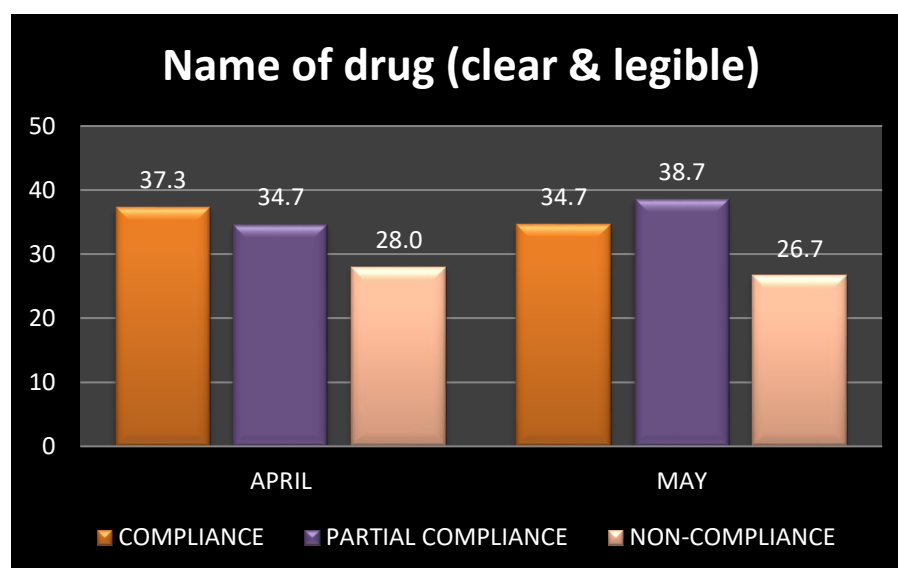


Fig 4.1.5-1: Name of drug (clear & legible) in the medicine card

4.1.5-2) Name of drug in block letters –

It is mandatory to write name of drug in block letter as drug written by physicians with poor handwriting is one of the cause of medication error. Fig. 4.1.5-2 depicts that in the month of April 44% compliance, 36% partial-compliance and 20% non-compliance occurred with the drugs name in block letters in the medicine card whereas in the month of May 36% compliance, 32% partial-compliance and 32% non-compliance occurred.

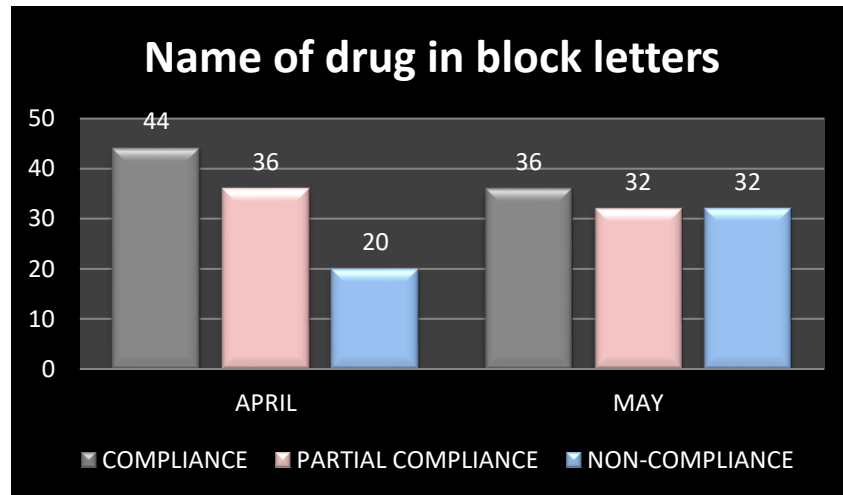


Fig 4.1.5-2 : Name of drug in block letters in the medicine card

4.1.5-3) Numerical dose & unit of measure run together

Proper unit of dose & unit of measure must be mentioned in the medicine card correctly as there is a high chance of misinterpretation by the staff at the time of dispensing. Fig. 4.1.5-3 shows that in the month of April 28.0% compliance, 37.3% partial-compliance, 34.7% non-compliance were detected while in the month of May 24.0% compliance, 40.0% partial-compliance & 36.0% non-compliance occurred.

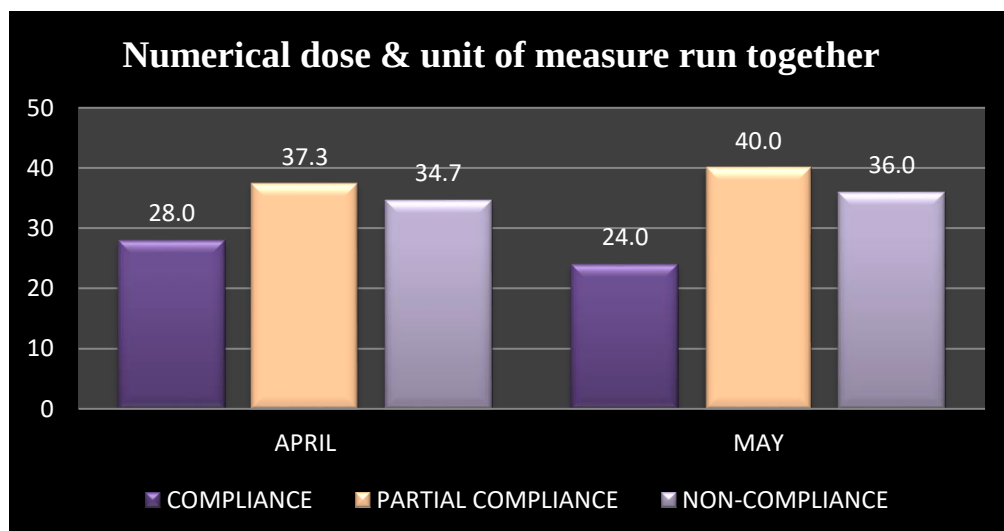


Fig 4.1.5-3 : Numerical dose & unit of measure run together

4.1.5-4) Error prone drug abbreviations

The use of abbreviations, symbols and prefix before drug must be clearly mentioned to avoid unwanted medication errors at the time of dispensing of drug. Fig. 4.1.5-4 depicts that 53.3% compliance, 38.7% partial-compliance & 8.0% non-compliance of error prone drug abb. occurred in the month of April while 60.0% compliance, 26.7% partial-compliance & 13.3% non-compliance in the month of May.

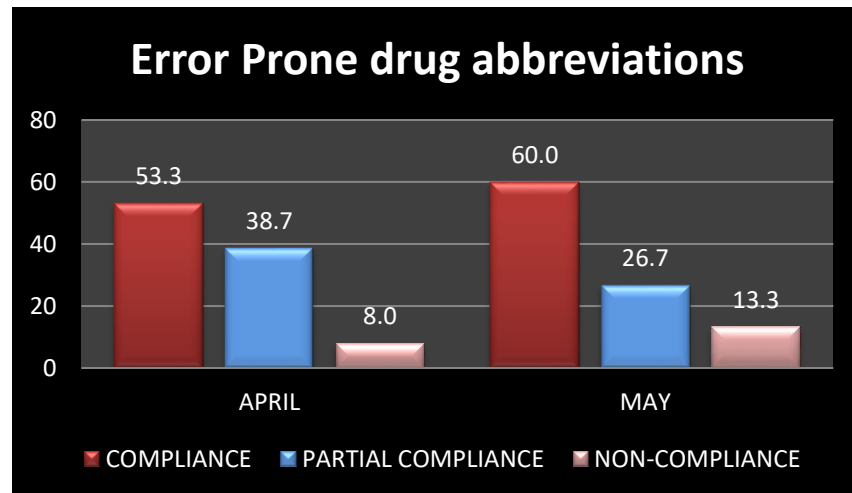


Fig. 4.1.5-4 : Error prone drug abbreviations in the medicine card

4.1.5-5) Route & Frequency

Mentioning the right dose in the medication clears the plan of therapy of the patient while right frequency helps in avoiding high risk medications. Selecting right route of administration implies a direct effect on the quality & plan of therapy. Fig.4.1.5-5 depicts that in the month of April 68.0% compliance, 22.7% partial compliance, 9.3% non-compliance occurred in route& frequency whereas in the month of May 72.0% compliance, 14.7 partial-compliance & 13.3% non-compliance.

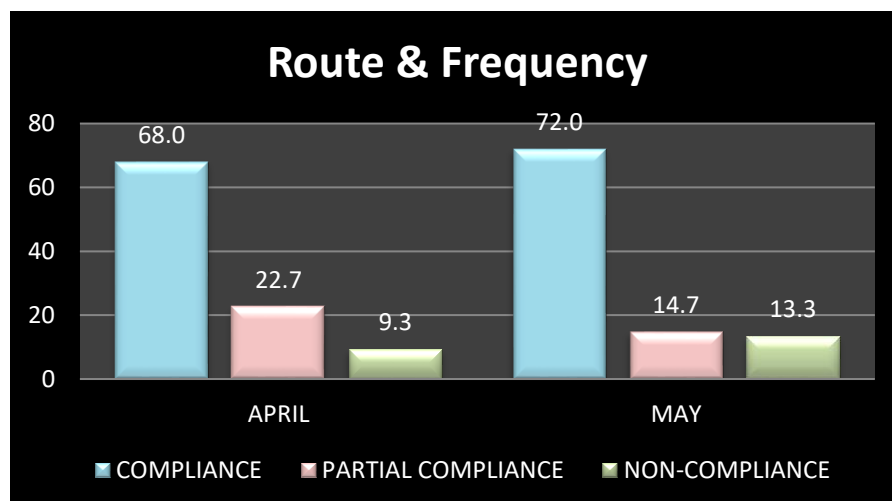


Fig 4.1.5-5 :Route& frequency administered in the medication card

4.1.5-6) Prescribers signed & stamped:

Signature & stamped is also an important component of medication card as it validates the proof of prescription & also implies authority of prescribers over the prescription. Fig 4.1.5-6 depicts 56.0% compliance, 22.7% partial compliance & 21.3% non-compliance in the month of April followed by 43.3% compliance, 23.3% partial compliance & 33.3% non-compliance in the month of May.

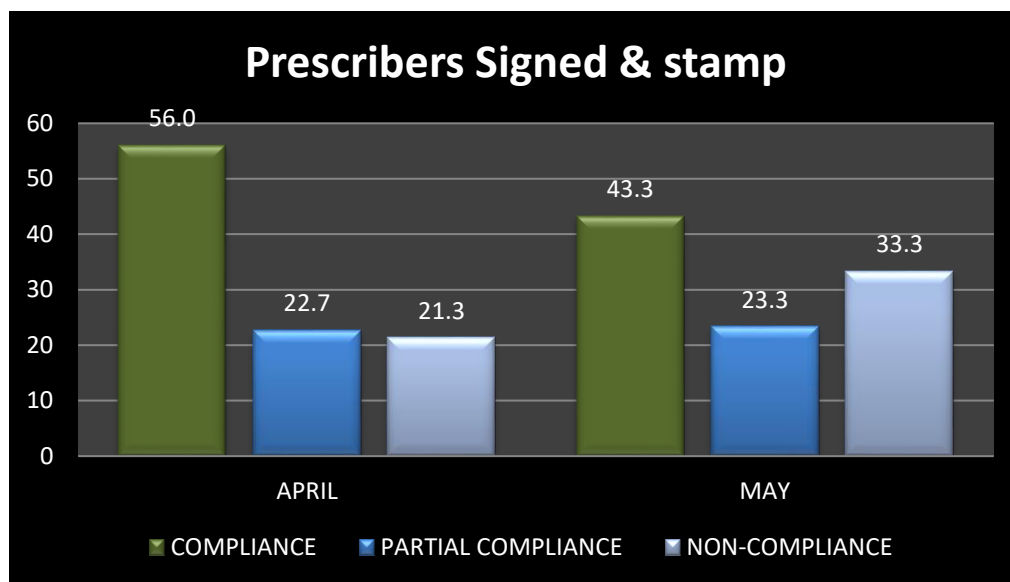


Fig. 4.1.5-6 : Prescribers signed & stamped in the medicine card

(4.2)Patient Safety Devices:

4.2.1 Crash Cart trolley:-

The layout of trolley should be standardized including the location & monitoring protocols which should be undertaken preferably with storage of adequate medical equipment's, disposable & non-disposable drugs. Fig 4.2.1-1 depicts 10% compliance and 90% non-compliance with cart lock & key followed by 90% compliance and 10% non-compliance with the availability of defibrillator while 70% compliance and 30% non-compliance with the defibrillator in working mode followed by 60% compliance and 40% non-compliance in the expired drugs in the cart and 80% compliance and 20% non-compliance with the documentation of crash cart trolley.

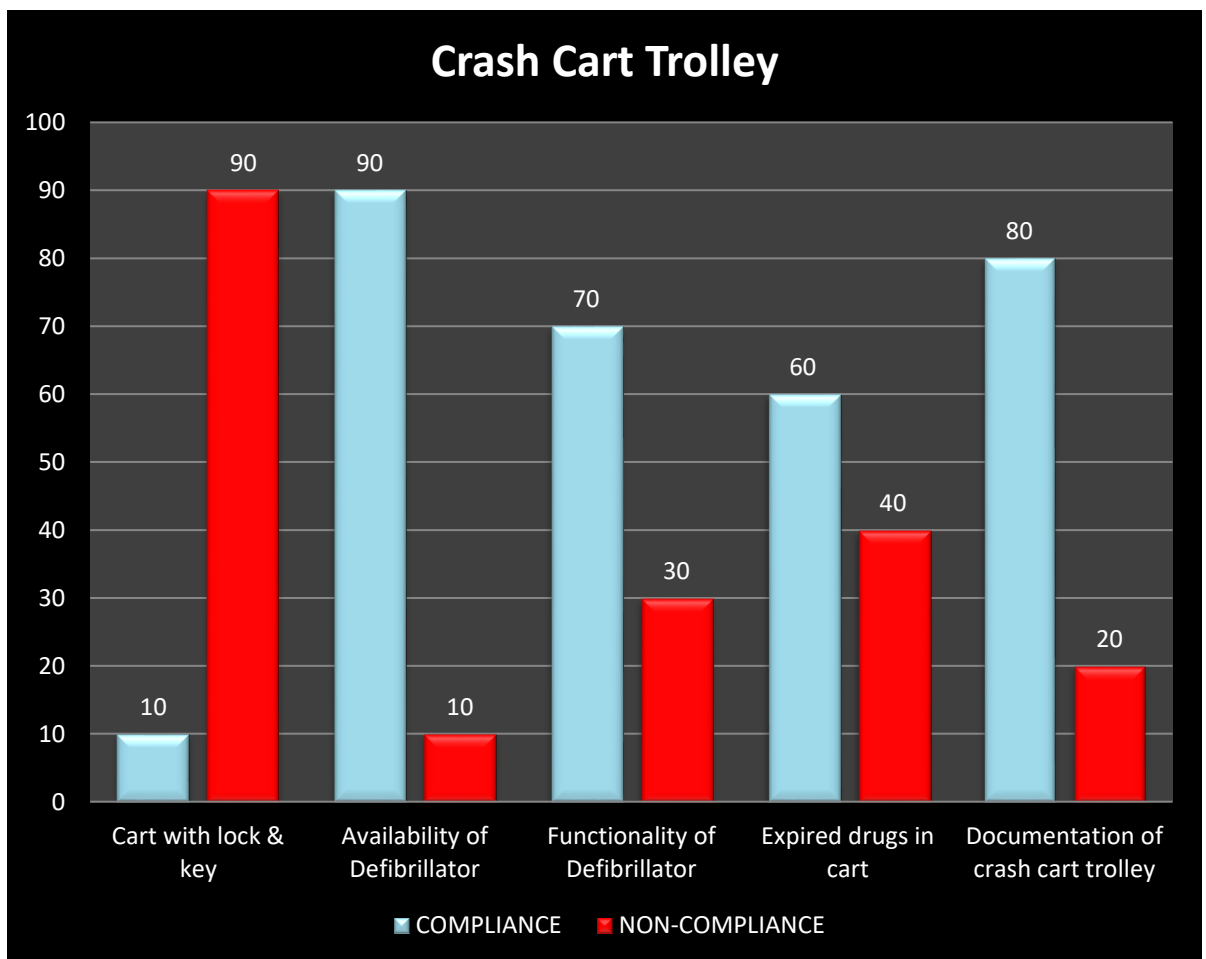


Fig. 4.2.1-1 : Compliance andnon-compliance of Crash Cart Trolley

Fig 4.2.1-2 depicts that 62% compliance & 38% non-compliance with the 1st drawer elements (n=26) followed by 84% compliance & 16% non-compliance with the 2nd drawer (n=19), 64% compliance & 36% non-compliance with the 3rd drawer (n=63), 88% compliance & 12% non-compliance with the 4th drawer (n=12), 84% compliance & 16% non-compliance with the 5th drawer (n=26), 90% compliance & 10% non-compliance with the 6th drawer (n=6) followed by 92% compliance & 18% non-compliance with the crash cart upper portion (n=16) followed by 86% compliance & 14% non-compliance with the down drawer (n=30)

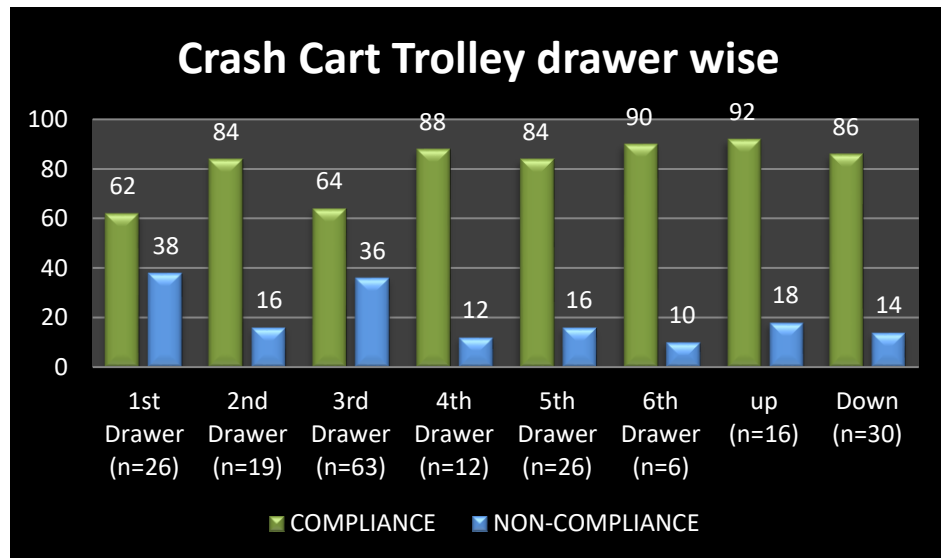


Fig. 4.2.1-2 : Compliance & Non-compliance of Crash Cart trolley drawer wise

4.2.2 Patients Identification wristband:-

Fig. 4.2.2 depicts that 8% compliance & 92% non-compliance with the availability of white color band followed by 81% compliance & 19% non-compliance with the availability of orange color (vulnerable) band while 79.3% compliance & 20.7% non-compliance with the patient details clear & legible on band.

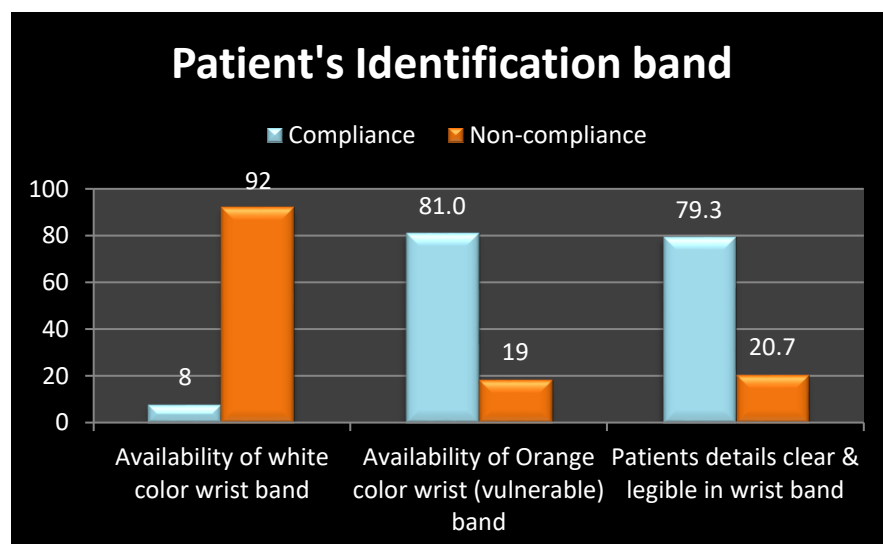


Fig 4.2.2 : Patient's Identification wrist band

4.2.3 Nursing Call bell –

Fig. 4.2.3 depicts that 20% compliance and 80% non-compliance with the availability of nursing call bell.

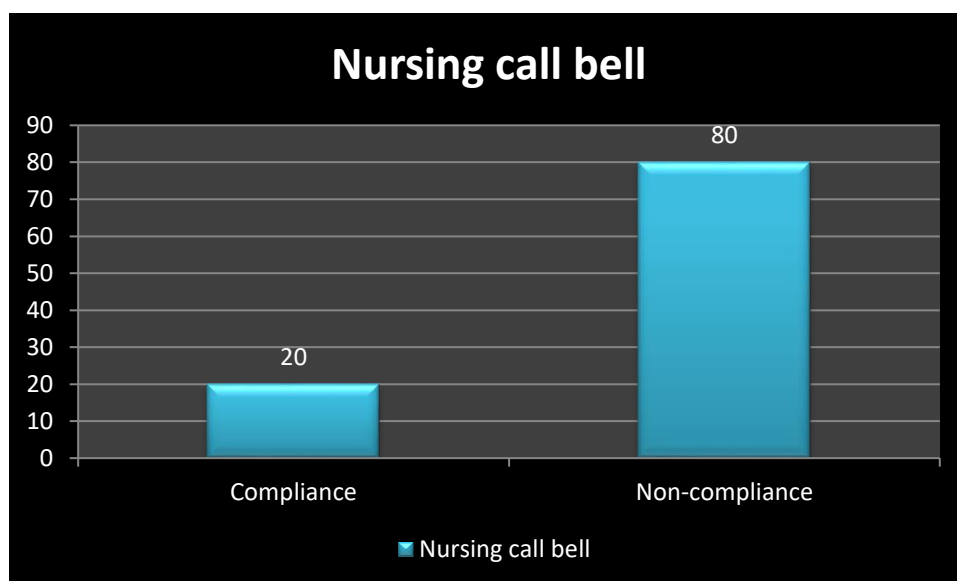


Fig 4.2.3 : Availability of Nursing Call bell

4.2.4 Electrical board near patient beds –

Fig. 4.2.4 depicts 90% compliance and 10% non-compliance with the electrical board near patient beds followed by 78% compliance and 22% non-compliance of electrical board in working condition.

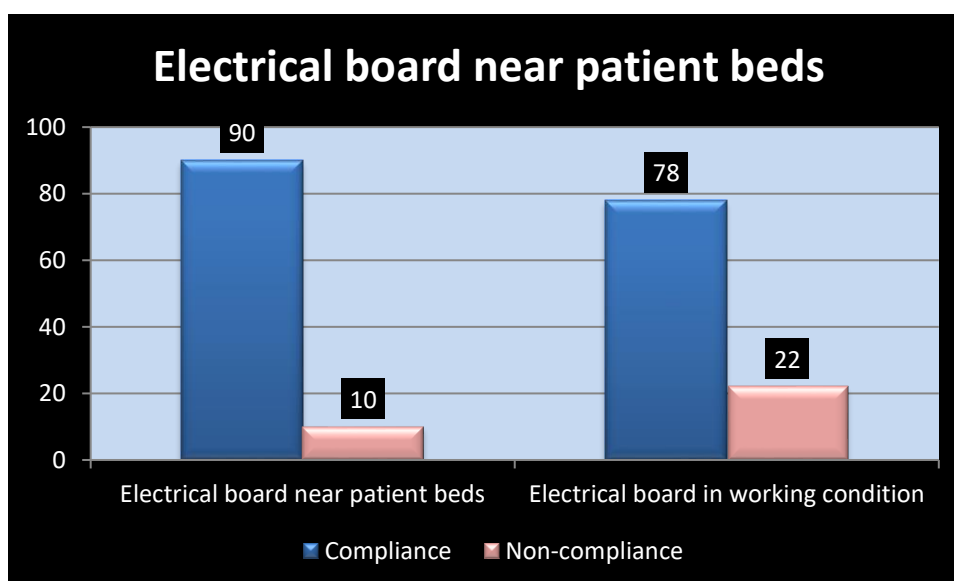


Fig. 4.2.4: Electrical board near Patient beds

CHAPTER - 5

DISCUSSIONS & RECOMMENDATIONS –

Falls may or may not be related with injuries depending upon the factors which could be external or internal. Internal factors have a physical & functional origin while external factors triggers due to environs& other pitfall. As per benchmark of The Mission Hospital patient fall rate is 8.46 per thousand bed days however in the month of March it exceeds the benchmark i.e. 14.15 fall which should be rectify to avoid serious peril.

Root cause analysis of Inpatient fall

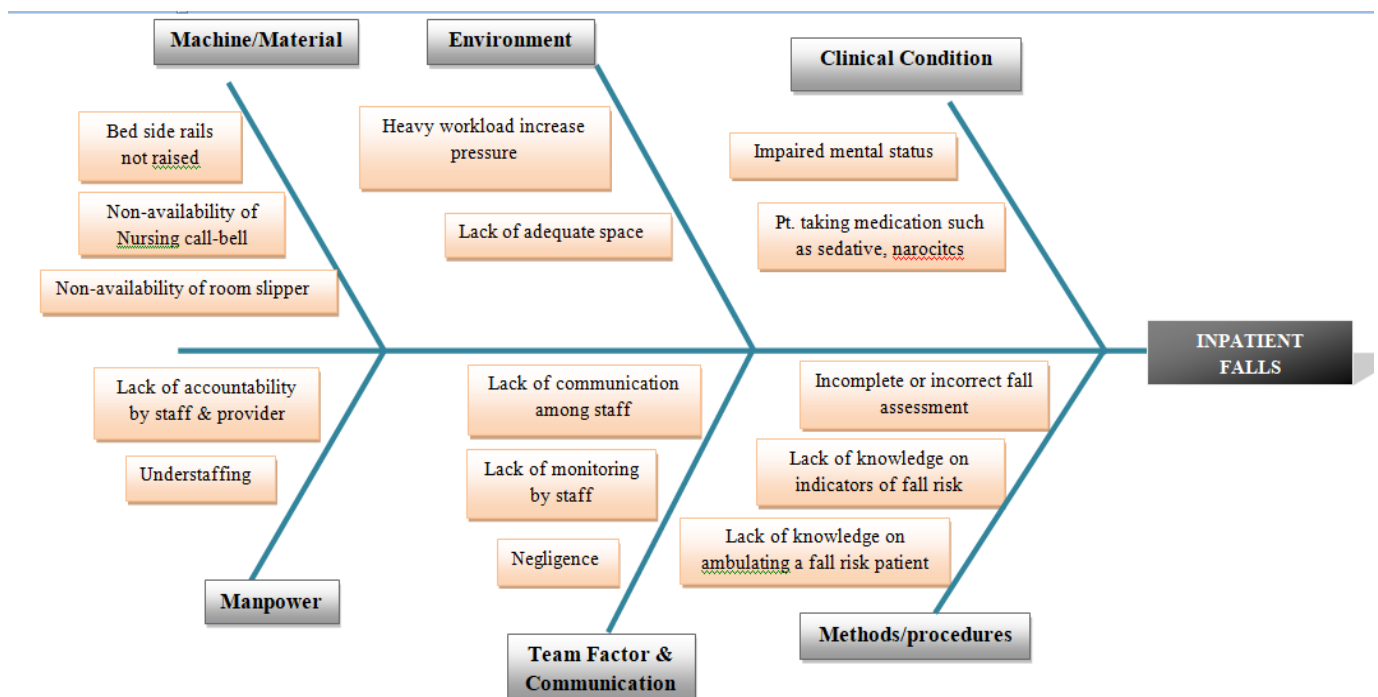


Fig. 5.1: Ishikawa diagram for Inpatient Falls

- Attention for patients using sedative, hypnotic, tranquilizer, diuretic, anti-hypertensive and anti-Parkinson drugs.
- Detailed documentation of patient medical history by either asking patient or a family member.
- Need for a companion that would not leave the patient alone while bathing or in the bathroom and summon a nurse for walking and other bodily movements.
- Nursing call bell must be implemented in the inpatient ward.
- Availability of slippers while walking to avoid infection.
- Education of patient for risk of falls & fall prevention policy of the hospital.
- Monitoring of patient especially at the time of movement & locomotion.

The Catheter-associated urinary tract infection (CAUTI) affecting all subjects of different age groups & gender respectively being dominant cause of morbidity and mortality in individuals. It is found that benchmarking of The Mission Hospital is 2cauti per thousand catheter days had been exceeded in the month of October with 2.32cauti per thousand catheter days and in the month of Feb with 2.1cauti per thousand catheter days in the month of February.

National studies have been done in several countries with the prevalence cases. Pressure Ulcer prevalence ranging from 10.1% to 17.3% were determined in one of the prevalence studies in acute care hospital in the patients. In recent studies in 5 European countries in 25 hospitals among 5947 patients, Stage 1 to 4 prevalence pressure ulcer case was 18.1%. Most common affected locations are the sacrum and heels of the body and the prevalence case was 10.5% if prevalence case of stage 1 ulcers is excluded.[11]

- Frequently repositioning of the patient to avoid Pressure on the skin.
- Inspection of skin daily for pressure sore warning
- To protect the skin from urine and stool, moisture barrier creams must be applied.
- Maintaining proper nutrition as per their needs & intake of fluid.

Hand hygiene is the utmost efficacious measurement to reduce infection in the health care setting and in the community by hindering the transference of microorganisms, through it is unlikely fruitful when other component in infection control viz overcrowding, lack of training, environment cleanliness, level of staffing and lack of education is meagre. Now it is realized that enhancing HH conformity and recommendations depends on the altering mankind conduct. [12]

The “5 Moments for Hand Hygiene” approach defines the key moments when health care workers should perform hand hygiene.

- 1) Before touching a patient,
- 2) Before clean/aseptic procedures
- 3) After body fluid exposure/risk
- 4) After touching a patient, and
- 5) After touching patient surroundings.

High costs of health systems, high mortality & morbidity & diminished life quality is the genesis of the healthcare associated infections. However, the benchmark for hand hygiene in The Mission Hospital is 75%, though the fig 5.2 depicts less than 75% compliance which must be corrected to measure compliance.

Root cause analysis of Hand Hygiene non-compliance



Fig. 5.2: Ishikawa diagram for Hand-Hygiene non-compliance

- Education and training to the health care providers.
- Visual reminders to each one.
- Spot training.
- Performance feedback & audit must be done to improve hand hygiene
- Electronic hand hygiene monitoring systems must be implemented.
- A regularly check of health care providers & interns knowledge about hand hygiene must be look to find out the gaps which can reduce infection & compute compliance prevention

The Jargon of Medication error can be baffle as of overspreadexplanation. The IOM in health care, has defined an error as “the failure of a planned action to be completed as intended (error of execution) or the use of a wrong plan to achieve an aim (error of planning). An error may be an act of commission or an act of omission.” Prescription auditing is a type of surveillance work, and process of improving quality which is helpful in clinical practice with regard to decreasing the burden of disease because of medication mistakes and aids in rational use of medicines.[13]As per WHO directions & NABH recommendations prescribers must adheres to safe medication practices to avoid unwanted medication error as prescription writing is an essential element of practicing safe medication.

NABH gives obligatory standards & direction accessibility of crash cart trolley including storage of medication & equipment's in emergency situation. Regular audits of trolley for ensuring availability of stock levels (quantity wise differs in cart), checking of expiry dates, locking of crash cart to prevent pilferage & documentation of records ensures accountability of the staff.

Patient safety goals laid down by the World Health Organization (WHO), correct identification of the patient being the goal number one. Patient identification wrist band is an essential element & interaction between the patient and health care providers, identification and checking of data and records confirmed by him or her is a patient identification process.[13] Due to non-availability of wristbands or inaccurate information during identification can lead to errors. Monitoring of Identification wrist band must be done and progress actions must be implied in case of non-conformity as it could lead to wrong identification of patient at the time of medication or treatment and can impact the safety culture of the organization

When patients receive adequate, attentive and efficient care, they are more comfortable and pleases, which can, in turn, help improve their recovery rate and higher patient satisfaction. Nurse call systems decreases stress on the patient as well as the hospital staff for smoothly and efficiently hospital tasks, nurse call system are easy approachable in terms of patient and other staff.

Electrical board must be accessible to patients as a part of amenities. Broken or unrepaired board must be repaired with utmost preference as it could be hazardous and can lead to electrical shocks to the patient.

RECOMMENDATIONS –

- Regular internal audits must be conducted to assess the compliance level & improvement measures must be implemented.
- All the audited parameters with the non-compliance must be checked & strict measures must be adhere to fulfill the guidelines of NABH & IPSC.
- The audit data must be synergies with the clinicians every month in a meeting & regular training must be implemented to improve the quality & good prescribers practice.
- Audits must be on fixed date & time & non-compliance with the expired medications & missing audits should be monitored.

- Complete documentation of file, registers must be recorded and monitored.
- During open file audits, Corrective and preventive actions (CAPA) must be done at the sight by the staff to avert misinterpretation.
- Staff must be acknowledge about SOP, hospitals policy & protocols.
- For effective communication read back policy must be strictly followed by all healthcare providers.
- Education and training to the health care providers regarding 5 moments of hand hygiene with a regular audits to find out the gaps which can reduce infection & compute compliance prevention
- Electronic hand hygiene monitoring systems must be implemented.
- Consideration of Electronic Medical Records.
- Bar codes and new technologies of scanners must be implemented in the patient identification wrist band.
- Benchmarking for all standards must be revised & it should be maintained.
- Proper maintenance of training records.

LIMITATIONS:-

- Limited duration of time.
- Due to upsurge in COVID cases and inpatient footfall in the hospital.
- Observation and selection bias in hand hygiene.
- Selection bias in prescription audit as data cannot be collected from various department.

CHAPTER – 6

CONCLUSION:

Patient safety is the prevention of harm to patients. It is the keystone & prime quality health care. Healthcare organizations emphasize on continuous improvement for patient safety in the organizational environment. Patient safety is considered as the basic key-value as per WHO in 2005. Systems can be originated to help prevent errors, to make them detectable so they can be intercepted and to provide means of mitigation if they are not intercepted. Quality improvement strategies of routine use such as practice guidelines, benchmarking, auditing and reminders, can help to mitigate medical errors. All the parameters audited were in terms of patient safety however non-compliance was observed in many parameters. Training regarding education & knowledge should be of utmost preference to magnify the understanding of staff. It is the responsibility of the hospital to sensitize the staff regarding patient safety and trained them.

References –

- [1] Emanuel L, Berwick D, Conway J, Combes J, Hatlie M, Leape L, Reason J, Schyve P, Vincent C, Walton M. What exactly is patient safety?. *Journal of Medical Regulation*. 2009 Mar;95(1):13-24.
- [2] Mitchell PH. Defining patient safety and quality care. *Patient safety and quality: An evidence-based handbook for nurses*. 2008 Apr.
- [3] David SN, Valas S. National Accreditation Board for Hospitals and Healthcare Providers (NABH) Standards : A review, *Curr Med Issues* 2017 (cited 2021 Jul 4)15:231-6 Available from: <https://www.cmijournal.org/text.asp?2017/15/3/231/212374>
- [4] Subhrojyoti Bhowmick¹, Shubham Jana², Saksham Parolia³, Anupam Das⁴, Protim Saren⁵ Prescription audit study from a tertiary care private hospital in Kolkata, India, Year : August 2019, https://soi.org/10.4103/QAIJ.QAIJ_5_19
- [5] Ghali H, Rejeb B, Chelly S, Cheikh AB, Khelifa S, Latiri H. Incidence and risk factors of pressure ulcers in a Tunisian University Hospital. *Rev EpidemiolSantePublique*. 2018 Jul 1;66upl 5):S340.<https://doi.org/10.33805/2573.3877.133>
- [6] Hitcho EB, Krauss MJ, Birge S, Claiborne Dunagan W, Fischer I, Johnson S, Nast PA, Costantinou E, Fraser VJ. Characteristics and circumstances of falls in a hospital setting: a prospective analysis. *Journal of general internal medicine*. 2004 Jul;19(7):732-9. 2004<https://doi.org/10.1111/j.1525-1497.2004.30387.x>
- [7] Hoffmeister LV, Moura GM. Use of identification wristbands among patients receiving inpatient treatment in a teaching hospital. *Revistalatino-americana de enfermagem*. 2015 Jan;23:36-43. <https://doi.org/10.1590/0104-1169.0144.2522>
- [8] Candradewi S, Al Rasyid H, Wardhani V, Rudijanto A. Utilization of emergency trolley in patient ward: Is not always for emergency reason. *EnfermeríaClínica*. 2020 Oct 1;30:205-8. <https://doi.org/10.1016/j.enfcli.2020.06.046>
- [9] Chavali S, Menon V, Shukla U. Hand hygiene compliance among healthcare workers in an accredited tertiary care hospital. *Indian journal of critical care medicine: peer-reviewed, official publication of Indian Society of Critical Care Medicine*. 2014 Oct;18(10):689. doi: 10.4103/0972-5229.142179
- [10] Parker V, Giles M, Graham L, Suthers B, Watts W, O'Brien T, Searles A. Avoiding inappropriate urinary catheter use and catheter-associated urinary tract infection (CAUTI): a pre-post control intervention study. *BMC health services research*. 2017 Dec;17(1):1-9.

- [11] Pressure Ulcers – Prevention and Treatment Quick Guide_M4006N.pdf
- [12] Jumaa PA. Hand hygiene: simple and complex. International Journal of Infectious Diseases. 2005 Jan 1;9(1):3-14. <https://doi.org/10.1016/j.ijid.2004.05.005>
- [13] Louise Viegas Hoffmeister, Gisela Maria Schebella Souto de Moura, Use of identification wristbands among patients receiving inpatient treatment in a teaching hospital Jan-Feb 2015;23(1):36-43. DOI: 10.1590/0104-169.0144.2522
- [14] Panayappan L, Jomcy Maria Jose, Jomin George Joseph, Krishna Jayapal, Susan Saju & Krishna Kumar, PRESCRIPTION AUDIT AND PRESCRIBING INDICATORS: A REVIEW, J.Bio.Innov 6 (4), 2017

ANNEXURES:-

HAND HYGIENE OBSERVATION FORM -

HAND HYGIENE MONITORING													
		KEY MOMENTS			TMH/HIC/02								
		1 Before patient contact 2 Before Aseptic Task 3 After Body Fluid Exposure Risk			4 After Patient Contact 5 After Contact with Patient's surroundings								
Person Monitoring:-		Month:-											
Ward:		Staff Group Monitored:-											
Opport-unities	Key Moments					Opportunities Taken	Opport-unities	Key Moments					Opportunities Taken
	1	2	3	4	5			1	2	3	4	5	
1							1						
2							2						
3							3						
4							4						
5							5						
6							6						
7							7						
8							8						
TOTAL							TOTAL						
Person Monitoring:-		Month:-											
Ward:		Staff Group Monitored:-											
Opport-unities	Key Moments					Opportunities Taken	Opport-unities	Key Moments					Opportunities Taken
	1	2	3	4	5			1	2	3	4	5	
1							1						
2							2						
3							3						
4							4						
5							5						
6							6						
7							7						
8							8						
Total							TOTAL						

PRESCRIPTION AUDIT CHECKLIST:-

S.No	Audit Parameters	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
1	UHID/MRD Number										
2	Name of drug (clear & legible)										
3	Name of drugs in Block letters										
4	Numerical dose & unit of measures run together										
5	Error prone drug abbreviations										
6	Route and frequency mentioned										
7	Prescribers signed and stamped										

PATIENT IDENTIFICATION WRIST BAND CHECKLIST:-

S.No	Parameters	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
1	UHID/MRD Number										
2	Availability of white color wrist band										
3	Availability of Orange color wrist (vulnerable) band										
4	Patients details clear & legible in wrist band										

CRASH CART TROLLEY AUDIT CHECKLIST:-



CRASH CART CHECKLIST FOR GENERAL WARDS		
Month :		
Date:		
TOP:	QT	YES/NO
Defibrillator	1	
Electrodes Adult & Paed	10 each	
ECG Jelly	1	
ECG Paper	1	
Torch	1	
Pulse Oxymeter	1	
Ambu bag with mask with o2 tubing, (Adult)	1	
Ambu bag with mask with o2 tubing, (Paed)	1	
1st DRAWER		
Suction Catheter (8,10,12,14,16)	2 Each	
Vacuum Suction set	1	
Laryngoscope Adult with 3 blades (3,4,5)	1	
Laryngoscope Paed with 2 blades (1,2)	1	
Laryngeal Mask airway	1	
Bougie	1	
Styllet	1	
Spare bulbs	2	
Spare batteries	2	
Magills Forceps	2	
Artery Forceps	1	
Tape measure	1	
Cotton tape roll	1	
Syringe 5 ml	2	
2% Xylocaine jelly	1	
ET Tube (2.5 to 8.5)	2 Each	
Tracheostomy tube(7,7.5)	1 each	
Gauze pack(2 piece)	5	

2nd DRAWER:		
Ryles Tube -8,10,12,14,16	2 each	
Infant feeding tube 5,6,7	1 each	
Micropore- 1/2", 1"	1 each	
Oral Airway - 1,2,3,4,5	1 each	
Nasopharyngeal airway 6, 6.5,7,7.5	1 each	
O2 mask-Adult	2	
O2 mask-Paed	2	
Nebulizer mask-Adult	2	
Nebulizer Mask- Paediatric	2	
High Concentration mask - Adult	1	
Nasal cannula-Adult	1	
O2 Tubing	2	
Y connector	2	
Water For Injection	5	
3rd DRAWER		
White labels		
Inj. Scoline, Insulin, kept in fridge	1	
Inj. Cordarone	5	
Inj. Soda bicarb	4	
Inj. Adrenaline	10	
Inj. Magnesium sulphate	2	
Inj. Calcium gluconate	2	
Inj. 2% Xylocard	1	
Inj.2% Lignocaine	1	
Inj. Hydrocortisone	2	
Inj.Midazolam	2	
Inj. Dopamine	2	
Inj.Dobutamine	2	
Inj. Noradrenaline	2	
Inj. Aminophylline	2	
Inj. Atropine	10	
Inj. Isoprenaline	2	
Inj. Lasix	10	
Inj. Nalaxone 0.4mg/ml	2	
Inj Phenergan	2	
Inj. Vecuronium 10 mg	1	
Inj. Vitamin k	2	
sterile water	10	

4th DRAWER:		
Syringe - 1cc,2,5,10,20,50	4 each	
Loose needle-18G,20,22,23,24,26	4 each	
3 way stopper	2	
3 way stopper with 10cm extension	2	
5th DRAWER		
Disposable razor	3	
Venflon 18G (GREEN)	2	
Venflon 20G (PINK)	2	
Venflon 22G (Blue)	2	
Venflon 24G (Yellow)	2	
Tegaderm	4	
P.M.line (200 cm)	2	
Alcohol Swab	10	
Black Band	1	
6th DRAWER		
I.V. Set	2	
BT Set	2	
Paediatric Drip set	2	
DOWN:		
5% Dextose	2	
DNS	2	
Normal Saline	2	
R. L. Saline	2	
Haemaccel/ Dextran	1	
25% Dextrose	2	
Inj. Mannitol	2	
Sterile Gloves(6,6.5,7,7.5,8)	2each	
Wearon	2	
Mask, cap	5each	
Signature:		