

**STUDY OF COMPLIANCE RATE OF VENOUS
THROMBOEMBOLISM (VTE) PROPHYLAXIS FORM IN IN-PATIENT
DEPARTMENTS**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of
the degree of Master of Business Administration (MBA)

in

Hospital and Health Management by

Dr. Sonam Kelzang Wangzen

Under the Supervision and Guidance of

Dr. Vinod Kumar SV

Professor & Dean In-Charge

SD Gupta School of Public Health

IIHMR University, Jaipur

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “**STUDY OF COMPLIANCE RATE OF VENOUS THROMBOEMBOLISM (VTE) PROPHYLAXIS FORM IN IN-PATIENT DEPARTMENTS**” 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)

Dr. Sonam Kelzang Wangzen

MBA Hospital and Health Management

2021-23

CERTIFICATE

This is to certify that **Dr Sonam Kelzang Wangzen** in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed his internship at **Narayana Multispeciality Hospital, Jaipur** during February 22- May 22, 2023.

Place: Jaipur

Date: 22/5/2023

Nikhil Mathur

**Deputy General Manager- HR
Narayana Multispeciality Hospital**

Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation titled “Study of compliance rate of Venous thromboembolism (VTE) prophylaxis form in In-patient department (IPD)” is a record of the research work undertaken by **Dr Sonam Kelzang Wangzen** in partial fulfilment 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.

Dr Vinod Kumar SV

IIHMR University, Jaipur

Date:

Dr (Col) Mahender Kumar

IIHMR University, Jaipur

Date:

Abstract

Background:

Objective: The main objective of this study was to assess the compliance rate of Venous thromboembolism (VTE) prophylaxis form in the In-patient departments in Narayana multispeciality hospital in a given time frame. The secondary objective was to compare the VTE prophylaxis form compliance with other hospital forms such as Pain assessment and Fall assessment forms.

Materials and Methods: All patients being admitted from February 22nd - May 22nd 2023 is considered to be the study population and out of which 615 samples were collected and analysed through the use of a detailed questionnaire

Results:

The compliance rate of VTE prophylaxis form was above 99% for almost all the wards except for the CTVS ward which was able to achieve only 95% compliance rate

However, the compliance rate of both Pain and Fall assessment forms was 100% in all the selected wards

Conclusion:

High compliance rate indicates strict adherence to hospital policies and protocols for achieving optimum patient safe and quality care.

Content

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Most importantly I would like to thank my parents, Dr. Jigmi Singay and Mrs. Sonam Zangmo for their continuous support and guidance throughout this programme.

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Thank you

Dr. Sonam Kelzang Wangzen
MBBS ,MBA hospital Management

INTRODUCTION

Venous thromboembolism (VTE) is a condition caused due to the presence of blood clots in the vein. VTE is comprised of deep vein thrombosis (DVT) and pulmonary embolism (PE). DVT is a medical condition in which there is formation of blood clots in the deep veins. When the blood clots break from the deep veins and get lodged into the blood vessels supplying the lung, it leads to Pulmonary Embolism.

Risk factors for VTE:

1. Injury to a vein often caused due to accidents or surgeries.
2. Blood stasis or slow blood flow due to prolonged immobilization.
3. Increase in oestrogen levels caused by birth control pills, Hormonal Replacement therapy (HRT).
4. Chronic diseases such as cardiovascular, respiratory illnesses, cancer.
5. Other factors include previous history of DVT, Age, Obesity, inherent clotting disorders.

Therefore, it is important to conduct a VTE risk assessment to every patient being admitted with the help of VTE prophylaxis form. This form helps clinicians, nurses to rule out the risk factors or prepare the patient for prophylactic management to prevent any chances of developing VTE. Thus, serving as an important tool in ensuring compliance with the guidelines and protocols for VTE prevention in hospitals

Compliance with VTE prophylaxis is crucial in hospital wards due to several reasons.

1. Introduction of a standardized VTE risk assessment and decision-making approach based on the risk status of the patient.
2. Use of standardized VTE risk assessment and decision-making approach helps reduce errors in the areas of medical management.
3. Contributes to research through data collection and quality improvement initiatives for VTE prevention strategies, patient safety and quality care.

In conclusion, VTE prophylaxis forms in hospitals play a vital role in ensuring the most appropriate and effective management of VTE. These forms provide a standardized approach to risk assessment, decision making and documentation. These forms also help to reduce errors, improve interprofessional collaboration and contribute directly to quality improvement measures.

Thus, by adhering to these forms, the hospital is able to enhance patient safety and ensure optimal care to patients who are at the risk of developing VTE.

AIM: To find out the compliance rate of VTE prophylaxis form in wards of Narayana multi-speciality hospital, Jaipur.

OBJECTIVES:

1. To determine the current compliance rate of health care professionals in completing VTE prophylaxis forms in the concerned hospital wards
2. Identify the reasons for non-compliance or incomplete VTE prophylaxis form completion in hospital wards.
3. Identify any barriers specific to hospital ward settings that hinder compliance with VTE prophylaxis form completion and explore potential strategies for improvement.
4. Compare compliance rates across different hospital wards to identify any variations and potential areas for targeted interventions.

HYPOTHESIS: The hypothesis for the compliance rate of VTE prophylaxis form completion in hospital wards could be as follows:

- The compliance rate of VTE prophylaxis form completion among doctors in hospital wards is lower than the average compliance rate compared to other forms such as Pain, Fall Risk Assessment form forms compared to the average compliance rate observed across various healthcare settings.

REVIEW OF LITERATURE

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METHODOLOGY

1. **STUDY DESIGN:** Cross sectional study design
 - The study design used in this study will be cross sectional study design
2. **SETTING:** Narayana Multi Speciality Hospital, Jaipur
3. **STUDY POPULATION:**
 - Inclusion criteria: All patients being admitted in MICU, CCU, SICU, HDU, General Ward, ANC ward, CTVS ward, Private ward, Semi Private Ward and PICU from Feb 22nd to May 22nd 2023
 - Exclusion criteria: OPD, Post OP ward, NICU.
 - Study tools: The Study tool used in this study is a detailed questionnaire which includes questions such as
 - a. Name of Speciality
 - b. Area of audit
 - c. MRN (Medical Record Number) of the samples audited
 - d. Verify whether the prophylaxis used is current and updated
 - e. Whether VTE risk assessment is done
 - f. If so, then the level of risk identified
 - g. Prophylaxis advised as per the level of risk
 - h. Contraindications for prophylaxis mentioned, where ever applicable
 - i. Whether prophylaxis administered or not
 - j. Re assessment of VTE risk performed
4. **DURATION OF STUDY:** February 22nd – May 22nd 2023
5. **SAMPLE SIZE:** 615(all patients admitted from Feb 22nd to May 22nd) excluding the dates March 19-April 4th due to closure of hospital in lieu of the protest against the Right to Health bill.
6. **SAMPLING TECHNIQUE:** inclusion of all participants being admitted to the concerned wards in the given time period
7. **DATA COLLECTION PROCEDURE:** IPD case files
8. **DATA ANALYSIS PLAN:** Descriptive analysis through the collection of data obtained within a given time period
9. **ETHICAL CONSIDERATIONS:** Consent from all the patients.

ANALYSIS

The methodology used in this study will be the cross-sectional study design. The hypothesis in this study design is to prove that the compliance rate of VTE prophylaxis form is lower than the compliance rate of other preventive forms such as fall assessment and pain assessment forms. The key research questions in this study design are as follows

- Is the compliance rate of VTE prophylaxis form lower than the compliance rate of other forms in the IPD department?
- If so, is the compliance rate of VTE prophylaxis form low in every IPD departments?
- What are the barriers to having a low compliance rate of VTE prophylaxis form?
- Suggestions to improve the compliance rate of VTE prophylaxis form

The study setting will be conducted in Narayana Multi Speciality Hospital, Jaipur. The study design is of descriptive in nature and the study population includes all patients admitted in the IPD departments (except for Neonatal ICU, Post Op wards) from February 22nd 2023 to May 22nd 2023. A total of 615 samples was collected for 12 weeks.

Table 2.1 – Name of the wards and the no. of samples collected from each ward

IPD WARD	TOTAL SAMPLES COLLECTED
General Ward	120
Cardiothoracic Vascular Surgery Ward (CTVS)	90
Private Ward	75
Semi Private Ward	80
Ante Natal Care Ward (ANC)	25
Paediatric ICU	6
Medicine ICU	75
Surgery ICU	44
Critical Care Unit (CCU)	40
High Dependency Unit (HDU)	60
Total	615

In the case files of the above 615 samples, the forms to be assessed was

1. VTE prophylaxis form
2. Pain Assessment form
3. Fall Assessment form

This study was a qualitative approach in which data was collected in the concerned IPD wards on a weekly basis for 12 weeks. It was a systematic approach with strict adherence to the hospital's guidelines and protocols so as to not to obstruct the hospitals daily activities while conducting this study. A descriptive analysis will be conducted to analyse the data collected and compared with the compliance rate of other forms in the IPD departments. Hence to prove the above-mentioned hypothesis, the compliance of

Pain and Fall Assessment forms were compared against the compliance of VTE prophylaxis form.

RESULTS

Given below shows the following tables and graphs of each form and their compliance rate in the given period from February 22nd to May 22nd 2023.

Table 3.1 Compliance Rate of VTE prophylaxis from

WARD	VTE prophylaxis form
Private Ward	99%
Semi Private Ward	99%
General Ward	99%
CTVS ward	95%
ICU	98%
HDU	98%
CCU	99%
ANC ward	100%
General Paediatric Ward	100%

Graph 3.1 VTE prophylaxis form (Feb 22nd 2023- May 22nd 2023)

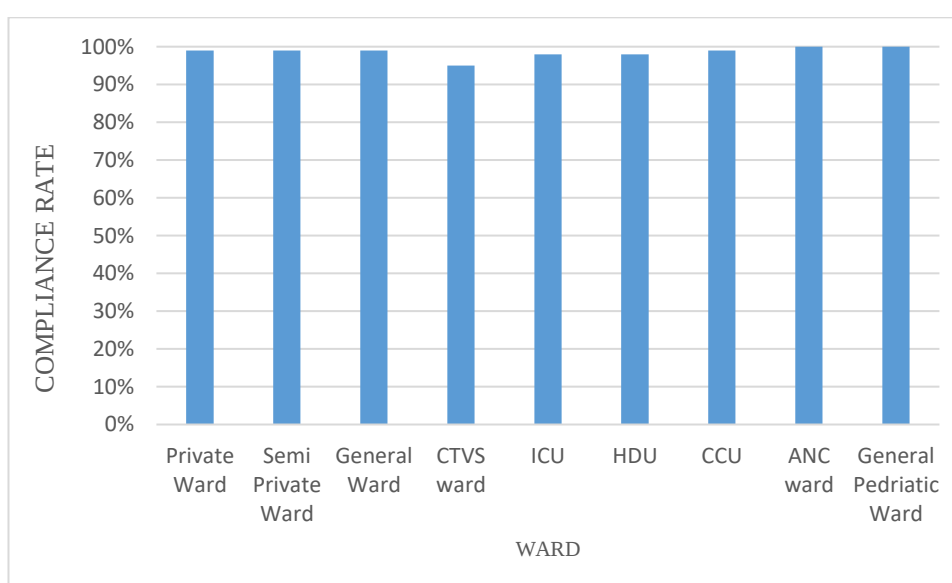


Table 3.1 shows the compliance rate of VTE prophylaxis form in the IPD departments where the lowest compliance rate of 95% was observed in the CTVS ward and the highest compliance rate was 100% in the General Ward and ANC ward.

Graph 3.1 depicts the graphical representation of VTE prophylaxis form compliance

Table 3.2 COMPLIANCE RATE (Feb 22nd 2023-May 22nd 2023)

WARD	Pain assessment form
Private Ward	100%
Semi Private Ward	100%
General Ward	100%
CTVS ward	100%
ICU	100%
HDU	100%
CCU	100%
ANC ward	100%
General Paediatric Ward	100%

Graph 3.2 COMPLIANCE RATE (Feb 22nd 2023- May 22nd 2023) Pain assessment form

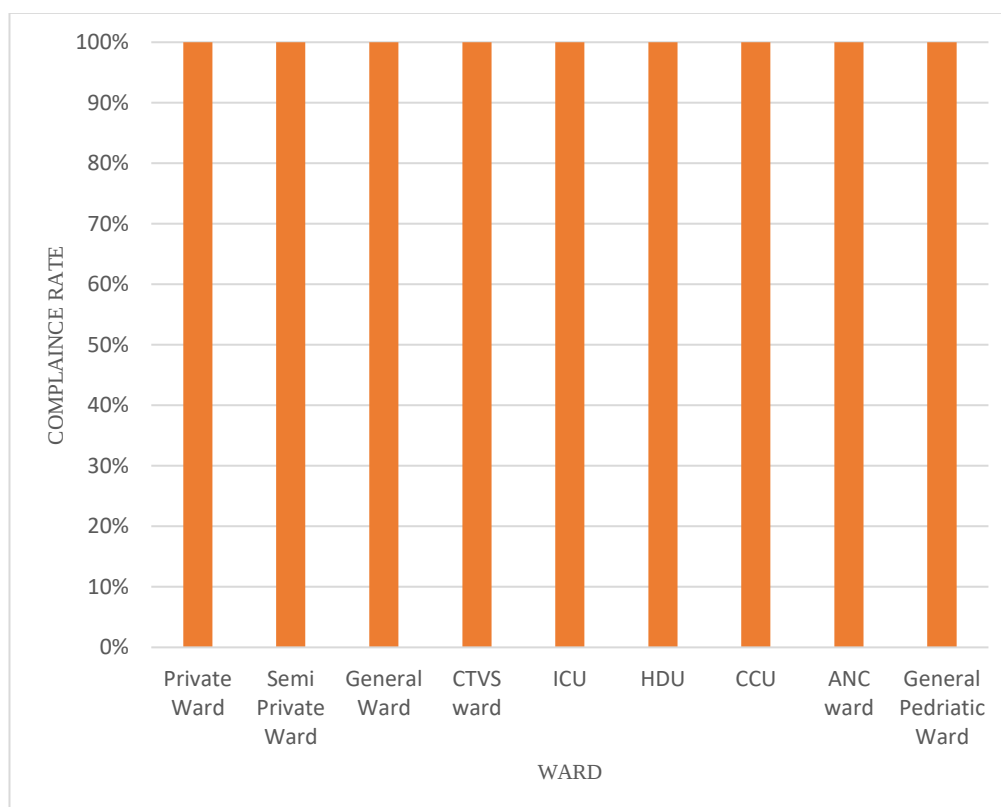


Table 3.2 and graph 3.2 depicts the compliance rate of 100% in the filling of the Pain Assessment form.

Table 3.3 COMPLIANCE RATE (Feb 22nd 2023- May 22nd 2023) of Fall assessment form

WARD	Fall assessment form
Private Ward	100%
Semi Private Ward	100%
General Ward	100%
CTVS ward	100%
ICU	100%
HDU	100%
CCU	100%
ANC ward	100%
General Pedriatic Ward	100%

Graph 3.3 COMPLIANCE RATE (Feb 22nd 2023- May 22nd 2023) Fall assessment form

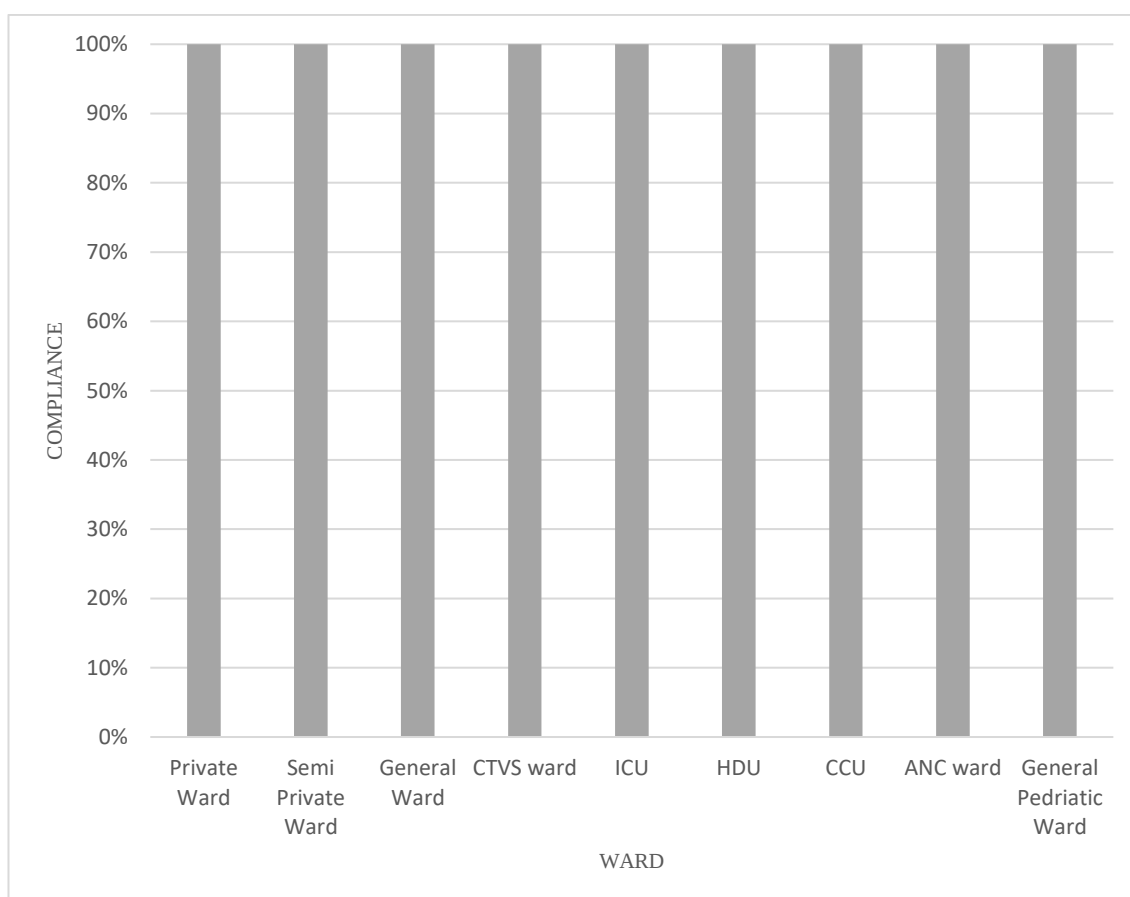


Table 3.3 and graph 3.3 depicts the compliance rate of 100% for Fall Assessment form.

Table 3.4 COMPLIANCE RATE (Feb 22nd 2023- May 22nd 2023)

WARD	VTE prophylaxis form	Pain assessment form	Fall assessment form
Private Ward	99%	100%	100%
Semi Private Ward	99%	100%	100%
General Ward	99%	100%	100%
CTVS ward	95%	100%	100%
ICU	98%	100%	100%
HDU	98%	100%	100%
CCU	99%	100%	100%
ANC ward	100%	100%	100%
General Paediatric Ward	100%	100%	100%

Graph 3.4 Comparison of Compliance rate of all the three forms (Feb 22nd 2023- May 22nd 2023)

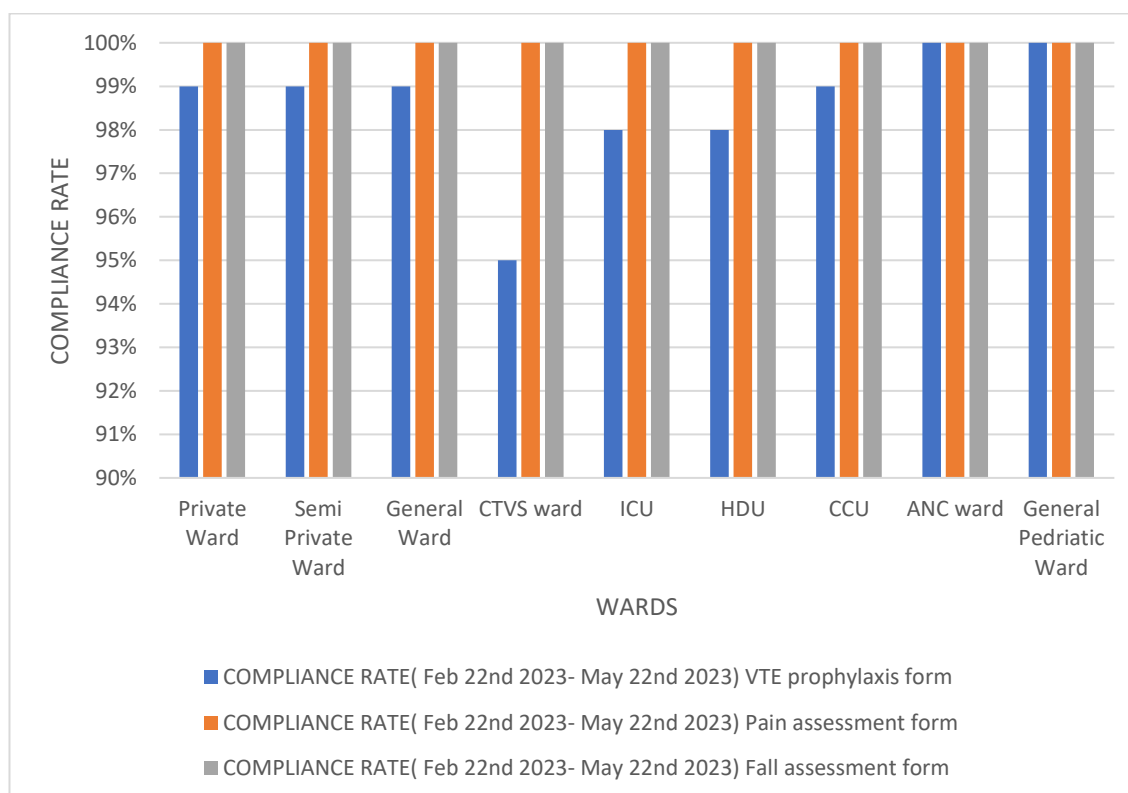


Table 3.4 and Graph 3.4 depicts the comparison of the compliance rate of all the three forms.

DISCUSSION

1. VTE prophylaxis compliance form:
 - Most wards achieved a compliance rate of 99% or 100% for VTE prophylaxis form, indicating a high level of adherence by the Hospital protocol towards the prevention of Venous thromboembolism (VTE).
 - However, a compliance rate of 95% was achieved in the CTVS ward indicating reasons for lower compliance rate prompting appropriate measures in addressing them
2. Pain Assessment compliance form:
 - All wards demonstrated a compliance rate of 100% indicating proper evaluation and monitoring of pain levels during admission as per the hospital protocol
3. Fall Assessment compliance form:
 - Similarly, a compliance rate of 100% was achieved for Fall assessment form indicating that proper and appropriate measures were taken to prevent falls among patients that are admitted.

The VTE prophylaxis form although achieved a high (above 90%), it was still lower than the Pain Assessment and Fall assessment compliance form of 100%. The main factors responsible for low VTE compliance rate as compared to the other two can be summed up as

- Lack of awareness:
Depending upon the workload of the doctors, ratio of doctors per patients, number of patients, it is observed that doctors sometimes forget or lack awareness to fill every form that are mandatory as per the hospital guidelines for patients being admitted. This mistake although not life threatening can still affect the quality care and safety of patients.
- Poor compliance in following hospital guidelines and protocols by the hospital staff reflects not only the working ethics of the staff but also exposed the inability of the hospital to maintain some form of order. Thus, it is important that the hospital holds audits at regular intervals and punish the one accountable.

NABH chapter 7 Responsibilities of management-

<https://www.nabh.co/images/Standards/NABH%205%20STD%20April%202020.pdf>

also helps to clearly define the roles and responsibilities for effective utilization of resources and achieve optimum levels of patient safety and quality care. Similarly filling of mandatory hospital forms is also a responsibility and those responsible should have their roles clearly defined by the hospital in order to reduce any confusions or reports of non-compliance

Also, as per the NABH accreditation Chapter 6 Patient safety and quality control - <https://www.nabh.co/images/Standards/NABH%205%20STD%20April%202020.pdf> there is a need to encourage an environment of patient safety and quality care improvement. Introduction of a reward system also encourage and motivates the need to perform better and strictly adhere to the hospital policies and guidelines in order to achieve optimum quality care and patient safety.

The Agency for Health Research and Quality (AHRQ) also introduced strategies and approaches for tracking patient safety and compliance. - <https://psnet.ahrq.gov/primer/strategies-and-approaches-tracking-improvements-patient-safety> such as

- Incident Reporting system:
Incidents such doctors/nurses/hospital staff not filling the required forms should be reported on a daily basis to ensure strict adherence to the hospital policies and guidelines.
- Root cause analysis:
Root cause analysis are problem solving tools and techniques which uses a retrospective approach to find out the cause and it can be used in finding out the causes for not achieving 100% compliance rate for not only VTE prophylaxis forms but also other problems hindering the safety of patients and its quality of care.
- Use of Failure modes and effect analysis.

CONCLUSION

The compliance rates for VTE prophylaxis form, Pain assessment form and Fall assessment form, from February 22nd 2023 to May 22nd 2023 indicates proper and high adherence to the hospital protocols in the given hospital wards. Most wards have achieved a compliance rate of 99% - 100% in all the three forms proving the hospital's goal towards providing optimum patient safety and quality care.

It can also be concluded that the compliance rate for VTE prophylaxis form is lower than the other two forms included in the study as shown in the compliance rate in CTVS ward being only 95% thus suggesting the need for improvement in this area.

SUGGESTIONS:

- Identification and management of barriers:
It is important to identify and investigate barriers such as lack of awareness, resources or specific challenges as understanding barriers help targeted implementations.
- Education and training of hospital staff (doctors and nurses):
Conduct education and training of hospital staff at regular intervals regarding VTE prophylaxis protocols and ensure strict adherence to specific procedures and guidelines.
- Continuous Monitoring and Feedback:
Implementation of continuous monitoring and feedback to track compliance rates. Motivation and encouragement are vital tools for improvement.
- Standardization of hospital processes:
Establishment of standardized processes especially in areas with low VTE prophylaxis form compliance rates to reduce variability and improve compliance rate.
- Quality Improvement programs:
Quality improvement initiatives especially in areas with low VTE prophylaxis form compliance rates (e.g., CTVS ward) and encouragement of evidence-based strategies.
- Conducting audits and accountability
Audits should be held in regular intervals to assess compliance rates and identify areas of non-compliance. Hospital staff not following the proper procedures and protocols should be held accountable.

By implementing the above suggestions, the hospital (Quality department) can work towards improving the compliance rate for VTE prophylaxis form especially in the CTVS ward, thereby ensuring that all protocols are followed strictly and ultimately resulting in optimum patient safety and quality care.

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