



UAB Trauma & Acute Care Surgery

UAB TRAUMA & ACUTE CARE SURGERY GUIDELINE

Guideline Title: **GUIDELINE FOR THE USE OF BRONCHOSCOPY AND BRONCHOALVEOLAR LAVAGE**

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Effective Date: July 2026

Last Revised: July 23, 2026

Next Scheduled Review: July 2029



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1. Guideline Title

GUIDELINE FOR THE USE OF BRONCHOSCOPY AND BRONCHOALVEOLAR LAVAGE

2. Purpose

To standardize the indications for bronchoscopy and bronchoalveolar lavage (BAL) and review the proper technique for performing a BAL.

3. Indications for Bronchoscopy

Diagnostic Indications:

- To evaluate for possible tracheobronchial injury or bronchopleural fistula
- Evaluation of hemoptysis

Therapeutic Indications:

- Mucous plugging with evidence of lung collapse on chest x-ray or CT scan
- Recent aspiration event (ideally within 30-60 minutes for therapeutic effect)
- Airway obstruction and/or removal of foreign body
- To assist with difficult intubations
- Adjunct during percutaneous tracheostomy

4. Indications for Bronchoalveolar Lavage for diagnosis of Ventilator-associated Pneumonia (VAP)

Must meet criteria for all features in column 1 and at least one feature in column 2:

Mechanical ventilation >48h Abnormal temperature (<36, >38) Abnormal white blood cell count (<4k, >12k or >10% bands) Macroscopically purulent sputum	Increasing oxygen requirements New/changing infiltrate on CXR
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5. Contraindications to Bronchoscopy

Bronchoscopy should NOT routinely be performed for the following:

- Radiological finding of atelectasis on a mechanically ventilated patient
- Pleural effusion or hemothorax
- COPD exacerbation
- Increased secretion burden or “toilet bronch”



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6. Guideline Overview / Algorithm

Bronchoalveolar Lavage Technique:

- a. There is good microbiologic concordance and strong correlation between bronchoscopic BAL and non-bronchoscopic (i.e., blind or mini) BAL in diagnosis of VAP
- b. Because a blind BAL is less invasive with a lower risk of complications, this should be the preferred method for obtaining respiratory samples unless a bronchoscopy is being performed for separate indication(s)
- c. Respiratory Therapy should perform all non-bronchoscopic BALs
- d. If performing a bronchoscopic BAL:
 - Select a bronchoscope with an outer diameter at least 2 mm smaller than the inner diameter of the endotracheal tube or tracheostomy
 - Advance the bronchoscope to the segment of interest based on CXR. Do not suction the airway
 - Instill a total of 120 mL isotonic saline (0.9% NaCl) in four aliquots of 30 mL
 - After each aliquot, gently aspirate the fluid back into the 30 mL syringe, adjusting pressure to maintain airway patency and avoid mucosal trauma (RT will collect these samples and send them for culture)
 - Monitor for hypoxemia or arrhythmia throughout the procedure, pausing or aborting if significant instability occurs
 - Obtain post-procedural CXR, write a note in EMR, and start empiric antibiotics.

Diagnostic Workup of Early Pneumonia

- a. PNA present on admission or identified in patients intubated within 48h after admission can be seen in 30-50% of trauma patients^{1,2}
- b. Diagnosis of EP can decrease VAP rates by 25% mostly due to reclassification as aspiration or community acquired pneumonia
- c. However, detection of bacteria in the alveolar fluid may lead to unnecessary treatment of bacterial colonization
- d. Therefore, routine, early screening BAL in the absence of other clinical signs of infection (fever, leukocytosis, chest x-ray opacities, etc.) is not recommended

7. References

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