

## **Management of severe peri-operative bleeding: Guidelines from the European Society of Anaesthesiology and Intensive Care: Second update 2022**

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**Background:** Management of peri-operative bleeding is complex and involves multiple assessment tools and strategies to ensure optimal patient care with the goal of reducing morbidity and mortality. These updated guidelines from the European Society of Anaesthesiology and Intensive Care (ESAIC) aim to provide an evidence-based set of recommendations for healthcare professionals to help ensure improved clinical management.

**Design:** A systematic literature search from 2015 to 2021 of several electronic databases was performed without language restrictions. Grading of Recommendations, Assessment, Development and Evaluation (GRADE) was used to assess the methodological quality of the included studies and to formulate recommendations. A Delphi methodology was used to prepare a clinical practice guideline.

**Results:** These searches identified 137 999 articles. All articles were assessed, and the existing 2017 guidelines were revised to incorporate new evidence. Sixteen recommendations derived from the systematic literature search, and four clinical guidances retained from previous ESAIC guidelines were formulated. Using the Delphi process on 253 sentences of guidance, strong consensus (>90% agreement) was achieved in 97% and consensus (75 to 90% agreement) in 3%.

**Discussion:** Peri-operative bleeding management encompasses the patient's journey from the pre-operative state through the postoperative period. Along this journey, many features of the patient's pre-operative coagulation status, underlying comorbidities, general health and the procedures that they are undergoing need to be taken into account. Due to the many important aspects in peri-operative nontrauma bleeding management, guidance as to how best approach and treat each individual patient are key. Understanding which therapeutic approaches are most valuable at each timepoint can only enhance patient care, ensuring the best outcomes by reducing blood loss and, therefore, overall morbidity and mortality.

**Conclusion:** All healthcare professionals involved in the management of patients at risk for surgical bleeding should be aware of the current therapeutic options and approaches that are available to them. These guidelines aim to provide specific guidance for bleeding management in a variety of clinical situations.