

Bedside Lung Ultrasound: A Practical Clinical Guide

Audience: Critical care, emergency and perioperative teams | Educational resource for focused bedside ultrasound practice

A pragmatic guide to pleural sliding, A-lines, B-lines, effusions and consolidation, with a bedside scanning approach suitable for everyday POCUS practice.

Important: These guides are educational summaries. Clinical use should follow local scope of practice, credentialing, infection-control policies, image archiving rules and escalation pathways.

Why use bedside lung ultrasound

- Lung ultrasound can rapidly identify common acute respiratory patterns at the bedside without ionising radiation.
- It is particularly useful for pneumothorax, interstitial syndrome, pleural effusion, consolidation and perioperative respiratory deterioration.

A practical scan sequence

- Start with the pleural line in longitudinal orientation between ribs. Confirm whether pleural sliding is present.
- Scan anterior, lateral and, when possible, posterior zones. Use a linear probe for pleura and a curvilinear probe for deeper lung or effusions.
- Interpret patterns, not single artefacts. Symmetry and clinical context matter.

Pattern recognition

- A-lines with sliding usually suggest normally aerated lung.
- Multiple B-lines in the correct context support an interstitial syndrome pattern.
- Absent sliding plus a lung point strongly supports pneumothorax, but absent sliding alone is not sufficient.
- Anechoic dependent collections suggest pleural effusion; tissue-like echotexture may indicate consolidation.

Important limits

- POCUS does not replace definitive imaging when the diagnosis remains uncertain or a more complete map of pathology is required.
- Dressings, obesity, subcutaneous emphysema and poor positioning can degrade image quality.

Lung ultrasound signs

Finding	Typical meaning	Caution
Pleural sliding present	Opposes pneumothorax at that point	May still be pathology elsewhere
A-lines	Aerated lung pattern	Can coexist with other disease

B-lines	Interstitial syndrome pattern	Interpret with distribution and history
Lung point	Specific for pneumothorax when often not found in large pneumothorax	
Anechoic pleural fluid	Pleural effusion	Characterise in full clinical context

Selected references

- Volpicelli G, Elbarbary M, Blaivas M, et al. International evidence-based recommendations for point-of-care lung ultrasound. *Intensive Care Med.* 2012;38(4):577-591.
- Algain AH, et al. Point-of-Care Ultrasound Evaluation of Respiratory Function. *WFSA ATOTW 523.* 2024.
- Berry L, et al. Lung Ultrasound in Critical Care: A Narrative Review. 2025.