Title: Utilization review of VTE prophylaxis in hospitalized patients to determine compliance with current evidence-based guidelines.

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Introduction:

Hospital-acquired VTE cost the healthcare system $7-10 billion dollars per year. Studies suggest that obese populations and those of African American ethnicity are at an increased risk of VTE. Christian Hospital (CH) serves a population enriched with underlying risk with over 60% African American population and 30% obese. Currently, the most frequently used guidelines for medically ill and surgical patients that address the use of VTE prophylaxis are the 2019 American Society of Hematology guidelines, the 2018 American Academy of Orthopaedic Surgeons Guidelines and then the 2012 Chest Guidelines. Despite evidence-based recommendations, research still suggests that VTE prophylaxis is underutilized and/or misapplied in clinical practice. In May 2020, the AHA issued a call to action recommending hospitals integrate a practice plan to reduce preventable VTE. Due to the overall misuse and misapplication of VTE prophylaxis systemically in the United States, it is important to assess each facility's utilization of VTE.

Methods:

This retrospective, single-center, observational cohort chart review will assess VTE risk using the Padua Prediction Score in medically ill patients as well as the Caprini Score in surgical patients to evaluate appropriateness of VTE prophylaxis. Patients that were admitted for > 24 hours from January 1, 2019 to June 30, 2019 will be placed on a Microsoft Excel spreadsheet. Using the random sorting feature, each patient will be given a unique identifier. The first 375 patients on the list after being sorted will be evaluated for VTE risk using the Padua Prediction Score in patients who are medically ill and the Caprini Score in surgical patients. The quality of VTE prophylaxis will be evaluated using categorical definitions based on the 9th edition ACCP evidence-based guidelines, the 2019 American Society of Hematology guidelines and the 2018 American Academy of Orthopaedic Surgeons Guidelines. "Grade A" VTE prophylaxis will be defined as; appropriate pharmacological prophylaxis (drug, dose, and frequency), or mechanical prophylaxis with a contraindication to pharmacological prophylaxis. "Grade B" will be defined as; two categories of the appropriate pharmacological prophylaxis were ordered (drug, dose, or frequency). "Grade C" will be defined as one category of the appropriate prophylaxis was ordered (drug, dose, or frequency). "Grade D/F" will be defined as no therapy was used, or the drug, dose, and frequency were not appropriate. There will be two evaluations of the quality of VTE prophylaxis used, one based on the initial prophylaxis ordered by the provider and one based on the prophylaxis after pharmacy verification. This study will be conducted at a 485-bed community hospital (CH located in St. Louis, Missouri). Informed consent for this study is not required due to its retrospective and observational nature. A power calculation will be used to determine the number of patients needed to compare the VTE prophylaxis rates between medically ill and surgical patients. It was assumed that the average daily census at CH is 150 patients. Since my target timeframe is 6 months (180 days), the average daily census of 150 patients was multiplied by 180 days to get a total population of 27,000. When the population was inserted into the Cochran formula, the output was 369, which is the total sample size needed to determine statistical power.