

Magnitude of the VTE Problem in the US: Estimated Annual Number of US Acute-care Hospital Inpatients Meeting ACCP Criteria for VTE Prophylaxis

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INTRODUCTION

Venous thromboembolism (VTE) is a chronic disease requiring considerable health-care resources for its treatment and ongoing management. While consensus guidelines regarding VTE prophylaxis for hospital inpatients have been available for more than 15 years, the number of US inpatients who are potentially eligible to receive prophylaxis is unknown. Such data are required in order to estimate the potential costs and benefits of prophylaxis in reducing VTE incidence. The aim of this study was to estimate the number of inpatients in US acute-care hospitals in 2002 that were potentially eligible for VTE prophylaxis.

METHODS

- Inpatients with hospital discharge International Classification of Diseases, Ninth Revision (ICD-9) codes for major surgery or medical illness were identified from the Healthcare Cost and Utilization Project (HCUP)¹, a national acute-care hospital database supported by the US Agency for Healthcare Research and Quality.
- Inclusion criteria:
 - Surgical inpatients ≥ 18 years of age with a length of hospital stay ≥ 2 days and HCUP-defined major surgery
 - Medical inpatients ≥ 40 years of age with a length of hospital stay ≥ 2 days

- VTE prophylaxis guidelines from the 7th American College of Chest Physicians (ACCP) Consensus Conference (2004) ² were applied to estimate the number of inpatients who were eligible to receive VTE prophylaxis.
 - Surgical inpatients were defined as being at low, moderate, high, or highest risk for developing VTE based on ACCP guidelines. Prophylaxis is recommended for patients with moderate-, high-, or highest-risk surgery.
 - Medical inpatients at risk for developing VTE were identified according to the primary, secondary, and tertiary discharge diagnosis based on ACCP guidelines.
 - Search criteria were mutually exclusive with priority given to surgical procedures, followed by primary, secondary, and tertiary discharge diagnosis for medical illnesses.
 - The numbers were summed to estimate the total number of at-risk hospital inpatients.

RESULTS

- A total of 37.8 million inpatients were discharged from US acute-care hospitals in 2002; 7,722,542 met the inclusion criteria for surgical inpatients and 13,539,230 met the inclusion criteria for medical inpatients.
- When ACCP surgical risk criteria were applied to the 7,722,542 surgical patients defined by HCUP criteria as having had a major surgical procedure
 - 25% were at low VTE risk (prophylaxis not recommended)
 - 26% were at moderate VTE risk
 - 39% were at high VTE risk
 - 10% were at highest VTE risk
- Of the 13,539,230 medical inpatients who had no major surgical procedure, 7,596,645 patients met the ACCP criteria for VTE prophylaxis based on medical-illness risk factors
 - 4,638,905 based on primary discharge diagnosis
 - 2,039,702 based on secondary discharge diagnosis
 - 918,038 based on tertiary discharge diagnosis

- Of the 37,804,021 patients discharged from US acute-care hospitals in 2002, 13,392,124 (35%) were at a sufficient risk of VTE from surgical procedures (5,795,479; 15%) or medical illnesses (7,596,645; 20%) to require prophylaxis during hospitalization, according to the ACCP guidelines.

CONCLUSIONS

- In total, 13.4 million US residents meet ACCP criteria for VTE prophylaxis annually due to hospitalization for either major surgery or medical illness.
- Given that a significant proportion of VTE events occurring in the community are related to recent acute-care hospitalization, providing universal, safe, and effective VTE prophylaxis to this population affords an important opportunity to significantly reduce the incidence of VTE.
- These data provide support for developing and monitoring compliance with hospital-wide guidelines for VTE prevention.

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