

# Adult Bronchoscopy Training

## Current State and Suggestions for the Future: CHEST Expert Panel Report

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**BACKGROUND:** The determination of competency of trainees in programs performing bronchoscopy is quite variable. Some programs provide didactic lectures with hands-on supervision, other programs incorporate advanced simulation centers, whereas others have a checklist approach. Although no single method has been proven best, the variability alone suggests that outcomes are variable. Program directors and certifying bodies need guidance to create standards for training programs. Little well-developed literature on the topic exists.

**METHODS:** To provide credible and trustworthy guidance, rigorous methodology has been applied to create this bronchoscopy consensus training statement. All panelists were vetted and approved by the CHEST Guidelines Oversight Committee. Each topic group drafted questions in a PICO (population, intervention, comparator, outcome) format. MEDLINE data through PubMed and the Cochrane Library were systematically searched. Manual searches also supplemented the searches. All gathered references were screened for consideration based on inclusion criteria, and all statements were designated as an Ungraded Consensus-Based Statement.

**RESULTS:** We suggest that professional societies move from a volume-based certification system to skill acquisition and knowledge-based competency assessment for trainees. Bronchoscopy training programs should incorporate multiple tools, including simulation. We suggest that ongoing quality and process improvement systems be introduced and that certifying agencies move from a volume-based certification system to skill acquisition and knowledge-based competency assessment for trainees. We also suggest that assessment of skill maintenance and improvement in practice be evaluated regularly with ongoing quality and process improvement systems after initial skill acquisition.

**CONCLUSIONS:** The current methods used for bronchoscopy competency in training programs are variable. We suggest that professional societies and certifying agencies move from a volume-based certification system to a standardized skill acquisition and knowledge-based competency assessment for pulmonary and thoracic surgery trainees.

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**ABBREVIATIONS:** ABTS = American Board of Thoracic Surgery; ACGME = Accreditation Council for Graduate Medical Education; CHEST = American College of Chest Physicians; COI = conflict of interest; EBUS = endobronchial ultrasound; GOC = Guidelines Oversight Committee; KQ = key question; PYG = postgraduate year

## Summary of Suggestions

- 1. We suggest that professional societies and certifying agencies move from a volume-based certification system to skill acquisition and knowledge-based competency assessment for pulmonary trainees** (Ungraded Consensus-Based Statement).
- 2. We suggest that assessment of skill maintenance and improvement in practice be evaluated regularly in similar fashion as recurrent cognitive examinations** (Ungraded Consensus-Based Statement).
- 3. We suggest that ongoing quality and process improvement systems after initial skill acquisition be introduced** (Ungraded Consensus-Based Statement).
- 4. We suggest that bronchoscopy training programs incorporate multiple tools, such as e-learning, lectures, books, case-based reviews, and hands-on training** (Ungraded Consensus-Based Statement).
- 5. We suggest that in countries with comparable levels of medical care, bronchoscopy training program requirements be standardized** (Ungraded Consensus-Based Statement).
- 6. We suggest that professional societies and certifying agencies that oversee training programs for similar procedures in different medical and surgical specialties standardize requirements where applicable** (Ungraded Consensus-Based Statement).
- 7. We suggest that simulation specifically be integrated into a structured bronchoscopy teaching curriculum** (Ungraded Consensus-Based Statement).

**8. We suggest that high-fidelity simulation due to its cost should be offered in regional simulation centers, which should be accessible to all training programs** (Ungraded Consensus-Based Statement).

FOR EDITORIAL COMMENT SEE PAGE 301

Procedural training has long been an important component in the specialty of pulmonary and critical care medicine. Airway stabilization, advanced intravascular access procedures, and many other techniques are a mainstay of modern critical care. In addition, bronchoscopy-based procedures have traditionally been a defining skill for the practicing pulmonologist.

Over the last decade, technology has advanced greatly, especially in pulmonary procedural practice. These advances include endobronchial ultrasound (EBUS), pleuroscopy, bronchial thermoplasty, and many others. With this expanse, the question of how proper training in these new areas as well as in established procedures should be conducted so that physicians are taught to the highest standards and patients can rely on the highest competency of their treating health-care provider.

The American College of Chest Physicians (CHEST) convened a diverse group of individuals with content knowledge in procedural medicine, as well as in teaching, and training, who represent different specialty stakeholders and health-care systems. The group was tasked to assess the current state of training and, based on the findings, to issue statements on how new bronchoscopy training content and guidelines should be structured going forward.

## Materials and Methods

The determination of competency of trainees in pulmonary and critical care medicine in performing bronchoscopic procedures varies from program to program. Program directors and certifying

bodies need guidance to create standards for training programs. Little well-developed literature on the topic exists. To provide credible and trustworthy guidance in this document, rigorous methodology has been applied to the consensus statement development process.

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