Title: Hospital-Acquired Venous Thromboembolism Prevention in Hospitalized Military Veterans

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PROBLEM STATEMENT

- Hospital-Acquired Venous Thromboembolism (HA-VTE) is a leading cause of death in the United States, and that impacts 900,000 Americans annually.
- HA-VTE results in 100,000 premature and preventable deaths yearly in the country
- 12 incidences of HA-VTE in the chosen hospital in 2020-2021, and five further incidences from October 2021 to May 2022
- Increasing rates of patient refusals and holds of anticoagulation for HA-VTE prophylaxis.
- Review of anticoagulation bar code medication administration (BCMA) report from all 21 hospital units and wards over one week in quarter four of 2021, showed that out of 1320 doses ordered, only 1169 doses (88%) were administered.
- Only 11 units had a VTE prophylaxis medication administration rate of 90% or greater.
- Bedside nursing staff survey revealed a lack of HA-VTE knowledge including risks and prevention strategies.

PROJECT PURPOSE

- Reduce patient refusal of chemical VTE prophylaxis and increase patient acceptance, knowledge and benefits of chemical VTE prophylaxis
- Decrease incidence of HA-VTEs.
- Improve veterans' health through disease prevention and healthcare promotion strategies.

CLINICAL QUESTION

"In hospitalized veterans that are prescribed chemical VTE prophylaxis, does implementation of a standardized HA-VTE prevention protocol reduce the number of patient refusals when compared to current, unstandardized practice?"

MODEL/NURSING THEORY

- **QI Model:** Implementation of a VTE patient educational bundle based on learning theories to assist patients in self-care and informed decision-making. Teaching strategies to provide patient and nurse knowledge on HA-VTE prevention methods to increase patient awareness and participation in self-care.

METHODS

- **Subjects (Participants)**
  - Male and female veterans, ages 18 through 100, admitted to a ward in a VA hospital in West Central Florida who are prescribed chemical VTE prophylaxis with direct oral anticoagulant, heparin, or low-molecular weight heparin between April 15 through June 15, 2023.
- **Setting**
  - A medical-surgical ward within a VA hospital in West Central Florida.
  - Patients on this ward are admitted and undergo elective and non-elective surgeries, from the emergency department, or transferred from the polytrauma, step-down, or intensive-care units.
- **Instruments/Tools**
  - Nurse unit champion administers one-on-one VTE prevention bundle when an anticoagulation dose is refused by patient.
  - VTE Prevention Education Bundle consisting of printed brochures titled "How Do I Prevent Blood Clots? Collaborative/Surgery Venous Thromboembolism (VTE) Deep Vein Thrombosis (DVT) Pulmonary Embolus (PE)" developed by the Armstrong Institute for Patient Safety and Quality (2022) and 2018-2019 Patient Version - American Society of Hematology Clinical Practice Guidelines on Venous Thromboembolism (VTE).
  - Video from the Aging for Alliance Research "Living with VTE and Preventing Deadly Blood Clots" (2017) , provided via Youtube on the GetWell TV Network.
- **Measure Pre- and Post-intervention rates of refusal of chemical VTE prophylaxis**
  - Data collected will be verified for accuracy, variables and information that may be lacking and imported into the International Business Machines (IBM) Statistical Package for Social Sciences (SPSS) 26 Statistical Software.
  - Frequencies and rates of refusals in percentage per patient, per day, will be calculated to illustrate categorical data.
  - After review for normal distribution interquartile range (IQR), mean standard deviation (SD) will be computed to illustrate numeric data.
  - Mann-Whitney U test will be utilized to analyze the statistical difference between the pre-intervention and post-intervention samples.
  - The Mann-Whitney U test will be performed to assess the impact of the VTE Prevention Bundle on the pre- and post-intervention populations. A p value of < 0.05 will be considered statistically significant.

KEY FINDINGS:

- VTE Prevention Bundle implementation by a nurse unit champion for patients refusing chemical VTE prophylaxis resulted in an increase in patient acceptance of prophylactic VTE measure.
- Implementation of VTE Prevention Bundle resulted in 100% acceptance rate for all patients encountered who received the one-on-one educational bundle.

Patients refusing chemical VTE prophylaxis (BAR GRAPH)

Table 1. Outcomes after implementation of VTE Prevention Bundle

Project Data/Results

	Total Doses	Total Patients	Male	Female	Refused Doses	# Encountered Patients	# Acceptance	Refusal Rate in %	Acceptance Rate in %
April 1-15, 2023	408	64	62	2	18	0	0	4%	0
April 16-22, 2023	170	38	37	1	11	9	9	6%	25%
April 23-May 6, 2023	330	45	45	0	14	3	3	4%	6.6%
May 7-13, 2023	211	35	34	1	14	3	3	6%	8.5%
May 14-20, 2023	212	41	40	1	10	1	1	4.7%	2.4%
May 21-27, 2023	168	37	35	2	8	3	3	4.7%	8%

Encountered Patients: Received VTE Prevention Education Bundle

- **Intervention and Data Collection**
  - Nurse unit champion will administer the VTE Prevention Bundle when a patient refuses an anticoagulation dose.
  - Nurse unit champion will visit the patient and provide, one-to-one patient education within 24 hours of acknowledgement of a refused anticoagulation dose.
  - VTE Prevention Bundle will be implemented at the first refusal and for up to two additional refusals.
  - If the patient refuses the chemical VTE prophylaxis three times, the event will be escalated, and the provider team will be notified to intervene. A refused dose note will be documented by the nurse unit champion in the patient's EHR to reflect the refusal and the attempts of intervention.
- Timeline
  - April 15, 2023, through June 17, 2023.

  A statistical relationship between implementation of the VTE prevention bundle, refusals of chemical VTE prophylaxis, and incidence of HA-VTE

Patients Refusing Chemical VTE Prophylaxis (Bar Graph)
Number of Patient Refusal Before and After Implementation of the VTE Prevention Bundle (Bar Graph)
Number of VTE Incidences Before and After Implementation of the VTE Prevention Bundle (BAR GRAPH)

DISCUSSION

Anticoagulants: enhanced standardized protocol and risk stratification for medical inpatients at increased risk for VTE (ASH Clinical Practice Guidelines, 2018).

Findings of Significant Reduction in Non-Administration of VTE Prophylaxis: comparison trial of 19,652 adult patients on medical and surgical units, ***after*** receiving real-time, targeted, patient-centered educational bundle intervention (Haut et al., 2018).

INCREASE RATE OF PATIENT ACCEPTANCE OF ANTICOAGULANTS: by 20% within 30 days of intervention.

DECREASE RATE OF PATIENT REFUSALS/HOLDS OF ANTICOAGULANTS: by 15%-20% within 30 days of intervention.

LOWER HA-VTE INCIDENCE: over 90 days when compared to current, unstandardized practice.

- If successful, this DNP project can be sustained and scaled with the creation of a standardized nursing protocol for acute care services which will assist medicine and nursing services in addressing patient refusals of chemical VTE prophylaxis

- **Quality improvement limited due to limited participation of unit champions,**
- **VTE Prevention Bundle could only be administered by one unit champion**
- **Lack of engagement from unit champions**
- **Lack of EMAR capability to trigger real-time alerts when chemical VTE prophylaxis were refused or held**
- **Results to be presented to key stakeholders for engagement**
- **Use of Plan Do Study Act cycle to test interventions at other units**

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- Decrease VTE rates.
- Increase patient awareness of the benefits of chemical VTE prophylaxis.
- Enhance patient knowledge of VTE and its sequelae.

REFERENCES

- Consider using a QR Code to save space!

VTE Prevention Bundle increased patient acceptance of chemical VTE Prophylaxis.

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