

## Determinants of venous thromboembolic event rates after hip arthroplasty -international comparison

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### Background

International comparisons of indicators of healthcare performance, quality and safety provide an important opportunity to explore reasons for their variations in order to find ways to improve both the indicators and the quality of care. We aimed to compare rates of hospital adverse events internationally and to investigate possible clinical and health system determinants of their variations.

### Methods

We used hospital discharge diagnoses to measure rates of symptomatic venous thromboembolic events (VTE) in patients hospitalized for hip arthroplasty in Canada, France, New-Zealand, Switzerland and the USA. We used these coded diagnoses to measure VTE rates using an existing algorithm (AHRQ Patient Safety Indicator 12). We examined associations between VTE and gender, age, length of stay (LOS), number of discharge diagnoses recorded (Ndiag), and performance of ultrasonography before discharge (US).

### Results

VTE rates were 0.84% in Canada, 1.41% in France, 0.84% in New-Zealand, 0.37% in Switzerland, 0.66% in the USA. Age, gender, LOS, Ndiag and US could have influenced VTE rates. For instance, France, where the highest VTE rate was observed, was also the only country with routine reported use of US before discharge (>17% vs <1% in other countries), which was even more frequent in private hospitals. The mean value of Ndiag was close to 7 in the USA, and varied between 2 and 3 in the other countries.

### Conclusions

VTE rates varied across countries. These differences could be linked to differences in coding practices, as well as differences in clinical and health systems determinants (e.g., higher systematic US assessment in France and probable increased number of asymptomatic VTE coded). The interpretation of differences in international comparisons of healthcare associated VTE rates should be cautious; possible determinants of these differences should be considered.

### Key messages

- Understanding and reducing heterogeneity in international comparisons of adverse events of healthcare is crucial
- Caution is needed when interpreting international comparisons of adverse events of healthcare