Background and importance Venous thromboembolism (VTE) is a potentially fatal complication of hospitalisation, affecting approximately 3% of non-surgical patients. Administration of low molecular weight heparins to appropriate patients adequately decreases the incidence of VTE but a low guideline adherence is described in the literature.

Aim and objectives A multifaceted intervention was introduced to increase adherence to thromboprophylaxis guidelines in non-surgical patients. The primary objective was to determine the effect on guideline adherence. The secondary objective was to study the effect on guideline adherence specifically in patients with a high VTE risk. As an exploratory objective, we determined how many VTEs may have been prevented by the multifaceted intervention.

Material and methods A prospective study with a pre- and post-intervention measurement was conducted between October 2018 and March 2020. A multifaceted intervention, consisting of clinical decision support (CDS), a mobile phone application, monitoring of duplicate anticoagulant medication and training, was implemented. Adherence to guidelines was assessed by calculating the Padua prediction score and improve bleeding risk score for each patient, based on electronic health record (EHR) documentation. Adherence to guidelines was analysed by univariate and multivariate logistic regression.

Results 170 patients were included: 85 in the control group and 85 in the intervention group. The intervention significantly increased guideline adherence from 30/55 to 43/51 (OR 2.46; 95% CI 1.31 to 4.62). Extrapolation of these results to an annual admission rate of 25 000 patients in our hospital resulted in the potential prevention of ±261 VTEs per year.

Conclusion and relevance Our multifaceted intervention significantly increased adherence to thromboprophylaxis guidelines. To our knowledge, this is the first study describing such a large effect after the implementation of a multifaceted intervention. We believe this is mostly due to the design of our CDS, which is built-in to the EHR and has a highly specific design; it only alerts prescribers if patients actually have a high VTE risk and are not treated with anticoagulant therapy.