RISK MANAGEMENT USING INCIDENT REPORTING SYSTEM- A STUDY OF SUPER-SPECIALTY HOSPITAL

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Introduction

- Risk Management is a process used to safeguard patient safety, organizational assets, maintain brand value and most importantly prevent financial losses.
- Incident reporting system is one of the means employed by various organizations to bring about risk assessment, it is found to be a crucial instrument for improving safety and enhancing organizational learnings. The system provides the organization with timely information of incidents and useful insights into processes that prevents their recurrence.
- Incident Report- incident report is a written form or an online portal used to document the details of untoward events that occur on day-to-day bases in an organisation that has the potential of harm to either an individual or property of any sort.
- It records events such as accidents, near miss, property damage, safety issues, health issues and any sort of security breach etc.

Classification

According to severity, incidents are broadly categorised into:

1. Near miss events
2. No harm events
3. Sentinel/Harmful events

Definition

- **Near miss-** A near miss is an unanticipated occurrence that had the potential to cause harm, disease, or damage but did not. Near misses are mistakes that potentially may have hurt patients but did not.
- **No Harm Event-** It is an event experienced by the patient, such that no harm is done at the time of its occurrence, and there is no realistic chance that there will be any harm done in the future due to the same. However, the incident may have an occasional potential of causing harm on its recurrence in the future.
- **Sentinel events-** A systemic or procedural failure that results in a patient receiving services that lead to death or suffering, significant and long-lasting loss of function or severe temporary harm. A sensory, motor, physiological, or psychological impairment that wasn't existing when services were requested. The impairment is unrelated to any underlying conditions and lasts for at least two weeks.

Research Question and Objective

Research Question

1. What type of Incident reporting system does the Amrita hospital have?
2. Which are the most common risks identified through Incident Reporting System (IRS) and What are the Measures adopted by the Hospital to mitigate these risks?

Research Objectives

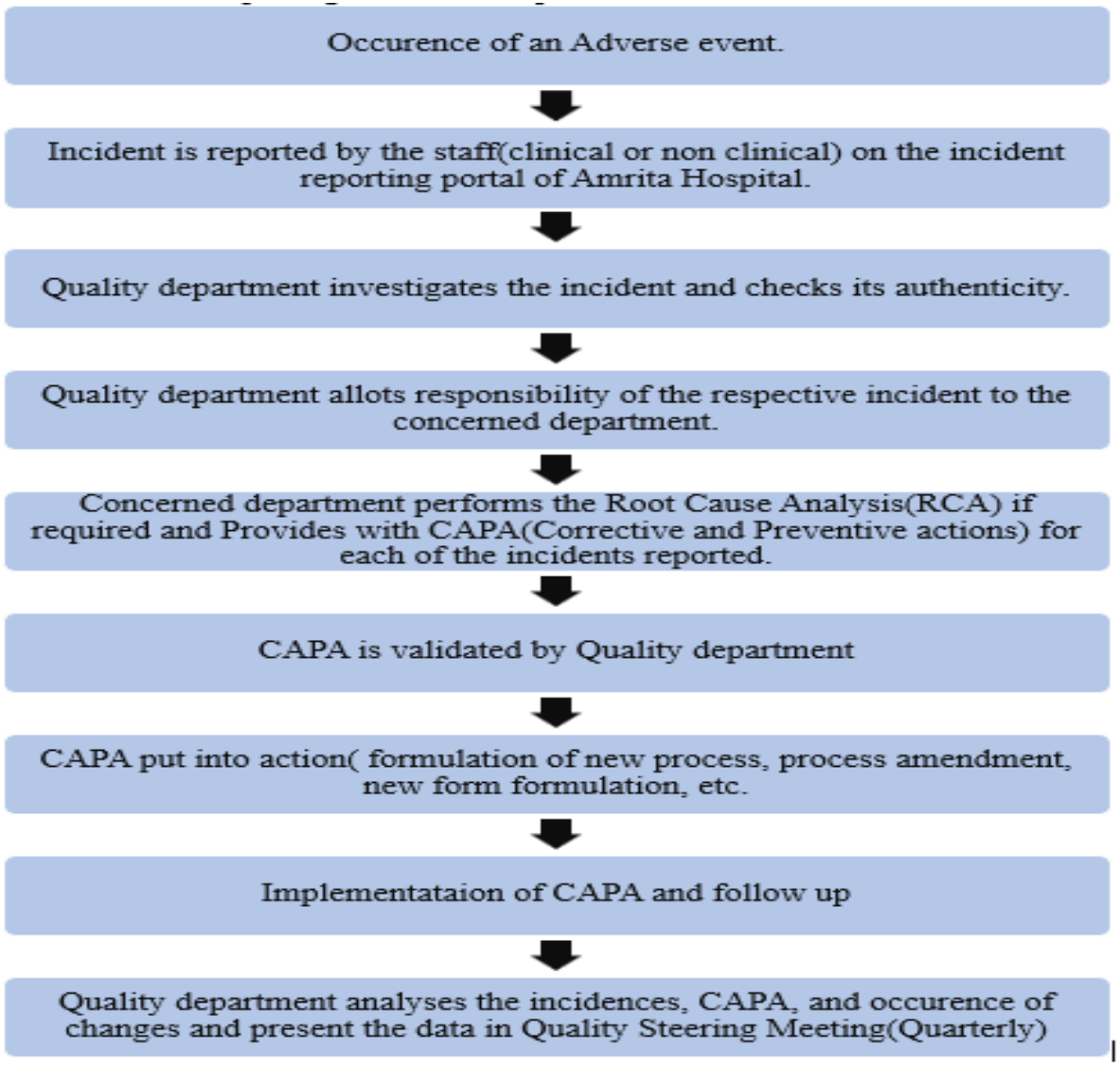
1. To understand the process of incident reporting in Amrita super specialty hospital.
2. To profile and analyse the type of Incident and adverse event reported on Amrita Hospital incident management system.
3. To assess the gaps in the existing incident management system using Failure Mode and Effect Analysis (FMEA) and suggest remedial measures.

Methodology

1. Study Design: Secondary data Analysis
2. Study Setting: Study was conducted in Amrita Hospital and Research Centre, Faridabad, Haryana.
3. Duration of Study: Study was conducted over the period of 3 months w.e.f. 20th Feb 2023 to 20th May 2023.
4. Sample size: 102 Cases reported over the period of Oct 2022 to Mar 2023 on the Amrita Hospital Incident Reporting System.
5. Data Collection and Analysis: Data was collected from the hospital Incident Management data base and paper-based incident management forms preserved in the hospital itself. A retrospective analysis is done on the acquired data. MS Excel is used to record, study, and analyse the details of every incident that were recorded between Oct 2022 to Mar 2023 including CAPA.
6. Inclusion Criteria: All the incidents irrespective of the type and severity reported between Oct 2022 to Mar 2023.
7. Exclusion Criteria: The incidents that are not reported in the Incident database are excluded.

Results

- **Process of Incident Reporting at Amrita Hospital, Faridabad**



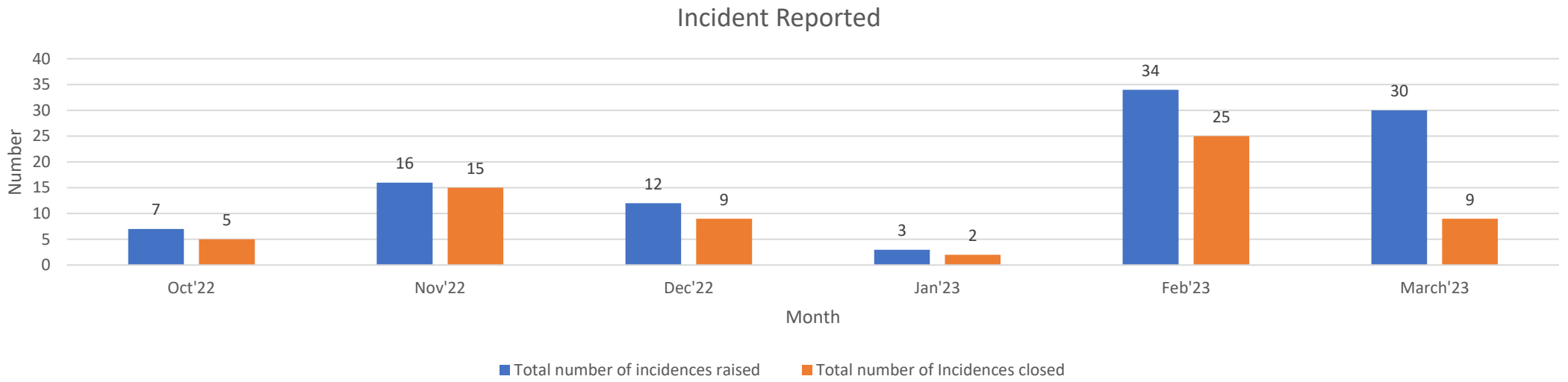
Analysis

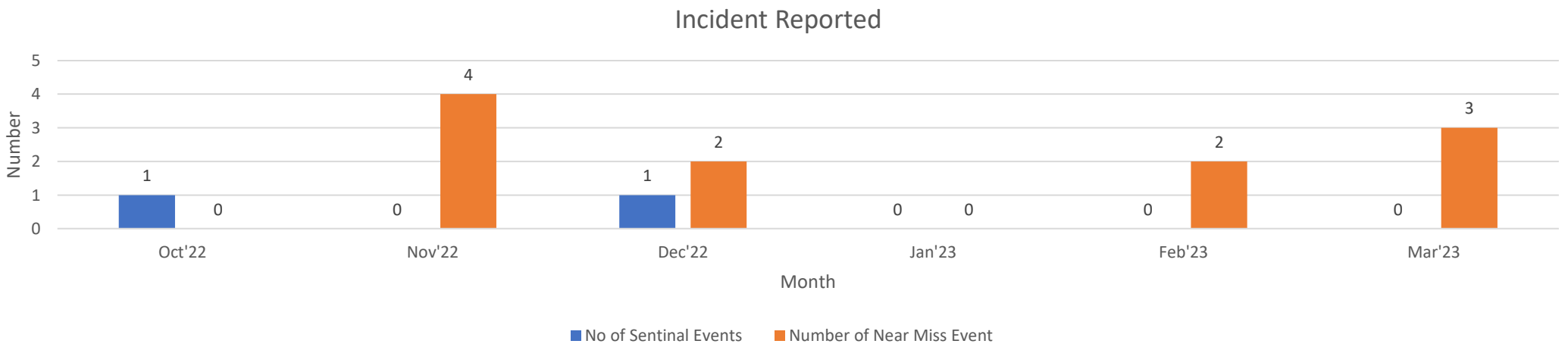
S. N	DATA	MONTH (OCT 2022 TO MAR 2023)						TOTAL
		Oct'22	Nov'22	Dec'22	Jan'23	Feb'23	Mar'23	
1	Total number of Incidents raised	7	16	12	3	34	30	102
2	Total number of incidents closed	5(71.4 %)	15(93.7 %)	9(75%)	2(66.6 %)	25(73.5 %)	9(30%)	65(63.7 %)
3	Total number of incidents Not closed	2(28.6 %)	1(6.3%)	3(25%)	1(33.4 %)	9(26.5 %)	21(70%)	37(36.2 %)
4	Total number of Satisfactory CAPA (Among incident closed)	5(71.4 %)	11(68.7 %)	5(41.6 %)	2(66.6 %)	15((44. 1%)	6(20%)	44(43.1 %)

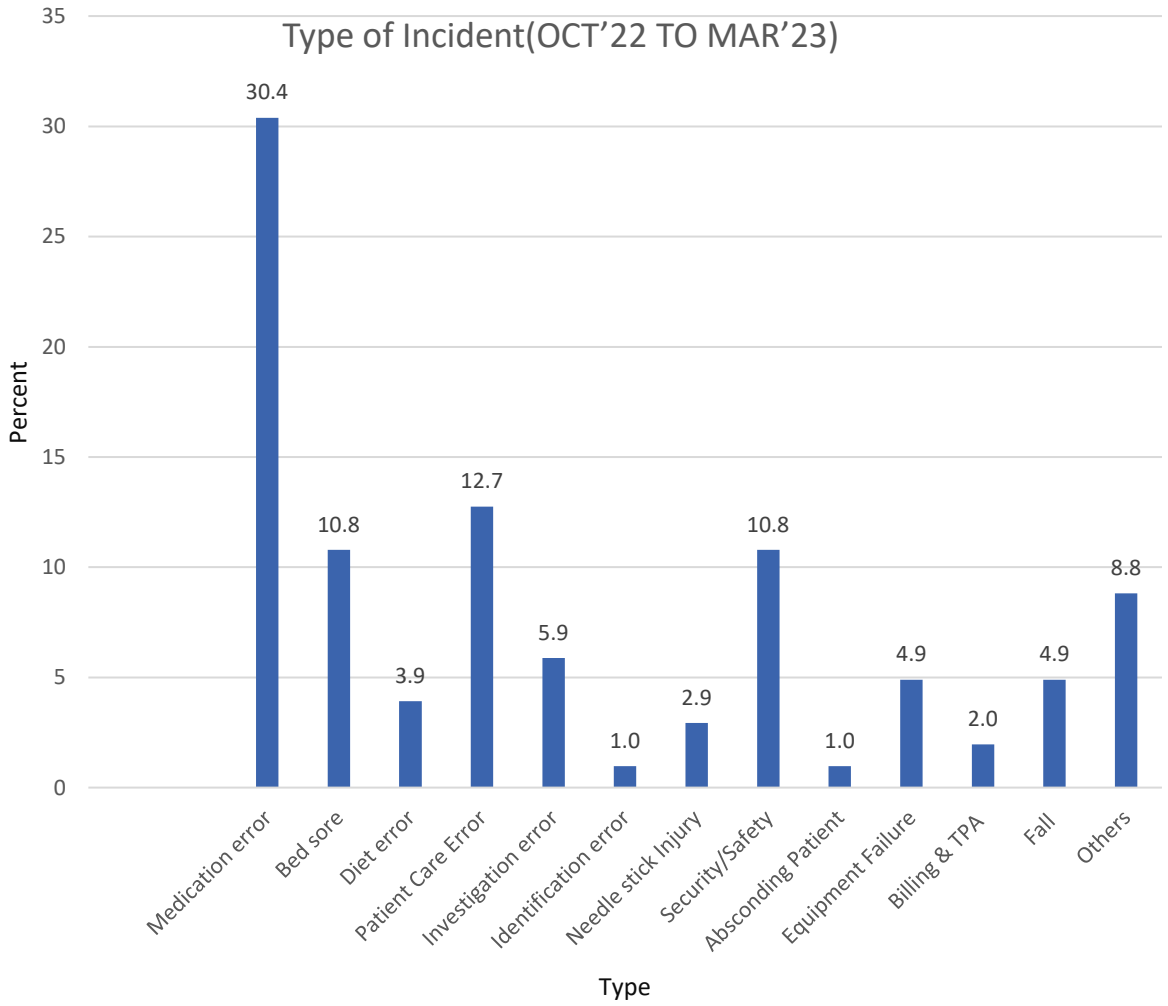
- 65 Incidences i.e., 63.7% out of the total number were closed, (Formulate and Implement CAPA and sends the CAPA report to the Quality department).
- 44 incidences i.e., 43.1% cases have satisfactory CAPA,(not all cases need CAPA)
- 70% Incident in March not closed(Pending cases, need for training)
- Very few incidents were reported in the month of January (shift from paper based to online incident reporting portal).

S.NO	DATA	MONTH (OCT 2022 TO MAR 2023)						TOTAL
		Oct'22	Nov'22	Dec'22	Jan'23	Feb'23	Mar'23	
1	Total number of Incidents raised	7	16	12	3	34	30	102
2	Total number of sentinel events (Among all incident)	1(14.2%)	0(0%)	1(8.3%)	0(0%)	0(0%)	0(0%)	2(1.9%)
3	Near miss incidence (Among all incident)	0(0%)	4(25%)	2(16.2 %)	0(0%)	2(5.8%)	3(10%)	11(10.7 %)
4	No Harm event (Among all incident)	6(85.7%)	12(75%)	9((75%)	3(100%)	32(94.2 %)	27(90 %)	89(87.2 %)

- According to classification of incidents, 11 near miss events and 2 sentinel events were reported.


Incident Reported
Number
40
35
30
25
20
15
10
5
0
7
5
16
15
12
9
3
2
34
25
30
9
Oct'22
Nov'22
Dec'22
Jan'23
Feb'23
March'23
Month
Total number of incidences raised
Total number of Incidences closed

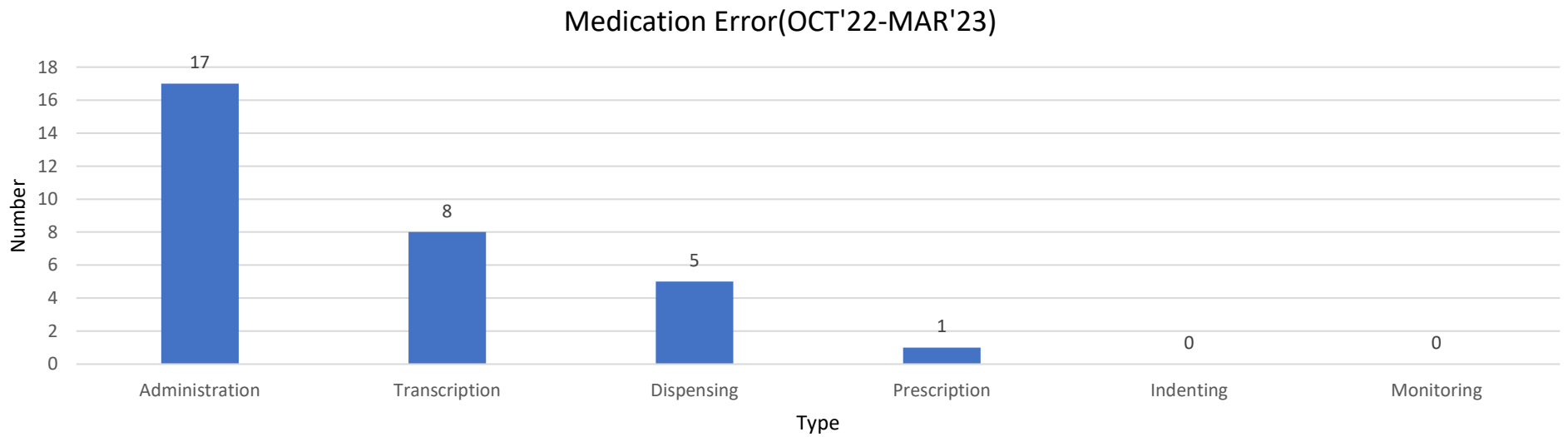

Incident Reported
Number
5
4
3
2
1
0
1
0
0
4
1
2
0
0
0
2
0
3
Oct'22
Nov'22
Dec'22
Jan'23
Feb'23
Mar'23
Month
No of Sentinal Events
Number of Near Miss Event



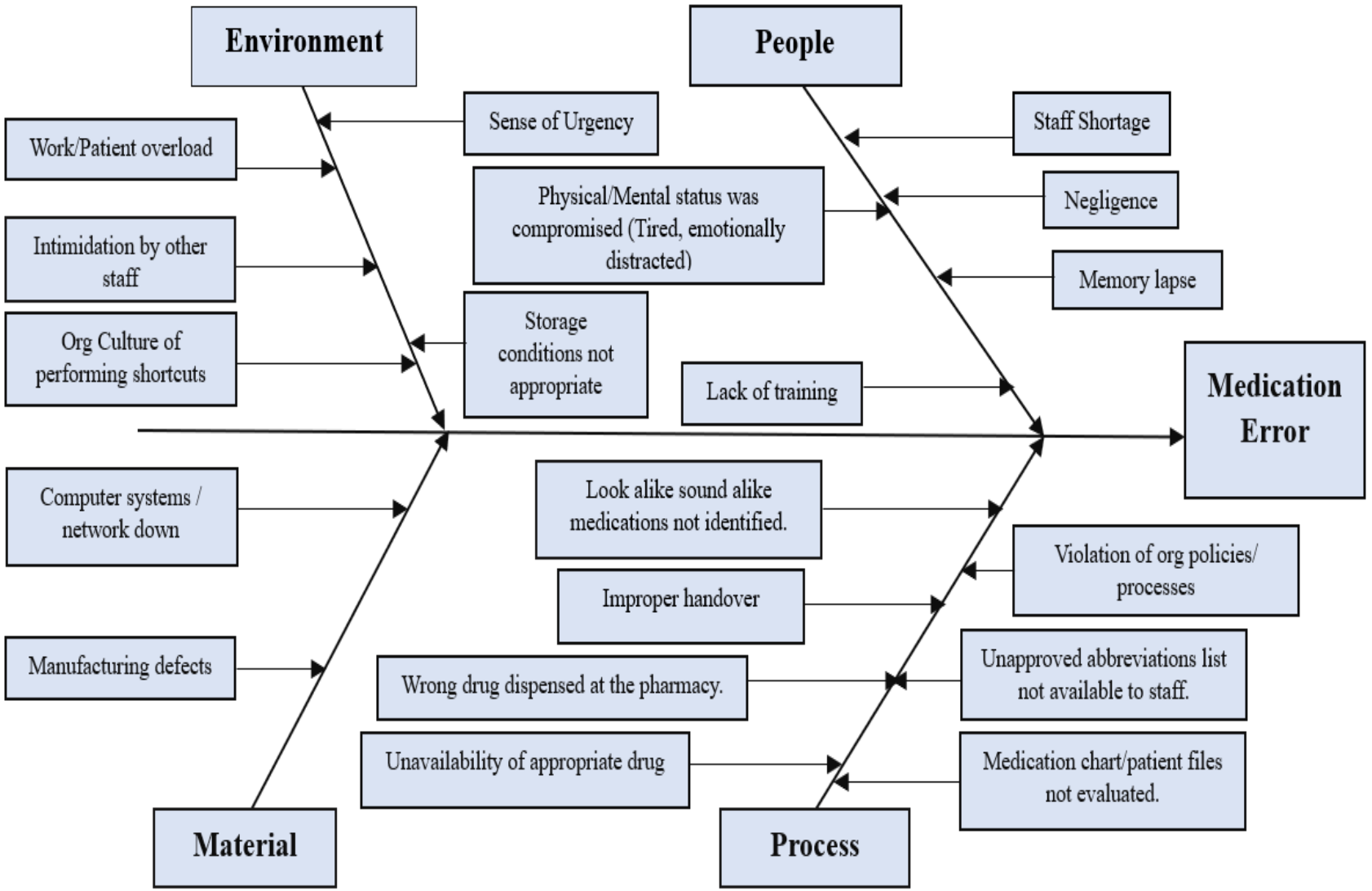
- 30.4% of the cases are Medication errors i.e., 31 in number making a maximum count.
- 10.8 % of the cases are bed sores.
- 12.7 % of the cases are other care related errors.
- 5.9 % of the cases are investigation errors.
- 2.9% of cases are Needle stick injuries.
- 10.8% of cases are security and safety incidences.
- 4.9% of the cases are fall incidences.

Medication Error

Medication Error							
Month	October	November	December	January	February	March	Number (OCT2022 TO MAR2023)
Administration Error	3	0	2	0	9	3	17
Transcription Error	0	4	1	1	2	0	8
Dispensing Error	0	5	0	0	0	0	5
Prescription Error	0	1	0	0	0	0	1



Root Cause Analysis –Medication Error



FMEA-Incident Reporting System

FMEA - Incident Reporting System Amrita Hospital Faridabad

Steps in Process	Failure Mode	Failure Cause	Effect	Occurrence	Detection	Severity	RPN	Actions to Reduce Occurrence of Failure
Staff recognises an incident	Event not recognised as Incident	Lack of understanding on the types of events to be identified	Risk of recurrence of same incident persists due to non-reporting; High risk incidents pose higher adverse outcomes as they were missed reporting earlier; Loss of opportunity for improvement.	3	5	5	75	frequent training on understanding of events and importance of incident reporting
Incident Identified & directly reported to Quality department &/or Incident identified by the staff & informed to the respective HOD/Supervisor	Event recognised as incident but not deemed important for reporting.	Lack of sensitisation & awareness on importance of immediate reporting of incidents and their relation with the safe environment.	Timely reporting of incident does not take place. An incident left unreported to the management. Risk of recurrence of same incident persists due to non-reporting; High risk incidents pose higher adverse outcomes as they were missed reporting earlier; Loss of opportunity for improvement	5	5	5	125	Focus on more frequent training regarding understanding on the types of events/ incidents to be reported & its link with Quality & Patient Safety. To modify the process of incident reporting such that incident notification are received by Authorized personnel only. Add a feature of anonimity whereever possible in the online reporting system.
		A relaxed outlook towards Safety & Quality in the facility.		6	4	5	120	
		Staff occupied with regular job related tasks.		6	5	6	180	
		Fear of reporting due to fear of punitive actions.		4	6	6	144	
		Apprehensions of the staff (step 1) in reporting the event, due to lack of the provision of Anonimity of the requestor in the current Incident Reporting system.		5	8	7	280	
		Memory Lapse of the person who identified the incident leading to non reporting.		4	8	4	128	
		Confirmation Bias: staff may ignore the incident beleiving that his/ her other colleague may report it.		6	7	5	210	
	Event recognised as an incident but not reported yet informed to respective supervisor	Apprehensions of the staff (step 1) in reporting the event, due to lack of the provision of Anonimity of the requestor in the current Incident Reporting system.	Delay in Incident recognition by Quality Department Risk of recurrence of same incident persists.	3	6	7	126	Allotment of responsibility to report incidences to a specific person in the department
Incident reported through the online incidence reporting form.	Incident not entered on the online portal.	Person too busy to make extra time to report the incidence.	Risk of recurrence of same incident persists	4	8	6	192	hospital staff on "One Timeline for All" for Incident Reporting. Enforcement of the defined timeline for reporting/ Submission of the Incident Incorporation of new technological features in the Incident Reporting Process to make it hassle free. Training on how to use online incident reporting portal
		Person not aware on how to use the online portal for incident reporting.	Delay in Incident recognition to Quality department	5	5	6	150	
		Memory Lapse		2	6	4	48	
		Staff perceives that filling & submission of online incident from is difficult and a tedious task.	Delay in Incident recognition to QA	6	7	5	210	

	Incident entered but not registered or saved on the online portal.	Due to lack of awareness/ sensitization to use the online portal.	Delay in Incident recognition to Quality department Risk of recurrence of same incident persists Delay in Corrective & Preventive Action	5	7	5	175	Ensure proper design of the online incident reporting portal for provisions for saving and retrival of old data.
		Technical glitch in the online portal for incident reporting.						
Categorization of incident based on Severity (Risk).	Incorrect Risk Categorization of Incident	Lack of understanding of Risk Identification criteria by the formulator of the online portal.	Delay in initiating the investigation Risk of recurrence of same incident persist	1	9	8	72	To modify Incident Reporting Format, in such a way so as to incorporate a standardised comprehensive Incident documentation structure. Training on how to write the incidences in a legible and understandable format. Automation of Incident Reporting Process & including the provision of Auto Capture of Incidents & updates in the same
		online form not comprehensively designed enough to incorporate incident specific details.		3	4	7	84	
	Incident categorization cannot be ascertained by the Quality department personnel.	Improper Language / grammar used to narrate the incidence in the online form difficult to comprehend.		9	1	9	81	
Quality Assurance conducts initial investigation & suggests recommendation for improvement.	Delay in initiating the Investigation	Memory Lapse	Delay in identifying the corrective & preventive action for the incident based on the investigations.	3	5	4	60	Modifications in the Incident reporting Mechanism by including the provision of "Prompts" on the visibility of Pending status of the Incident to the authorized personnels. Training of Quality department staff on appropriate investigative measures to be taken and the importance of investigationg an incident.
		No system based reminders in place to identify the pending actions.		6	7	7	294	
		Quality personnel assigned to another task.	Delay in report finalization	3	5	3	45	
		Unavailability of Quality Personnel & no handover to the colleague	Delay in report finalization	5	2	3	30	
		Unavailability of the Involved staff at the time of investigation	Investigated findings and recommendations not documented on time. Delay in identifying the corrective & preventive action for the incident based on the investigations.	5	3	4	60	
CAPA(Corrective and Preventive action) designed and put into action by respective department	CAPA(Corrective and Preventive action) not designed	Staff occupied with regular task and responsibilities.	Further delay for Actions to be implemented Risk of recurrence of same incident persist	7	4	6	168	To modify the incident reporting system to include a standardised comprehensive Incident documentation structure. Training of staff on the importance of CAPA and provission of guidence on formulation of CAPA if needed by the QA department.
		Memory Lapse		5	4	4	80	
		Staff not aware about the corrective actions to be taken.		6	4	6	144	

	CAPA(Corrective and Preventive actions) designed but not implemented	Improper design of CAPA	Further delay for Actions to be implemented Risk of recurrence of same incident persist	7	3	7	147	Formulation of standards for CAPA acceptance, varification of CAPA by Quality department. Training of staff on Importance of CAPA and its implementation
		CAPA not taken seriously by the staff and considered non Imperative for implementation.		7	4	6	168	
Monitoring	Preventive action not implemented as per the decided time line	Knowledge deficit on how to implement recommended actions	Ineffective Implementation of Action Plan Risk of recurrence of same incident persists	2	4	4	32	Training of staff on new Corrective and preventive actions.
		Memory Lapse.	Delay in implementation of recommended actions. Delay in mitigation of risk leading to chances of error occuring again.	3	5	4	60	
		A relaxed outlook towards implementation of action Plan	Delay in implementation of recommended actions.	3	5	5	75	
		delay in dissemination of information on preventive measures taken	Delay in implementation of recommended actions. Delay in mitigation Risk of recurrence of same incident persists	4	6	5	120	

Interpretation of FMEA

- A few failure causes with a high RPN number were identified and prioritised.
- The most common type of failure causes that were identified were lack of sensitization and awareness on importance of immediate reporting of incident, a relaxed outlook of staff, over occupied and over burdened staff, complexity in operation of the online portal, apprehension and punitive actions etc. The corrective and preventive action taken to prevent these failure modes include training of staff on understanding the types of incidents to be reported and the importance of there prompt reporting
- Modification of the online portal such that it is made user friendly and comprehensive, regulations on time line for all the incident reporting, emphasis on seriousness of CAPA implementation and its regular monitoring.

Conclusion and Recommendation

Any system that supports an organisation in keeping track of, investigating, and recording risky occurrences is known as an incident reporting system. It might be a risky situation, an accident, or simply a near miss. Voluntary IRS is not meant to be a precise representation of the frequency or severity of PSIs that happen within a health services setting. Instead, they provide an important tool for comprehending and addressing hidden and contributory factors in a group of PSIs.

Recommendations to encourage incident reporting

- Training of staff on the type of incidents to be reported and significance of incident reporting.
- Training of staff on how to use the online incident reporting system.
- Challenges in implementation of CAPA should be address as soon as possible.
- Training of staff on responsibilities w.r.t formulation of CAPA and its proper implementation.
- Adoption of new features in the online portal to make the incident reporting easy and comprehensive.

Conclusion and Recommendation

Recommendations to reduce errors.

Medication errors-

- Nursing staff should be trained on rights of medication administration.
- Process of documentation of medication should be improved with training of junior residents and nursing staff on proper transcription of medication.
- Frequent audit by clinical pharmacologist should be conducted.

Falls-

- Make use of side railing of the beds.
- Set bed alerts for close monitoring of patients at high-risk.
- Identify high-risk patients such as patient with neurologic symptoms and provide them with additional vigilance.
- Educate patient and family on fall prevention.

Conclusion and Recommendation

Pressure ulcer-

- Providing soft cushioning beds to decrease pressure.
- Training of staff on management of recumbent patients such as turning and reposition patients every two hours.

Patient identification errors-

- Training on patient identification
- Proper usage of ID bands in all IPD areas until the patient is hospitalized.

Equipment failure-

- Ensure timely maintenance of reusable devices and equipment’s.
- Ensuring that the technology utilised adheres to the highest quality and safety standards.