

## Bronchoscopy Bleeding Essential Tool Kit

### Prevention & Planning

Careful preoperative assessment

- Review available laboratory and radiographic studies
- Review medical history and medications

Procedure location and expertise optimization

Equipment check to be prepared for bleeding complications

### Recommended Tools

Advanced airway expertise and equipment

Adequate Suction

Ice-cold Saline

Therapeutic scope with a large working channel

- 2.8 mm or greater

Topical vasoconstricting or pro-coagulant medication

- Diluted epinephrine: 1mg in 10 mL saline (100 mcg/mL); administer in 1 mL aliquots
  - Do not exceed 200 mcg per administration

- Tranexamic acid (TXA): 100 mg in 2 mL

Bronchial blockers (9 Fr requires ETT 7.5 or greater)

Emergency blood products

### Core Teammates

Anesthesia

Respiratory Therapy

Critical Care

Interventional Radiology

Thoracic Surgery

### Bronchoscopic Techniques



### Anesthesia Techniques



### Grading for Bleeding<sup>1</sup>

Grade	Findings at Bronchoscopy	Rationale
1	Suctioning of blood required for less than 1 minute	Minimal bleeding of no clinical consequence to the patient or the provider.
2	Suctioning more than 1 minute required or repeat wedging of the bronchoscope for persistent bleeding or instillation of cold saline, diluted vasoactive substances or thrombin	Requirement of one or more tools to control or prevent further bleeding.
3	Selective intubation with ETT or balloon/bronchial blocker for less than 20 minutes. Or premature interruption of the procedure.	Meaningful but short-term change in the clinical status of the patient involving more invasive procedures and causing interruption of the planned procedure.
4	Persistent selective intubation > 20 minutes or new admission to the ICU or PRBC transfusion or need for bronchial artery embolization or resuscitation.	Change in level of care and requiring advanced ventilatory support and/or transfusion of PRBC.

1. Folch EE, et al., CHEST, 2020. <https://doi.org/10.1016/j.chest.2020.01.036>