VTE Risk Assessment and Prophylactic LMW Heparin administration Audit in Antenatal Patients

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Introduction

Venous thromboembolism (VTE), including deep vein thrombosis and pulmonary embolism, is a leading cause of maternal morbidity and mortality in the UK. Pregnancy significantly increases the risk of VTE, making timely risk assessment and thromboprophylaxis essential components of antenatal care. National guidelines, including RCOG, NICE, and SIGN, recommend routine VTE risk assessment during pregnancy and hospital admission, with low molecular weight heparin offered to women at increased risk unless contraindicated. This audit evaluated compliance with VTE risk assessment and prophylaxis among antenatal inpatients at Raigmore Hospital.

Aim and objectives

Aim:

To evaluate compliance with VTE risk assessment and thromboprophylaxis documentation among antenatal inpatients at Raigmore Hospital and assess adherence to national clinical guidelines.

Objectives:

- Assess completion of VTE risk assessments on admission and at 24 hours
- Determine whether appropriate thromboprophylaxis or clinical action followed risk assessment findings
- Compare current practice with national standards to identify gaps and inform quality improvement strategies

Methods and Eligibility

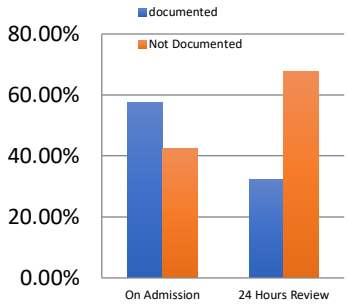
Methods:

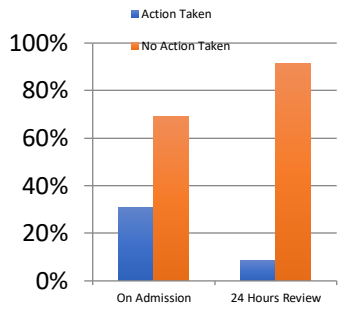
Retrospective audit at Raigmore Hospital (Apr–Jun 2025) assessing VTE risk assessment and prophylaxis in antenatal inpatients.

Eligibility:

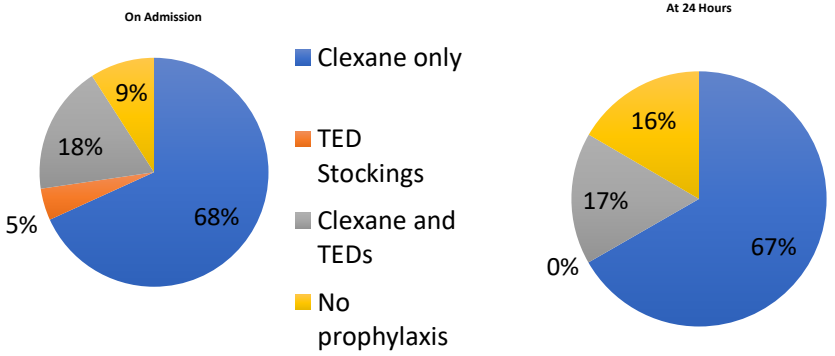
Included antenatal inpatients with complete records; excluded postnatal, labor/induction admissions, and incomplete documentation.

Tables and Figures





VTE Risk Assessment Documentation Rates and actions taken on admission and after 24 hrs.



Action Types On Admission and after 24 hrs

Results

During 3 months period, 71 patients met inclusion criteria. VTE risk assessment completion was 57.7% on admission, falling to 32.4% at 24 hours. Appropriate action was documented in 31.0% on admission and only 8.5% at 24 hours, with nearly half of patients lacking documented prophylaxis on admission and the majority at 24-hour review. Clexane was the most commonly used prophylaxis, either alone or with TED stockings, but overall use and follow-up documentation remained low, particularly at 24 hours.

Discussion and recommendation

This audit demonstrated moderate compliance with VTE risk assessment on admission but poor completion and follow-up at 24 hours, despite a high proportion of high-risk patients, raising patient safety concerns. Incomplete documentation, inconsistent reassessment, and limited action following identification of risk suggest gaps in staff awareness, workflow pressures, and lack of structured documentation systems. These findings reflect suboptimal adherence to RCOG, SIGN, and NICE guidance, which emphasize formal reassessment and timely initiation of LMWH prophylaxis unless contraindicated. Improving compliance requires a multifaceted approach, including reinforcing the importance of 24-hour reassessment, introducing electronic reminders and standardized assessment tools, and providing targeted staff education on VTE risk stratification and prophylaxis protocols. Visual prompts and ward-based checklists may further support documentation and clinical decision-making. Regular multidisciplinary review meetings and re-audit within 6–12 months are recommended to monitor adherence, address implementation barriers, and ensure sustained improvement in patient safety and quality of care.