

Title: Improving Patient and Provider Compliance with Sequential Compression Devices Using Modified Workflows and Patient Education

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Purpose & Rationale:

Venous Thromboembolism (VTE) is the most common preventable and costly cause of hospital related injury, accounting for nearly 30,000 deaths annually^{1,2}. Interventions aimed at decreasing the risk of development of VTE, include pharmacologic, mechanical prophylaxis and mobility. The least invasive intervention involves the use of sequential compression devices (SCD),² though standard protocols and compliance strategies are lacking. The purpose of this study is to monitor and improve VTE prophylaxis program using SCD in a high-risk inpatient setting.

Quality Improvement Question:

How can patient and provider compliance with SCD be optimized in the inpatient setting to improve patient outcomes?

Synthesis of Review of Literature:

Recommendations for SCD use has been established,³ though current state of compliance remains subpar.⁴ Factors related to compliance include the nurse's role⁵, provider and patient education⁴, and inconsistent risk identification. SCD compliance in a hospital settings are reported from 19% to 82% with various surveillance techniques.⁴⁻⁶ Published methods to enhance compliance include education to patients, education to staff, and increased surveillance.

Methods/Procedures:

This was a prospective quality improvement study. The sample included all patients on a 27-bed-stepdown and neurosurgical/trauma floor at an 800-bed Level-1 Trauma Center in New England. An intervention consisting of nurse-led patient education, which included distribution of an information sheet to patients upon admission and following noncompliance, ensuring the availability of SCD equipment, and proper identification of patient's VTE risk labeled at the bedside. Full compliance with the SCD protocol was defined as SCD functioning and properly worn according to the patient's level of risk at observation periods twice per day. Data was collected by the unit's nurses and care assistants twice a day at 9am and 9pm, and was documented accordingly with compliance percentages and identifications of barriers. An initial unit goal of 90% compliance per day was set and documented as a core metric during daily lean huddles. Data was compiled for a six-month period.

Results:

More than 3,500 observations were made regarding compliance of SCD protocol. Rates of full compliance improved with administration of the intervention. One year prior to the intervention, 80% of patients achieved full compliance. At one-month intervals subsequent to the intervention, full-compliance rates had improved from 93% to 96% to 99% at three months. The combination of multiple strategies was seen to be the most effective approach in enhancing compliance. The process beginning for each patient being educated upon admission, and risk assessment labeled at bedside encouraged a strong basis for patient compliance. The audits were completed twice daily along with the metrics for daily lean huddles encouraged staff compliance and awareness. Inclusively the compliance has been consistently above 95% for the past four months.

Discussion/Application to Practice:

This study shows that SCD compliance rates can be increased with proper patient and staff education, available and functional equipment, and proper identification and communication of the patient's VTE risk. Empowering the nurse at the bedside to educate and encourage patient's

compliance leads to the best practice.⁷ These interventions together have the potential to be customized to individual units based on the area of care and patient population.

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