A Call for Protocols to Standardize VTE Prophylaxis Across Specialties to Improve Patient Safety and Outcomes

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Background

- Venous thromboembolism (VTE) is the leading cause of preventable death in hospitalized patients, contributing significantly to morbidity and mortality[1].
- Missed or interrupted prophylaxis significantly increases VTE risk[2-4].
- Despite strong evidence, practices vary widely across specialties, including surgery, GI, and IR[5-8].
- Trauma and surgical services often follow standardized protocols with early pharmacologic prophylaxis[9-10].
- In contrast, GI and IR practices frequently delay or individualized prophylaxis due to bleeding risk concerns[5-8].
- Guideline discrepancies exist between specialties, even for the same procedures[5-8].
- VTE risk is highest early in hospitalization, emphasizing timely prophylaxis[2].
- Patients transitioning between services often experience uncoordinated care and missed doses[2-4].
- Variability reflects differences in training, risk perception, and procedural priorities[5-8].
- Standardized, cross specialty protocols to improve patient safety[2,9-10].

Clinical Problem

- VTE prophylaxis is often interrupted during procedures without clear plans for reinitiation
- Even brief interruptions can significantly increase VTE risk
- Patients transitioning between services are at high risk for missed doses

Project Objective

- We aimed to highlight the need for harmonized, evidence-based, and context-sensitive VTE prophylaxis guidelines that bridge the gaps between procedural and medical specialties

Methods

- A systematic review of major society guidelines published between 2000 and 2025 was conducted using PubMed and manual reference screening.
- Guidelines from trauma surgery, EGS, GI, and IR professional organizations were included.

Results

Key Findings

- Surgery/Trauma: Early, standardized pharmacologic prophylaxis (≤24–48h)
- GI: Anticoagulation frequently held due to bleeding risk
- IR: Risk-stratified but inconsistently applied
- Same procedures classified differently across specialties
- Frequent interruptions during transitions of care
- Guidelines largely based on expert consensus, not high-level evidence

Article	Methods	Limitations
Patel (2019)	Society of Interventional Radiology (SIR) consensus guidelines developed through expert panel review and a risk-stratification framework for periprocedural bleeding and thrombotic risk.	Primarily expert opinion without direct outcome data. Limited generalizability due to reliance on consensus rather than prospective trials.
Yorkgitis (2022)	Literature review conducted by members of the American Association for the Surgery of Trauma (AAST) and the American College of Surgeons Committee on Trauma. Consensus guidelines developed from available literature and expert opinion.	Limited to adult trauma patients ≥15 years. Sparse literature for Grade IV–V injuries limits strength of recommendations. Does not address post-discharge VTE prophylaxis for high-risk patients with prolonged immobility or persistent hypercoagulable states.
Ley (2020)	Algorithm developed from published prospective and randomized clinical trials and refined by the Western Trauma Association (WTA) Algorithm Committee with expert consensus input.	Designed for adult trauma patients ≥18 years; excludes pediatric population. Algorithm serves as guidance and does not replace clinical judgment due to heterogeneous evidence base.
Acosta (2016)	ASGE Standards of Practice Committee review of endoscopic literature to generate consensus-based recommendations for periprocedural antithrombotic management.	Primarily expert consensus. Limited high-quality prospective trials evaluating antithrombotic continuation versus interruption in endoscopic populations.
Rogers (2002)	Systematic review of three literature databases with 73 articles meeting inclusion criteria and incorporated into meta-analysis for trauma VTE risk and prophylaxis recommendations.	Evidence largely observational and derived from older studies. Limited pediatric representation. Some risk factors lacked statistical significance in meta-analysis.
Murphy (2018)	Narrative review of VTE prophylaxis in emergency general surgery (EGS), incorporating related patient cohorts such as emergency surgery populations within NSQIP datasets.	Few prospective EGS-specific trials. Heterogeneous evidence base. Optimal timing of prophylaxis initiation remains unclear.

Discussion

- VTE prophylaxis practices vary significantly across specialties due to difference in risk prioritization, with surgery emphasizing thrombosis prevention and GI/IR prioritizing bleeding risk, resulting in inconsistent care
- Trauma and surgical protocols demonstrate that standardized, early pharmacologic prophylaxis can reduce VTE without increasing bleeding complications.
- In contrast, procedure-focused approaches in GI and IR often lead to delays or interruptions, leaving patients vulnerable to preventable thrombotic events.
- Conflicting guidelines and inconsistent risk classification for similar procedures contribute to variability in care across services.
- Transitions between specialties represent a key point of failure, where lack of communication and unclear plans for reinitiation result in missed or delayed prophylaxis.
- The current landscape is shaped by fragmented, specialty-specific guidelines, underscoring the need for a more integrated approach.

Next Steps

- Harmonized, patient-centered VTE prophylaxis requires collaboration between surgical, GI, and IR teams. Shared risk assessment tools, standardized order sets, and cross-specialty education can reduce variability and improve safety.
- Further research is necessary to provide high-quality recommendations. As with any standard of practice, individual factors ultimately must be factored and clinical decision making should always occur a multidisciplinary level[11].

References

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