BACKGROUND

VTE is a major public health problem, with an estimated incidence of 80,000 cases per year in Germany [2].

- Methods of VTE prophylaxis include pharmaceutical (e.g. heparin) and mechanical (e.g. IPC) options.
- Risk assessment for at-risk patients may be considered a medical error [4].
- German guidelines recommend that all at-risk patients have prophylactic mechanical prophylaxis (IPD) [5].
- Fewer patients are at increased risk of bleeding, mechanical methods should be used in this population [5].
- In other countries, IPC is often used in combination with aspirin which would comply with German guidelines.

AIMS

To use current literature to estimate how changes in the use of VTE prophylaxis impact on healthcare costs and the incidence of deep-vein thrombosis (DVT), pulmonary embolism (PE), and major bleeding.

METHODS

Data identification

Structured literature searches of PubMed were performed to identify recent publications relating to the incidence and cost of VTE and adverse events (AEs) in the German setting.

- Title and abstract searches and screening against pre-specified inclusion and exclusion criteria.
- Full-text articles were reviewed for a final set of included articles.
- Sensitivity analyses were performed to establish the robustness of the model.

Budget-impact model

Markov models were developed in Microsoft Excel® to simulate the onset and progression of VTE and AEs.

- The semi-Markov model for VTE included: "no VTE", "DVT, PE", and "previous VTE", post-thrombotic syndrome (PTS), Fatigue, VTE, and death.
- The AE Markov model included: no AE, minor bleed, major bleed, and infection.
- Simulation of patient trajectories were driven by reduction in bleeding events.

RESULTS

Case scenario analysis

Given that VTE and IPC are the least cost-intensive options, a scenario analysis was run for a 5% point increase in both products and a 5% point decrease in LMWH and PS.

Significant savings of €29 per patient-year are estimated, driven by reduction in major bleeds (-3.7 events) and lower product costs.

DVT would likely be increased but would be outweighed by reduced major bleeding (Figure 2).

Figure 2. Most safety events are less frequent with IPC and Warfarin compared with LMWH and PS.

REFERENCES