



## Audit of Inpatient Venous Thromboembolism Prophylaxis in the Plastic Surgery Department at a UK Tertiary Referral Centre

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### Abstract:

Venous thromboembolism (VTE) prophylaxis is vital for preventing thromboembolic episodes in patients, such as deep vein thromboses, pulmonary emboli, and other venous thrombotic episodes. These thromboembolic episodes are associated with significant morbidity and mortality. Surgical patients are at greater risk due to a pro-thrombotic internal milieu and limited mobility post-operatively. In recognition of this, hospitals nationwide publish guidelines for VTE prophylaxis in patients. In the tertiary hospital where this audit was conducted, for patients >16, the guidelines are:

1. VTE Risk assessment (online form) completed within 14h of admission
2. VTE Prophylaxis prescription completed within 14h of admission

The aim of this audit was to assess the adherence of the Plastic Surgery Department in a London tertiary centre to hospital guidelines for VTE prophylaxis and VTE prophylaxis plan documentation. Subsequently, the objective was to implement changes to improve adherence and documentation.

For the first cycle, VTE Risk Assessment and VTE Prophylaxis Prescription was assessed for Plastic Surgery inpatients from 17 June 2023 – 30 June 2023 (53 inpatients). Time till completion of VTE Risk Assessment and time till completion of VTE Prophylaxis Prescription was calculated for each inpatient and compared to the standards. The percentage of patients with guideline-compliant VTE Risk Assessment, VTE Prophylaxis Prescription, and overall guideline compliance, was also calculated. Finally, the percentage of patients with clearly documented VTE prophylaxis plans was calculated.

The results of the first cycle were presented to the Plastic Surgery Department, with the following recommendations for improvement:

1. Clerking individual to fill in VTE Risk Assessment
2. Clear documentation of VTE plan on clerking note / operation note / ideally both

The second cycle of the audit was carried out from 19 August 2024 – 1 September 2024 (53 inpatients) using the same methodology and metrics after implementation of recommendations. The second cycle showed reduction in times to completion of risk assessment (mean time decreased from 22h30min to 18h9min, median from 19h15min to 16h30min) and VTE prophylaxis prescription (mean time decreased from 32h17min to 14h29min, median from 11h47min to 10h). The second cycle also demonstrated increased completion rates of VTE Risk Assessment (from 71.70% to 98.11%), VTE Prophylaxis Prescription (from 90.57% to 98.11%), increased VT plan documentation rates (from 30.19% to 45.28%) and increased overall guideline compliance (from 32.08% to 47.17%). Of note, the recommendations implemented led to a statistically significant increase in VTE Risk Assessment completion (p-value=0.0004) and guideline-compliant VTE Prophylaxis Prescription (p-value=10<sup>-6</sup>)