

**A PROJECT ON INCIDENT REPORTING THROUGH QUALITY
SOFTWARE IN A TERTIARY CARE HOSPITAL**

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 and Health Management

by

NIHARIKA JAGGI

Under the Supervision and Guidance of

JAGAJEET PRASAD SINGH

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation "*A Project On Incident Reporting Through Quality Software In A Tertiary Care Hospital*" titled is the bonafide record of my original researchwork. I thereby confirm that it has not been submitted to any other university or institution for the award of any degree or diploma. Information that is derived from the published or unpublished work of others has been duly acknowledged in the report.



NIHARIKA JAGGI

Date: 19.05.2023

SPSH/HRD/2023/15
Dated: May 19, 2023

To Whomsoever It May Concern

This is to certify that Dr. Niharika Jaggi, a student of MBA in Hospital & Health Management Program (IIHMR University), has completed her internship in the Department of Quality Assurance for a period of three month w.e.f. February 23, 2023 to May 19, 2023.

During her training program, she had portrayed a good code of conduct and bears a good moral character. Her aptitude towards learning and growing professionally was remarkable.

We wish her success in her future endeavors.

For Satguru Partap Singh Hospitals,

Mankamwar Kaur

Authorized Signatory

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CERTIFICATE

This is to certify that NIHARIKA JAGGI in partial fulfillment of the requirements for the award of the degree of MBA Hospital and Health Management from the prestigious IIHMR University, Jaipur has successfully completed her internship at SPS Hospitals Ludhiana during February 20, 2023 - May 19, 2023.



Head Quality Assurance
SPS Hospital

Date: 19th May, 2023

Place : Ludhiana

CERTIFICATE

This is to certify that dissertation titled “*A project on Incident Reporting through Quality Software in a Tertiary Care Hospital*” is a record of the detailed research work undertaken by Niharika Jaggi in partial fulfillment of the requirements for the award of the degree of MBA Hospital and Health Management from the IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
IIHMR University, Jaipur

Date:

School Dean
IIHMR University, Jaipur

ABSTRACT

BACKGROUND : Incident reporting process in healthcare indicates the systematic process of reporting any form of uncertain or unexpected events, incidents, or near-miss events that occur within the healthcare organizations.

Such unintended events include nursing and clinical errors, adverse events, patient falls, medication errors, equipment malfunctions, and other incidents that severely compromise patient safety.

The end goal of incident reporting is to provide continuous improvement within a hospital. By encouraging staff members to report incidents, healthcare facilities can figure out potential risks, analyze the root causes, and implement preventive measures to avoid future mishappenings.

Incident reporting plays an important role in identifying patterns, trends, and areas of improvement related to patient safety and quality of healthcare service delivery.

Confidentiality is the key principle in incident reporting, ensuring that healthcare professionals feel confident and comfortable while reporting incidents without any fear of retribution.

Incident reporting in healthcare sectors can be performed through various methods, including electronic reporting systems, paper-based forms, or web-based platforms. These systems include standardized incident report forms to receive details of the incident such as the date, time, location, individuals involved, description of the incident, and any harm caused to the patient or any staff member.

The reported incidents are then analyzed, categorized, and used to develop preventive method strategies for improving patient safety, enhancing patient care methods, and reducing the occurrence of similar incidents in the future.

Therefore, incident reporting in hospitals is very important in order to provide patient safety, aiding in identification of risks and the implementation of

continuous care.

METHOD : It is a MIXED-METHODS APPROACH method of study. Study is done to investigate the benefits of incident reporting using quality software (MEDBLAZE) in a tertiary care hospital

Source of data studied and analyzed come from two sources:

Incident Reports and Staff Surveys

The Incidence reports will be collected from two diverse groups:

- First who use the quality software for incident reporting and
- Second group who still use the old manual reporting method

Feedback forms were prepared to assess the results of usage of the software by the staff and a detailed survey was conducted among hospital staff to understand their opinions and attitudes towards the digital incident reporting system software.

RESULTS : A Survey was conducted among Healthcare professionals at SPS hospitals, Ludhiana to evaluate the effectiveness of implementing Digital Software for Incident Reporting compared to Manual Reporting Methods.

Approximately 85% of the respondents reported that the software streamlined the reporting process, permitting them to submit incidents more quickly.

CONCLUSION : The elimination of paperwork and the predetermined set of incident categories are the key factors contributing to the improvement.

The increased efficiency, accuracy, real-time notifications, comprehensive analytics, and improved staff engagement contribute to better patient safety outcomes and a more effective incident management process.

This thesis explains the implementation of a quality software incident reporting system software in a tertiary care hospital and evaluates its impact on incident reporting process.

Anonymousness and ease of use were considered as reasons for the increased reporting. The detailed analysis of the incidents reported indicate that the system identified and addressed all the safety concerns effectively.

The thesis report concludes that quality software incident reporting systems can therefore significantly improve incident reporting in tertiary care hospitals. It is suggested that hospitals consider implementing quality software incident reporting system to improve patient satisfaction and a continuous quality improvement approach along with patient safety management.

ACKNOWLEDGEMENT

I express my heartfelt gratitude and thankfulness to all the people who have helped me in the completion of my dissertation. Their support, encouragement and assistance have made it all possible. I would firstly extend my thanks to my Mentor Mr. Jagajeet Prasad Singh, whose academic help has been invaluable.

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I would like to acknowledge our DEAN Dr. Mahender Kumar and other teachers of my college who have helped develop in me the critical thinking skills, knowledge, and wisdom needed to shape my career.

Lastly, I want to thank all those individuals who have participated in this project with your valuable inputs and contributions. Your willingness to share your findings have helped me complete this study. All this help has helped me grow both personally and professionally.

With heartfelt appreciation,

NIHARIKA JAGGI

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CHAPTER-1 INTRODUCTION

The introduction of digital software solutions to simplify and enhance the incident reporting process has been made possible by the innovations in technology. Digital software has the ability to standardize reporting formats, automate data gathering, simplify data analysis, improve follow-up communication, and more. As a promising strategy to improve productivity, accuracy, and effectiveness in healthcare organizations, the use of digital software in incident reporting has drawn attention (Smith et al., 2018; Jones & Johnson, 2020).

The simplicity of use of digital software for recording events is one of its main advantages. Intuitive functions, standardized forms, and user-friendly interfaces make it simpler for healthcare personnel to report incidents accurately and immediately. According to a study by Johnson et al. (2019), the adoption of digital incident reporting software increased reporting rates significantly, demonstrating higher usability and user satisfaction.

Moreover, Digital software can improve communication and follow-up procedures in addition to incident reporting processes. Automated reminders, notifications, and monitoring methods allow for quick investigation and resolution of reported events. According to a study by Anderson et al. (2020), the usage of digital reporting software increased teamwork and communication within the healthcare industry, resulting in quicker and more efficient incident resolution.

This dissertation report aims to provide a detailed explanation of the advantages of incident reporting through digital quality software in a tertiary care hospital over the traditional manual incident reporting methods.

The objectives of a study are:

- To evaluate the efficiency of digital reporting process of incident reporting.
- To determine the level of satisfaction and user experience of healthcare providers and staff with incident reporting software versus manual reporting in hospitals
- To compare Manual and Digital Reporting Process.

The Incidence reports will be collected from two diverse groups:

- First who use the digital quality software for incident reporting and
- Second group who still use the old manual reporting method

The staff surveys will be conducted for the staff members involved in incident reporting tasks in both the above groups. The data collected will be studied and analyzed using qualitative and quantitative methods.

The thesis report concludes that quality software incident reporting systems can therefore significantly improve incident reporting in tertiary care hospitals. It is suggested that hospitals consider implementing quality software incident reporting system to improve patient satisfaction and a continuous quality improvement approach along with patient safety management.

CHAPTER-2 REVIEW OF LITERATURE

S.No.	Title	Author(s)/Year	Description
1	“What to do with healthcare Incident Reporting Systems”	Julius Cuong Pham, Thierry Girard, Peter J. Pronovost. (April 27, 2022)	This paper reinstates the need for proper incident reporting system and its influence in improving patient safety. The pros and cons of IRS (Incident Reporting System) and their value is discussed. A number of further approaches are suggested to improve the value of Incident Reporting Systems.
2	“Using Incident Reporting to Improve Patient Safety: A Conceptual Model”	Peter J Pronovost, Christine G Holzmüller, Jonathan Young, Paul Whitney (March 2007)	This study/paper discussed the role of and events in patient safety reporting systems and provides a detailed conceptual model to support the use of reporting to provide effective patient safety measures taken in hospital scenarios. Report further delves to realize the full potential of the system by highlighting multiple factors.
3	“Incident Report-An Indispensable Pillar in the Health Sector”	Joyce Joseph, Mohanasundari Kuppuswamy (Year 2019)	This study aims to bring forth the value of Incident Reporting and study its evolution over a timeframe. Further creating awareness about the use this process in the Indian Health sector and health professionals.
4	“The use of electronic incident reporting system: Influencing factors”	Dr Saja A. Al-Rayes, Falak Adel Aldar, Nada Saud Al Nasif, Zainab Ibrahim Alkhadrawi (Jan 2020)	This study aims to calculate the factors governing the shift from manual incident reporting to digital incident reporting in a renowned Dental Hospital located in Saudi Arabia. The user acceptance of the system was calculated and compared amongst the demographics to find that no association was found except the job title of the staff using the software
5	“Assessing the healthcare quality issues for digital incident reporting in Sweden:	MD Shafiqur Rahman Jabin, Mary Steen, Dianne Wepa, Patrick Bergman (Jan 2023)	This study aims to find out the gaps between the reporting and investigation levels of Incident reporting in a digital process. Various quality issues were explored that were negatively affecting the digital incident reporting process. Using increased staff participation and training, refining existing

	Incident reports analysis”		systems, ensuing unit based local reporting and others were found to lessen the gap
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CHAPTER 3 – METHODOLOGY

It is an Observational Cross-Sectional Descriptive Study, where the data from the target population was collected in the form of a Questionnaire.

The findings will be displayed in a descriptive format

An observational cross-sectional study is a type of analysis that gathers information from a population or sample at a certain time to determine the frequency or relationship of key variables. The researcher merely observes and assesses the variables in an observational cross-sectional study as they naturally occur without intervening or manipulating any of the variables.

Comparing the results and efficiency of incident reporting using digital software with those of manual reporting techniques is part of the process. With the help of this layout, it is possible to evaluate the advantages and effects of utilizing digital software for incident reporting.

In this Study, we calculated the Turn Around Time For both Manual and Digital Reporting by calculating TAT (Date of submission-Date of occurrence) of the reported Incidents.

It is crucial to recognize the study's limitations, including possible biases, sample representativeness, and the generalizability of the results. It is transparent and aids in the understanding of the study's findings when these limitations are taken into account.

Sample size was taken for the complete year of 2021 and analyzed throughout the annual cycle.

Source of data studied and analyzed come from two sources:

- Incident Reports
- Staff Surveys.

The sample can consist of nurses, physicians, chemists, or other pertinent employees

involved in incident reporting procedures.

The Incidence reports were collected from two diverse groups:

- First who used the quality software for incident reporting and
- Second group who still use the old manual reporting method

The staff surveys were conducted for the staff members involved in incident reporting tasks in both the above groups. The data collected was studied and analyzed using qualitative and quantitative methods.

SETTING:

Study is done at **SPS Hospitals, Ludhiana, 141002** (350 bedded)

STUDY SAMPLE:

Data for the year 2021 was studied and Turn Around Time (TAT) for the 316 & 505 Incident reporting is calculated for both manual and digital reporting.

The data studied was sourced from SPS Hospital database of Physical and Digital data from various sources in the quality department. Data pertaining to the year 2021 was the primary focus of the study.

DURATION OF STUDY: 20th Feb,23 - 19th May,23

SAMPLE SIZE: Turn Around Time (TAT) for Incident Reporting was calculated for **316 & 505 incidents** reported in the year 2021.Total Number of Incidents Reported were analyzed from Jan 1,2021 to Dec 1,2021.

DATA COLLECTION PROCEDURE:

Data was collected through the Incident Reporting Forms which are used for Manual Reporting.

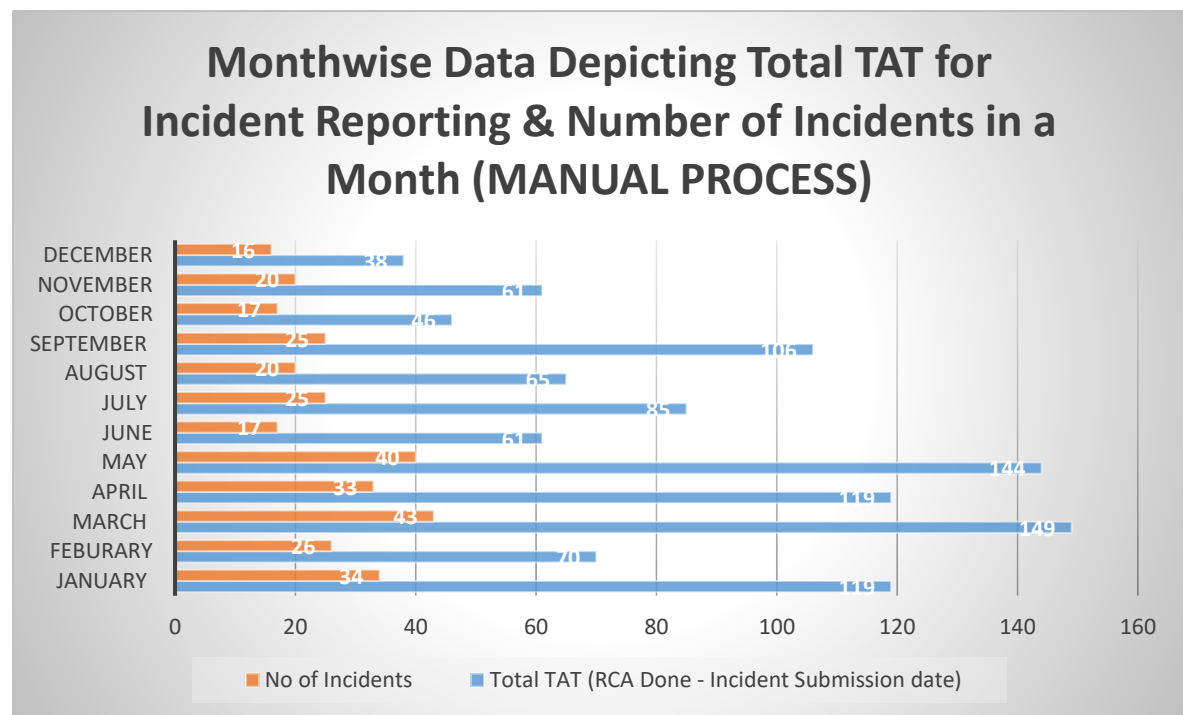
Whereas, MEDBLAZE (digital software used in SPS Ludhiana) was used to analyze digital incidents reported.

This project uses data routinely submitted by all the departments (general surgery, medicine, gastronomy, orthopedics, pulmonology, neurology, and nephrology) of SPS Hospital, Ludhiana of incidents that occurred in the hospital over a period from 1st Jan 2021 to 31st Dec,2021.

CHAPTER 4: RESULTS

In the graphics that follow, comparison of the results between manual and digital incident reporting is shown:

MANUAL INCIDENT REPORTING:



The graph highlights the **Turn Around Time** and the **Number of Incidents** obtained in the case of Manual Incident Reporting. The graph offers a visual depiction of the study's results.

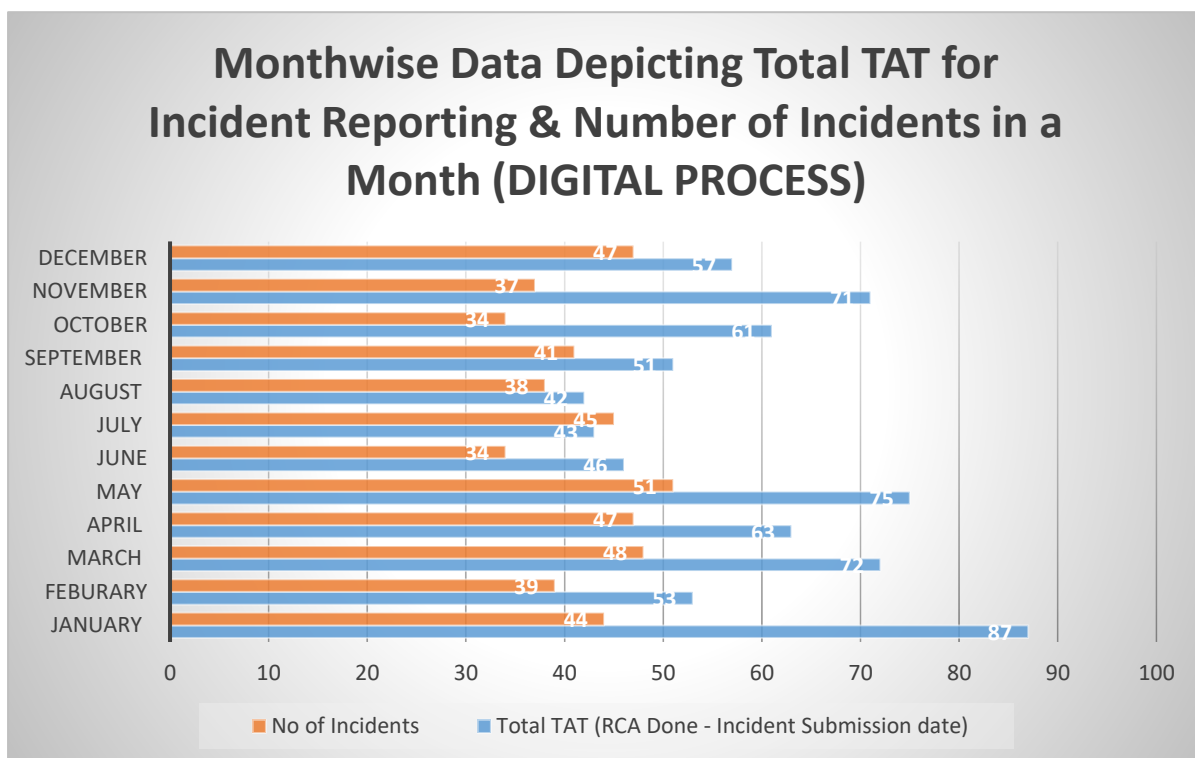
- Regular entries were done based on the incident forms received and excel sheets were prepared where TAT was calculated

NUMBER OF INCIDENTS REPORTED AND TURN AROUND TIME :

Manual Incidence Reporting Method			
	Total TAT (RCA Done - Incident Submission date)	No of Incidents	TAT Average
January	119	34	3.50
February	70	26	2.69
March	149	43	3.47
April	119	33	3.61
May	144	40	3.60
June	61	17	3.59
July	85	25	3.40
August	65	20	3.25
September	106	25	4.24
October	46	17	2.71
November	61	20	3.05
December	38	16	2.38
		316	3.29

-As shown in the table 316 Incidents were reported in one year under Manual Incident Reporting with Turn Around Time (TAT) 3.29.

DIGITAL INCIDENT REPORTING:



NUMBER OF INCIDENTS REPORTED AND TURN AROUND TIME :

Under New Digital Incidence Reporting Method			
	Total TAT (RCA Done - Incident Submission date)	No of Incidents	TAT Average
January	87	44	1.98
Feburary	53	39	1.36
March	72	48	1.50
April	63	47	1.34
May	75	51	1.47
June	46	34	1.35
July	43	45	0.96
August	42	38	1.11
September	51	41	1.24
October	61	34	1.79

November	71	37	1.92
December	57	47	1.21
		505	1.44

According to the graphical representation, 505 incidents were reported Through Digital reported with and average TAT of 1.44 incidents.

- The graphs highlight the efficiency improvements brought about by the use of digital incident reporting software and the increase in the number of incidents.

PROCESS FLOW OF INCIDENT REPORTING

Chart 1: Flowchart for Manual Incident Reporting

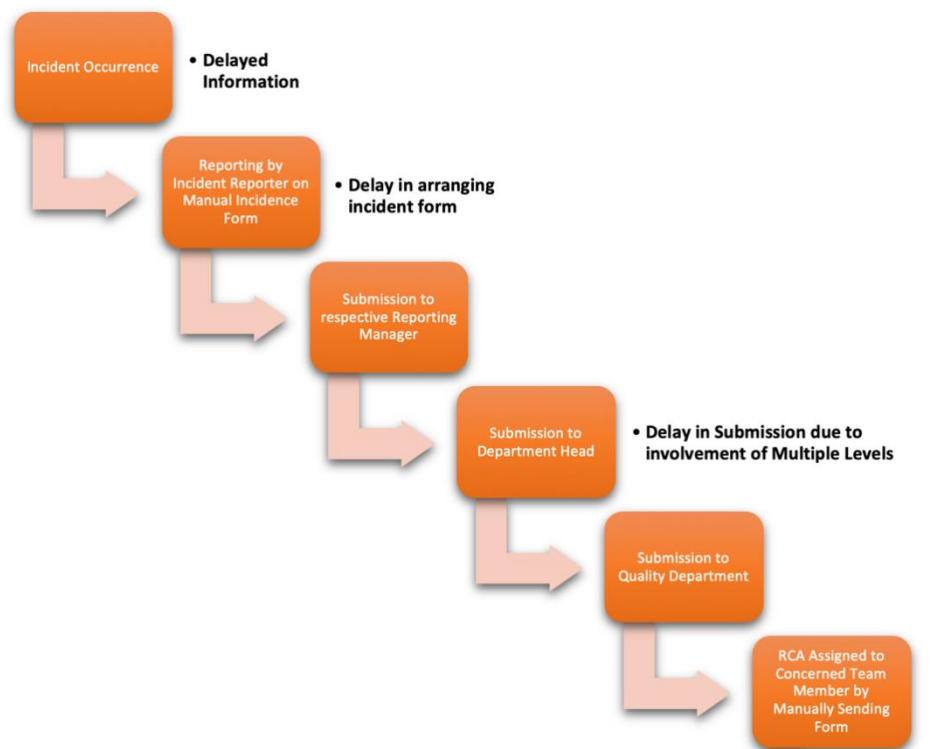


Chart 2: Flowchart for Manual Incident Reporting (continued)

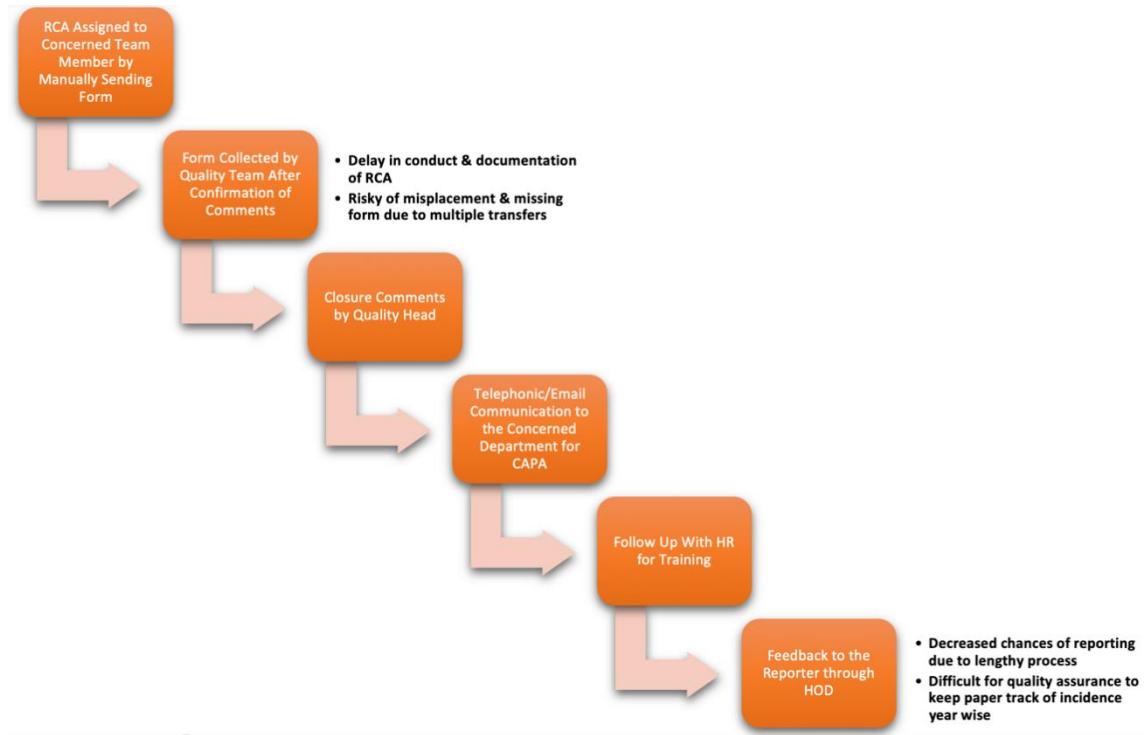
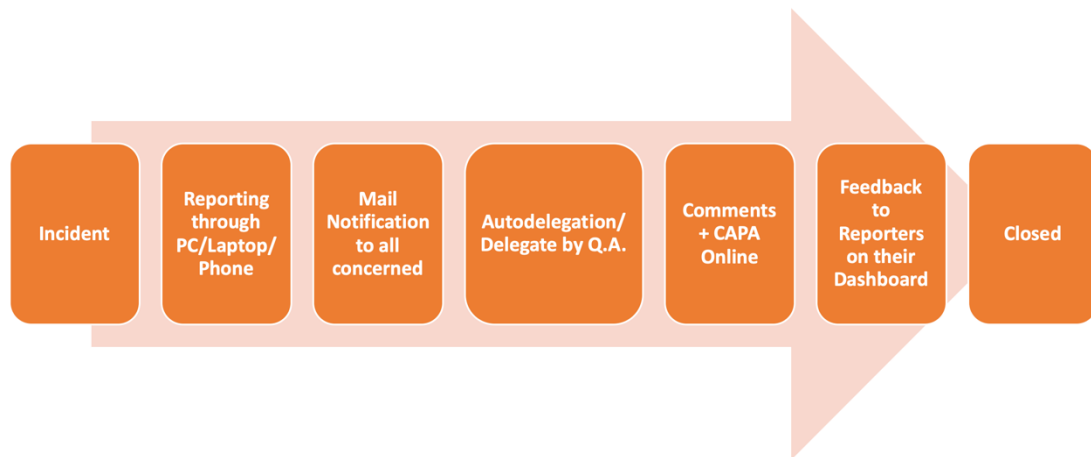


Chart 3: Flowchart for Digital Incident Reporting



-The flowcharts clearly indicate improved efficiency and less time consumption in case of digital incident reporting whereas manual incident reporting process involves more involvement of staff members and is more time consuming.

FEEDBACK COLLECTION FOR DIGITAL INCIDENT REPORTING:

A Survey was conducted among Healthcare professionals at SPS hospitals, Ludhiana to evaluate the effectiveness of implementing Digital Software for Incident Reporting compared to Manual Reporting Methods.

<u>SURVEY QUESTION</u>	<u>PERCENTAGE OF PEOPLE RESPONDED</u>
Accuracy	82%
Rate of Reporting Incident	95%
Ease of Use	85%
Efficiency of Time	92%
Follow-up Actions	88%

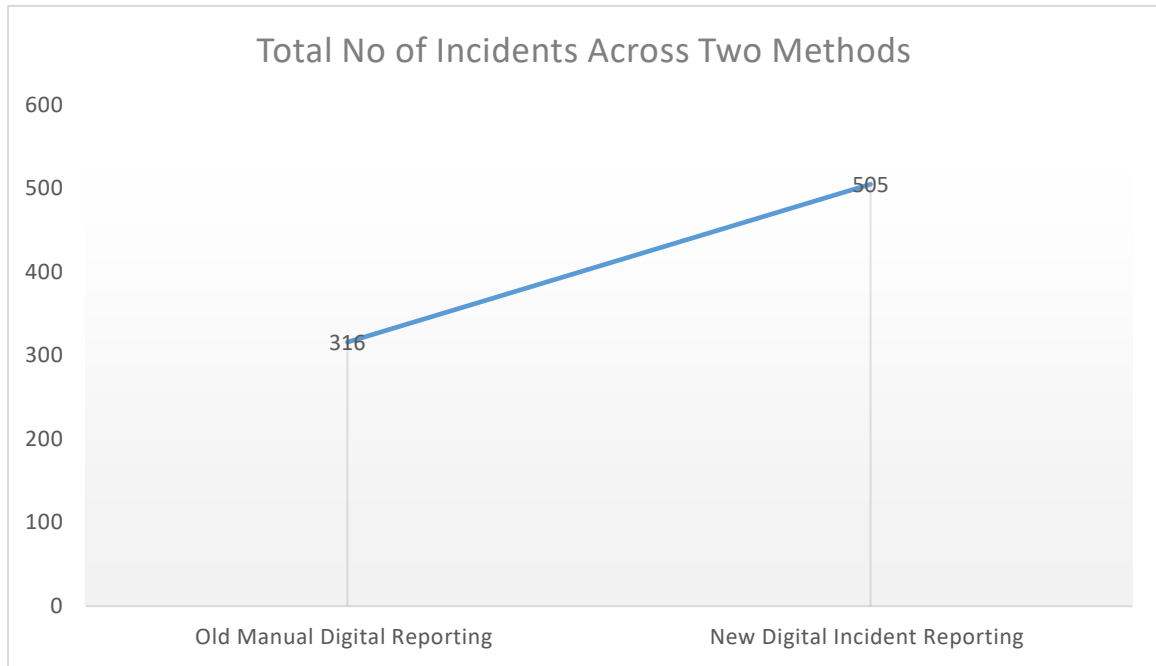
The results reported majorly positive outcomes associated with the use of digital software:

1. **Increased Efficiency of Incident Reporting:** The survey showed that the adoption of digital software remarkably improved the efficiency of incident reporting processes. Roughly, 85% of respondents reported that the software streamlined the reporting process, permitting them to submit incidents more quickly. The elimination of paperwork and the predetermined set of incident categories are the key factors contributing to the improvement.
2. **Enhanced Data Accuracy:** The use of digital software greatly impacted the accuracy of incident reporting. About 90% of respondents expressed confidence in the accuracy of their reports, allocating it to the software's built-in validation checks and error detection protocols. Moreover, the software's intuitive user interface and structured data entry fields helped ensure that all necessary information was captured, minimizing missing or incomplete data in incident reports.
3. **Real-time Notifications and Alerts:** The Digital software enabled real-time notifications and alerts for received incidents, fostering timely responses and taking appropriate actions. Maximum respondents reported that the software's automated notification system that promptly alerted relevant stakeholders, such as supervisors, quality management teams, and risk managers, about critical incidents. This feature allowed for smooth interventions, facilitating early solutions to problems and preventing patient harm.
4. **Reporting Analytics:** The survey revealed that digital software facilitated comprehensive reporting analytics for incident management. Nearly 80% of respondents indicated that the software's reporting systems provided valuable insights into incident trends, root causes, and areas requiring improvement. The ability to generate customized reports and analyze data through charts and graphs enabled healthcare professionals to make informed decisions regarding quality improvement methods.

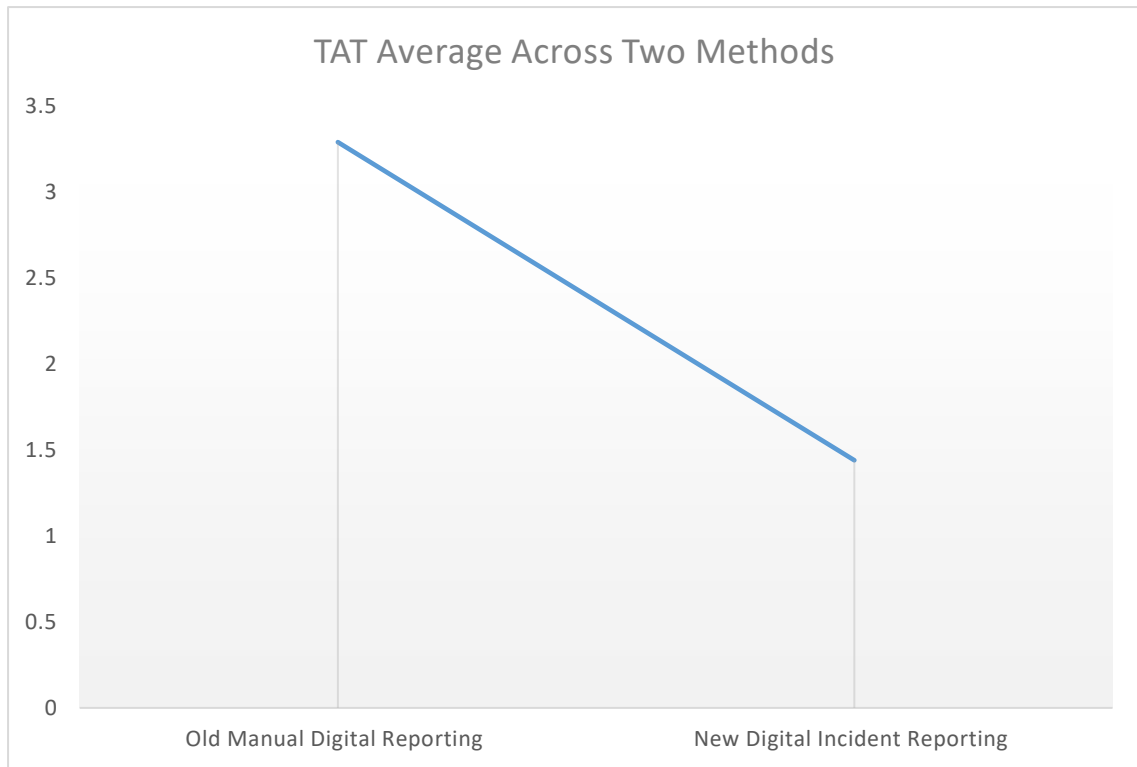
5. **Increased Staff Satisfaction:** The implementation of digital software positively influenced staff engagement and satisfaction levels. More than 75% of respondents felt higher job satisfaction because of the simplified and user-friendly nature of the software. The ease of reporting incidents resulted in increased staff motivation to participate in incident reporting, eventually leading to a safer culture within the organization.
- The results clearly show the outcomes of using digital software for incident reporting in a hospital setting. The increased efficiency, accuracy, real-time notifications, and improved staff engagement lead to a better patient safety outcome and a much better incident management process

CHAPTER 5: DISCUSSION

It is clear from the below graph that more occurrences are recorded using digital software than through manual reporting techniques. The number of reported events continues to increase in the first graph showing the use of digital software, demonstrating the efficiency and popularity of the digital system. The second graph, which emphasises manual reporting, on the other hand, can show restricted or uneven growth, possibly as a result of things like human mistake, time restraints, or other difficulties associated with manual operations.



The graph clearly shows that digital incident reporting dramatically saves turnaround time when compared to manual reporting. According to the data, the two reporting systems take significantly different amounts of time to finish. This graph shows the efficiency improvements brought about by the use of digital incident reporting software.



INFERENCE OF THE ANALYSIS

	Total No of Incidents	TAT Average
Old Manual Digital Reporting	316	3.29
New Digital Incident Reporting	505	1.44

CHAPTER – 6: CONCLUSION

Through this dissertation project, it has been observed that the use of digital software significantly improves the incident reporting process compared to manual reporting methods.

The results in the survey clearly demonstrate the benefits of utilizing digital software for incident reporting in a hospital setting.

The increased efficiency, accuracy, real-time notifications, and improved staff

engagement contribute to a much better patient safety outcomes and a much more effective incident management process.

Through this dissertation project, it has been observed that the use of digital software remarkably improves the incident reporting flow of processes as compared to manual reporting methods.

The dissertation study indicates that the digital software allows ease of use, efficiency and saving of time, accuracy of reporting and faster reporting rate, and follow-up actions. The results indicate that a vast majority of respondents found the software very easy to operate, saved time and effort in reporting of incidents. The built-in formats of the software's along with the drop-down menus resulted in improved accuracy in reporting of incidents.

The digital software also provided better follow-up of actions, making sure that the reported incidents were addressed timely and effectively.

The overall results of utilizing digital software for incident reporting in a hospital have significant advantages for patient safety and quality of care. By streamlining the reporting process, reducing errors, and increasing reporting rates, the software enables healthcare professionals to identify potential risks and incidents more effectively.

This directly leads to improved patient safety, enhanced organizational learning, and the implementation of strategies to prevent any possible future incidents.

CHAPTER-7: REFERENCES

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