Evaluation of an educational campaign to improve adherence to Pneumatic Compression Devices: impact of a Quality Improvement Initiative

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Introduction
Venous thromboembolism is one of the leading hospital-acquired conditions associated with significant levels of morbidity, disability, and mortality.
- U.S., VTE is estimated to affect 350,000 to 900,000 people each year.
- The Joint Commission uses VTE as an indicator for the concept of “failure to prevent”
- VTE is preventable, however the condition is highly unpredictable and has few associated warning signs.

Background & Significance
- VTE is a term that includes both deep vein thrombosis (DVT) and pulmonary embolism (PE)
- Risk Factors of VTE:
  - Recent surgery
  - Reduced mobility
  - Pregnancy
  - Smoking
  - Long hospitalization
  - Increased age

- Adherence and compliance remains inconsistent to pneumatic compression devices
- The CDC estimated the total costs of VTE to be around $10 billion dollars per year.
- Each incident of VTE, costs $18,000 to $23,000

Objective
Implement an education campaign on the importance of pneumatic compression devices.

Methodology
This quality improvement project used the Plan-Do-Study-Act (PDSA) framework to assess adherence to pneumatic compression device use

Setting
Medical-surgical floor at a medical center in New Brunswick, New Jersey

Study Population
Patients admitted to a medical-surgical floor on VTE prophylaxis

Study Intervention
- In-service training for nursing staff on VTE prevention and the new VTE QI
- Placement of a bedside visual cue in 34 patient rooms
- Weekly audits three times a week using the collection tool

Outcomes measured
- Assessed patient’s compliance with pneumatic compression devices.

Theoretical Model
Knowles adult learning theory was used to develop and design the pilot project

Results

Data Interpretation
- Progressive increase in pneumatic compression devices adherence from the pre-intervention period.
- Mann-Whitney U Test was computed to see if there was a statistically significant.
  - Statistical analysis results showed NO statistically significant between the pre and post implementation phase.
    - (U = .000, p = .083, z = -1.732).

Project Limitations
- Sample size to small
- Type 1 error
  - Pre-intervention data in months and post-intervention data in weeks
- COVID-19 pandemic

Discussion & Implications
Overall increase in the use of pneumatic compression device over a course of 6 week period
- Pre 85% adherence to 94% post
- Positive impacted on patients and nurses
- Educating nurses and patients can lead to a decrease in VTE events and improve patient stratification

Conclusions
- Visual cues are simple tools to ensure compliance to the use of pneumatic compression devices.
- Implementing a visual reminder increased compliance and improved awareness among nurses and patients.

References
Refer to attached sheet

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References