

# Ambu



## BRONCHOSCOPY DURING THE COVID-19 PANDEMIC

### Summary of COVID-19 Guidelines and Publications



The benefits of single-use bronchoscopes to prevent and control infection are woven into many new industry guidelines in a world forever changed by COVID-19. As the virus demands attention to safety and forces shifts in patient volume and care, single-use devices safeguard the frontline. Read the latest guidelines [here](#).



# Summary of U.S. and International COVID-19 Guidelines & Publications:

## Recommendations for Use of Single-Use Bronchoscopes and Safe Bronchoscopic Sampling During the COVID-19 Pandemic

### U.S. GUIDELINES & PUBLICATIONS

#### **Society for Advanced Bronchoscopy Consensus Statement and Guidelines for Bronchoscopy and Airway Management Amid the COVID-19 Pandemic (Pritchett and others, 2020)**

"[I]t could be hypothesized that the use of a single-use, disposable bronchoscope might offer specific advantages. In addition to avoidance of reprocessing equipment, there may be other advantages to using a single-use bronchoscope. As most of these bronchoscopes are attached by a single cord to a monitor, less equipment is involved in set-up, post-procedure disinfection and transport. Additionally, most single-use bronchoscopes would only need a single user to operate, which may decrease the number of personnel required to assist with the procedure."

#### **American Association for Bronchology and Interventional Pulmonology (AABIP): Statement on the Use of Bronchoscopy and Respiratory Specimen Collection in Patients with Suspected or Confirmed COVID-19 Infection (Wahidi and others, 2020)**

"Disposable bronchoscopes should be used first line when available in patients with suspected or confirmed COVID-19 infection."

#### **Performing Tracheostomy During the COVID-19 Pandemic: Guidance and Recommendations from the Critical Care and Acute Care Surgery Committees of the American Association for the Surgery of Trauma (Michetti and others, 2020)**

"If available, use of disposable, single-use bronchoscopes is recommended."

#### **Tracheotomy in Ventilated Patients with COVID-19: Guidelines from the COVID-19 Tracheotomy Task Force, a Working Group of the Airway Safety Committee of the University of Pennsylvania Health System (Chao and others, 2020)**

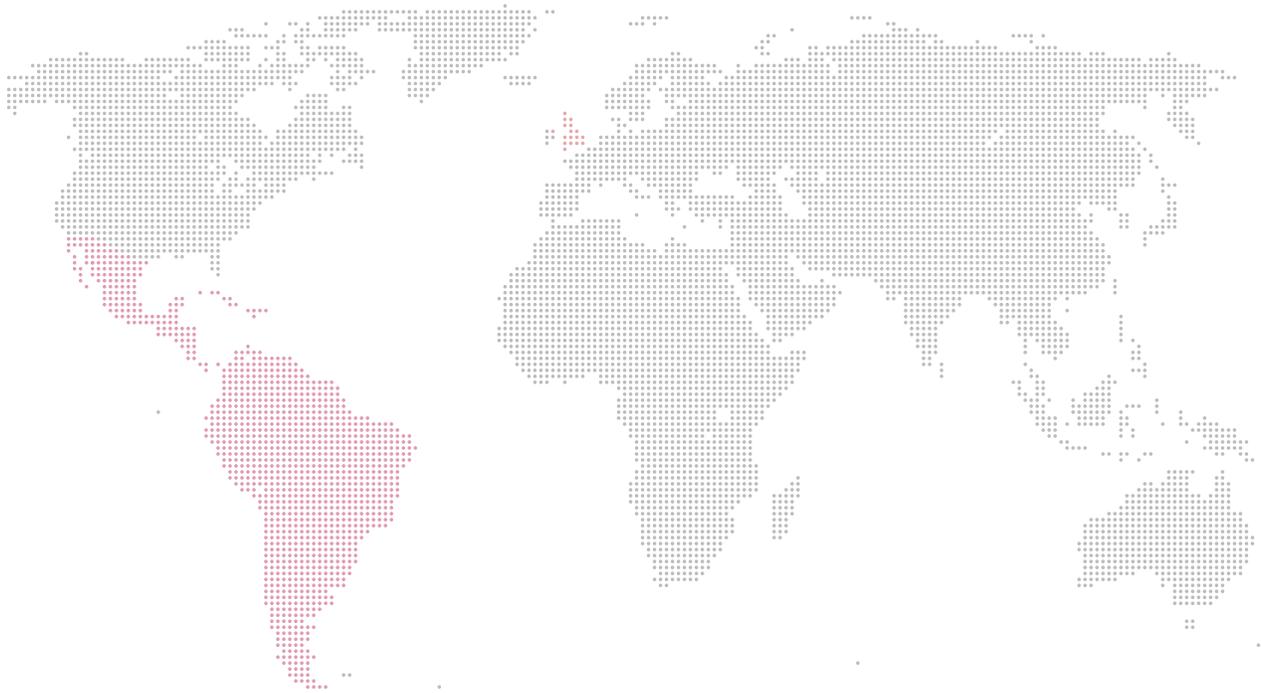
Percutaneous dilatational tracheotomy: "A disposable percutaneous dilatational tracheotomy kit should be used, as well as a disposable flexible bronchoscope with monitor (if using)."

#### **Performing Percutaneous Tracheostomy in a Viral Pandemic (CHEST Bronchoscopy Domain Task Force American College of CHEST Physicians, 2020)**

On the equipment list to perform percutaneous tracheostomy in a viral pandemic: disposable bronchoscope.

#### **Bronchoscopy in the Era of COVID-19: Providing Timely Care, Minimizing Exposures (CHEST Bronchoscopy Domain Task Force American College of CHEST Physicians, 2020)**

"Consider use of disposable bronchoscopes" for bronchoscopy in suspected or COVID positive patients.



## SOUTH AMERICAN AND CENTRAL AMERICAN GUIDELINES & PUBLICATIONS

### **Latin America and Brazil Overview: What Has the COVID-19 Pandemic Taught Us About Adopting Preventive Measures? (Cristina De Oliveira, 2020)**

"It immediately implemented control measures ... and investment in single-use equipment such as disposable bronchoscopes for bronchoscopy and percutaneous tracheostomy."

### **Argentina: Tracheostomy in the Intensive Care Unit: Guidelines During COVID-19 Worldwide Pandemic (Smith and others, 2020)**

Materials: "Disposable flexible video bronchoscope with remote display."

## U.K. GUIDELINES & PUBLICATIONS

### **Guidelines: Infection Prevention and Control 2020 (Association of Anaesthetists, 2020)**

"Single-use flexible fiber-optic bronchoscopes (FOBs) could potentially eliminate the risk of cross-infection. The cable attached to the FOB is also single-use. The monitor can be disinfected and reused."

"The use of single-use FOBs may be cost effective as

expenses related to processing, maintenance, repairs and any potential litigation are avoided."

### **Consensus Guidelines for Managing the Airway in Patients with COVID-19 (Cook and others, 2020)**

"Where practical, single-use equipment should be used."

### **Multidisciplinary Guidance for Safe Tracheostomy Care During the COVID-19 Pandemic: the NHS National Patient Safety Improvement Programme (NatPatSIP) (B A McGrath and others, 2020)**

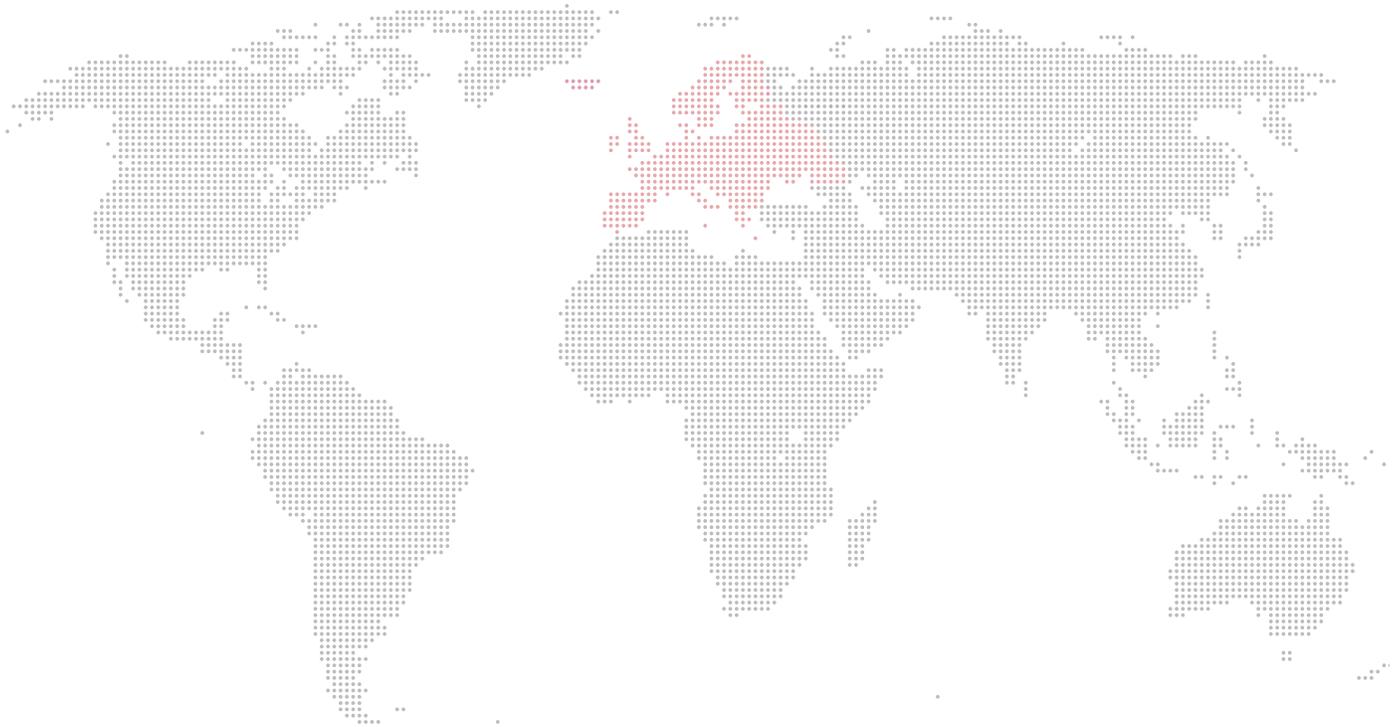
"The choice of using bronchoscopy during percutaneous tracheostomy in a patient with COVID-19 should reside with the operative team. If used, single-use bronchoscopes with a sealed ventilator circuit are recommended."

### **Multidisciplinary COVID-19 Tracheostomy Guidance (National Tracheostomy Safety Project, 2020)**

"If used, single-use endoscopes with a sealed ventilator circuit are recommended."

### **Should We Be Switching from Reusable Bronchoscopes to Disposable Due to the Risks of Cross-Contamination? A reply: (Bailey, 2020)**

"Single-use, flexible, fiber-optic bronchoscopes could potentially eliminate the risk of cross-infection and may be cost effective, as expenses related to processing, maintenance, repairs and any potential litigation are avoided. However, costs and benefits need to be weighed carefully by individual hospitals and intensive care units."



## EUROPEAN GUIDELINES & PUBLICATIONS

### **Bronchoscopy During SARS CoV-2 Pandemic: Recommendation of the Swiss Society for Pneumology (Franzen, Plojoux and Widmer, 2020)**

"If possible, if the SARS infection is proven or suspected, the use of disposable bronchoscopes (e.g. from Ambu) should be considered. This means avoiding operations with SARS-contaminated instruments with CoV-2, although proper preparation would kill the virus."

### **Irish Thoracic Society Statement on Bronchoscopy and SARS COVID-19 (Irish Thoracic Society, 2020)**

"Single-use bronchoscopes have a number of clear advantages:

- 1) Staff shortages: Where staff are absent there is no requirement to clean scopes
- 2) Out-of-hours bronchoscopy: No requirement to prepare or clean scope
- 3) Portability: Small portable screen and scope - reduced requirement for staff
- 4) Cross-contamination: No risk of cross-contamination
- 5) Cost: Single-use bronchoscopes are not expensive."

### **Single Use Bronchoscopes: Applications in COVID-19 Pandemic (Barron and Kennedy, 2020)**

"We ... endorse the statement that 'disposable bronchoscopes should be used first line when available' in patients with suspected or confirmed COVID-19 infection.

"Prior to COVID-19, single-use bronchoscopes had a number of potential advantages including cost, risk of nosocomial infection spread and portability.

"In the current COVID-19 era ... single-use bronchoscopes are associated with less staff handling of bronchoscopes prior to bronchoscopy which should reduce the risk of contamination also.

"Single-use bronchoscopes have also advantage in 'out-of-hour' bronchoscopy and bronchoscopy outside of the endoscopy or bronchoscopy unit."

### **The Italian Coronavirus Disease 2019 Outbreak: Recommendations from Clinical Practice (Sorbelli and others, 2020)**

"Single-use flexible bronchoscopes should be used as they are associated with a reduced risk of cross-contamination, and a separate screen is strongly advised."

### **The Italian National Association of Critical Area Nurses (Associazione Nazionale Infermieri di Area Critica) Recommends Single-Use Fiberscopes in COVID-19 Patients (Associazione Nazionale Infermieri di Area Critica, 2020)**

"Particular attention should be paid to refreshing the internal safety rules aimed at limiting the dispersion of contaminants containing SARS-Cov2 viruses, particularly for procedures at risk. ... Prefer the use of single-use fiberscopes."

**Hospital Surge Capacity in a Tertiary Emergency Referral Center During the COVID-19 Outbreak in Italy (Review)**  
**(Carenzo and others, 2020)**

"These items were left in the unit at all times. These included: disposable bronchoscopes ..."

**Special Precautions for Performing a Bronchial Endoscopy During the COVID-19 Epidemic Phase Recommendations of the French-Speaking Pneumology Society (SPLF)**

**(French-speaking Pneumology Society, 2020)**

"The use of a disposable endoscope must be considered and proposed to reduce the risk of aerial and manual exposure when cleaning the soiled endoscope."

**Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) and the Spanish Society of Respiratory Endoscopy (AEER): Consensus Recommendations on the Use of Bronchoscopy and Airway Sampling in Patients with Suspected or Confirmed COVID-19 Infection**

**(Cordovilla and others, 2020)**

"Equipment: Of choice: disposable bronchoscopes for single use with electronic screen for visualization of the bronchoscopy. The bronchoscope is discarded in the container arranged for it and the screen is cleaned like the rest of the surfaces in the room."

**The Cutting Edge of Thoracic Anesthesia During the 2019 Coronavirus Disease (COVID-19) Outbreak**

**(Fiorelli and others, 2020)**

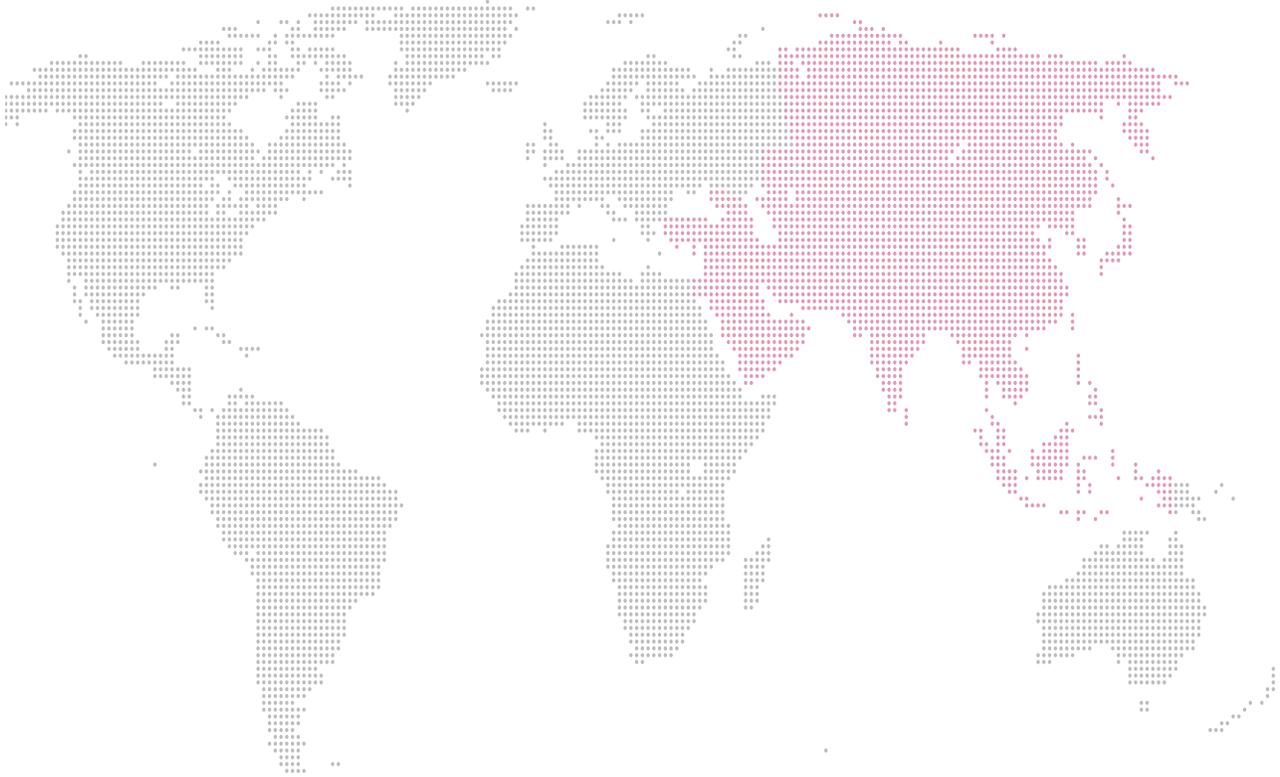
"If bronchoscopy is required, a disposable tool should be preferred."



*Single-use flexible bronchoscopes should be used as they are associated with a reduced risk of cross-contamination, and a separate screen is strongly advised.*

*The Italian National Association of Critical Area Nurses (Associazione Nazionale Infermieri di Area Critica) Recommends Single-Use Fiberscopes in COVID-19 Patients (Associazione Nazionale Infermieri di Area Critica, 2020)*





## ASIAN GUIDELINES & PUBLICATIONS

**Perioperative Management of Patients Infected with the Novel Coronavirus: Recommendation from the Joint Task Force of the Chinese Society of Anesthesiology and the Chinese Association of Anesthesiologists (Chen and others, 2020)**

**Expert Recommendations for Tracheal Intubation in Critically Ill Patients with Novel Coronavirus Disease 2019 (Zuo and others, 2020)**

"If available, prepare disposable flexible video bronchoscope."

"One disposable fiberoptic bronchoscope should be dedicated to a single patient."

Pre-intubation preparation: "(5) if available, preparation of a disposable flexible video bronchoscope; ..."

**Surgical Considerations for Tracheostomy During the COVID-19 Pandemic: Lessons Learned from the Severe Acute Respiratory Syndrome Outbreak (Review) (Tay, Khoo and Loh, 2020)**

"Percutaneous tracheostomy involves more extensive airway manipulation, such as bronchoscopy and/or serial dilations during trachea entry. ... Whenever possible, disposable equipment should be used."

**Intubation of the Patient with a Suspected or Confirmed COVID-19 Infection (Wong, Ong and Ang, 2020)**

"For rescue ventilation, a disposable, second-generation supraglottic airway device that allows direct fiber-optic intubation using a disposable bronchoscope is recommended."



*If available, use of disposable, single-use bronchoscopes is recommended.*

*Performing Tracheostomy During the COVID-19 Pandemic: Guidance and Recommendations from the Critical Care and Acute Care Surgery Committees of the American Association for the Surgery of Trauma (Michetti and others, 2020)*

## INTERNATIONAL CONSENSUS RECOMMENDATIONS

**Thoracic Anesthesia of Patients with Suspected or Confirmed 2019 Novel Coronavirus Infection: Preliminary Recommendations for Airway Management by the EACTA Thoracic Subspecialty Committee (Sentürk and others, 2020)**

"It is recommended to prepare a dedicated trolley for tracheal intubation of this special group of patients. ... Disposable devices (e.g. single-use blades, laryngoscopes, video laryngoscopes with remote screens, and flexible bronchoscopes) should be preferred."

"In cases intubated with ETT and BB, the position of the BB (and the tube) should be confirmed with a disposable flexible bronchoscope or an ETT with an embedded camera."

"The position of the DLT should be confirmed with a disposable flexible bronchoscope."

"Ideally, disposable bronchoscopes are the best option to avoid the need for decontamination after the procedure."

**International Pulmonologist's Consensus on COVID-19 (International pulmonologist's consensus group, 2020)**

"It can be performed to suction out mucous plugs in ventilated patients; consideration for use of a disposable bronchoscope if available."

**Performing Bronchoscopy in Times of the COVID-19 Pandemic: Practice Statement from an International Expert Panel (Luo and others, 2020)**

"Where possible utilize disposable single-use bronchoscopes if timely and validated reprocessing of the bronchoscopes is not ensured."

**Tracheostomy in the COVID-19 Era: Global and Multidisciplinary Guidance (Brendan. A. McGrath and others, 2020)**

"Single-use bronchoscopes with a sealed ventilator circuit are preferable when doing percutaneous tracheostomies."

# CLINICAL GUIDELINES RELEVANT TO SAFE BRONCHOSCOPIC SAMPLE COLLECTION

## **American Association for Bronchology & Interventional Pulmonology (AABIP): Statement on the Use of Bronchoscopy and Respiratory Specimen Collection in Patients with Suspected or Confirmed COVID-19 Infection (Wahidi and others, 2020)**

"If bronchoscopy is being performed for COVID-19 sample collection, a minimum of 2-3ml of specimen into a sterile, leak-proof container for specimen collection is recommended in suspected COVID-19 patients."

## **Performing Bronchoscopy in Times of the COVID-19 Pandemic: Practice Statement from an International Expert Panel (Luo and others, 2020)**

"Bronchoscopy in intubated COVID+ patients: Connect the BronchoSampler to the scope; connect the scope to aView monitor."

## **SEPAR and AEER Consensus Recommendations on the Use of Bronchoscopy and Airway Sampling in Patients with Suspected or Confirmed COVID-19 Infection (Cordovilla and others, 2020)**

"Perform a mini BAL better than a regulated BAL, since it minimizes the risk of contagion of the personnel who perform the endoscopy. It is recommended to collect 2-3ml in a sterile, sealed and dry container."

## **Bronchoscopy, Laryngoscopy, and Esophagoscopy During the COVID-19 Pandemic (Review) (Reddy, Nguyen and Deschler, 2020)**

"To obtain bronchoscopy sample for testing: 2-3ml of specimen should be collected into a sterile, leak proof container."



*With regard to intubation/airway inspections/BAL performance, I have found the new aScope 4 comparable in performance to our existing FOB.*

*–Dr Suveer Singh  
Chelsea & Westminster Hospital and Royal Brompton Hospital*



## aScope 4 Broncho

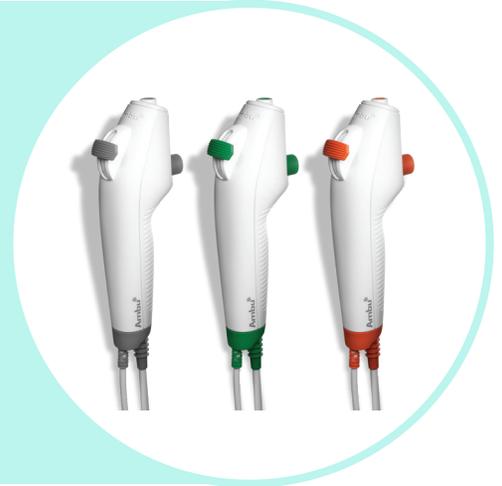
Single-Use Bronchoscopes for  
Guaranteed Sterility & Availability

**aScope 4 Broncho Slim 3.8/1.2**

**aScope 4 Broncho Regular 5.0/2.2**

**aScope 4 Broncho Large 5.8/2.8**

- Single-use with no risk of cross-contamination
- Eliminates repair costs and limitations of complex reprocessing
- Ready to use with the aView 2 Advance monitor



## aScope 4 Broncho Sampler

Closed-Loop System for Easy and  
Effective Bronchoscopic Fluid Sampling

- Closed-loop system reduces risk of sample loss and guarantees sample quality
- Single operator functionality from system assembly to sample procurement
- Vacuum bypass eliminates the need for suction tube switch



## aView 2 Advance Monitor

Portable full-HD monitor to help you focus  
on your patients

- Portable touchscreen displaying unit with full-HD resolution offering excellent imaging
- Adaptive image processing and user adjustments provide image quality optimization for various clinical situations
- Live image in seconds, over 3 hours battery, connect with PACS via DICOM over Wi-Fi/LAN
- Digital video-out to display live image in high quality on external screen or connectivity to content management systems
- Flexible design and intuitive user interface with 180-degree rotation options



Find out more at [ambuUSA.com](http://ambuUSA.com)

## References:

- Association of Anaesthetists (2020) *Guidelines: Infection prevention and control 2020*. [Online]. London: Association of Anaesthetists. Available at: [https://anaesthetists.org/Portals/0/PDFs/Guidelines/PDFs/Infection\\_Control\\_Guideline\\_FINAL2020.pdf?ver=2020-01-20-105932-143](https://anaesthetists.org/Portals/0/PDFs/Guidelines/PDFs/Infection_Control_Guideline_FINAL2020.pdf?ver=2020-01-20-105932-143) (Accessed: 26 May 2020).
- Associazione Nazionale Infermieri di Area Critica (2020) *Aniarti (Associazione Nazionale Infermieri di Area Critica) document for the management of patients in the critical area*. Available at: [https://pastsite.aniarti.it/sites/default/files/documenti/covid\\_19\\_aniarti\\_to\\_efcna.pdf](https://pastsite.aniarti.it/sites/default/files/documenti/covid_19_aniarti_to_efcna.pdf) (Accessed: 26 May 2020).
- Bailey, C. R. (2020) 'Should we be switching from reusable bronchoscopes to disposable due to the risks of cross-contamination? A reply', *Anaesthesia*, 75(5), pp. 697-698. doi: 10.1111/anae.15012.
- Barron, S. and Kennedy, M. P. (2020) 'Single Use Bronchoscopes: Applications in COVID-19 Pandemic', *Journal of Bronchology & Interventional Pulmonology*, p. 1. doi: 10.1097/LBR.0000000000000685.
- Carenzo, L. et al. (2020) 'Hospital surge capacity in a tertiary emergency referral centre during the COVID-19 outbreak in Italy', *Anaesthesia*, 1174(February), pp. 1-7. doi: 10.1111/anae.15072.
- Chao, T. N. et al. (2020) 'Guidelines from the COVID-19 Tracheotomy Task Force, a Working Group of the Airway Safety Committee of the University of Pennsylvania Health System', *Annals of Surgery*.
- Chen, X. et al. (2020) 'Perioperative Management of Patients Infected with the Novel Coronavirus: Recommendation from the Joint Task Force of the Chinese Society of Anesthesiology and the Chinese Association of Anesthesiologists', *Anesthesiology*, (Xxx), pp. 1-10. doi: 10.1097/ALN.0000000000003301.
- Cook, T. M. et al. (2020) 'Consensus guidelines for managing the airway in patients with COVID-19: Guidelines from the Difficult Airway Society, the Association of Anaesthetists the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetist', *Anaesthesia*, pp. 1-15. doi: 10.1111/anae.15054.
- Cordovilla, R. et al. (2020) 'SEPAR and AEEER consensus recommendations on the Use of Bronchoscopy and Airway Sampling in Patients with Suspected or Confirmed COVID-19 Infection', *Archivos de Bronconeumologia*, (xx). doi: 10.1016/j.arbres.2020.03.017.
- Cristina De Oliveira, A. (2020) 'What Has the Covid-19 Pandemic Taught Us About Adopting Preventive Measures?', *Texto Contexto Enferm [Internet]*, pp. 1-15. doi: 10.1590/1980-265X-TCE2020-0106.
- Fiorelli, S. et al. (2020) 'The cutting edge of thoracic anesthesia during the 2019 coronavirus disease (COVID-19) outbreak', *Journal of Cardiothoracic and Vascular Anesthesia*. W.B. Saunders. doi: 10.1053/j.jvca.2020.05.042.
- Franzen, D., Plojoux, J. and Widmer, A. (2020) *Bronchoskopie während SARS CoV-2 Pandemie*. Available at: <https://www.sgpp-sspp.ch/de/covid-19.html>.
- French-speaking Pneumology Society (2020) *Précautions particulières pour la réalisation d'une endoscopie bronchique durant la phase épidémique COVID-19. Recommandations de la Société de pneumologie de langue Française (SPLF)*. Available at: <http://splf.fr/wpcontent/uploads/2020/03/Precautions-particulieres-endoscopie-bronchique-SPLF-15-02-20.pdf> (Accessed: 26 May 2020).
- International pulmonologist's consensus group (2020) *INTERNATIONAL PULMONOLOGIST'S CONSENSUS ON COVID-19*. Available at: <https://scts.org/wpcontent/uploads/2020/03/Pulmonologist-Consensus-COVID-19-March-2020.pdf> (Accessed: 27 May 2020).
- Irish Thoracic Society (2020) *Irish Thoracic Society Statement on Bronchoscopy and SARS COVID-19*. Available at: <https://aabronchology.org/wp-content/uploads/2020/03/March-19th-Update-Summary-9 June 2020>.
- Luo, F. et al. (2020) 'Performing Bronchoscopy in Times of the COVID-19 Pandemic: Practice Statement from an International Expert Panel', *Respiration; international review of thoracic diseases*, pp. 1-6. doi: 10.1159/000507898.
- McGrath, B A et al. (2020) 'Multidisciplinary guidance for safe tracheostomy care during the COVID19 pandemic: the NHS National Patient Safety Improvement Programme (NatPatSIP)', *Anaesthesia*. doi: 10.1111/anae.15120.
- McGrath, Brendan. A. et al. (2020) 'Tracheostomy in the COVID-19 era: global and multidisciplinary guidance', *The Lancet Respiratory Medicine*, 2600(20), pp. 1-8. doi: 10.1016/s2213-2600(20)30230-7.
- Michetti, C. P. et al. (2020) 'Performing tracheostomy during the Covid-19 pandemic: Guidance and recommendations from the Critical Care and Acute Care Surgery Committees of the American Association for the Surgery of Trauma', *Trauma Surgery and Acute Care Open*. BMJ Publishing Group, 5(1), p. e000482. doi: 10.1136/tsaco-2020-000482.
- National Tracheostomy Safety Project (2020) *Multidisciplinary COVID-19 tracheostomy guidance*. Available at: [http://www.tracheostomy.org.uk/storage/files/Multidisciplinary\\_COVID\\_19\\_tracheostomy\\_guidance\\_30\\_4\\_20.pdf](http://www.tracheostomy.org.uk/storage/files/Multidisciplinary_COVID_19_tracheostomy_guidance_30_4_20.pdf).
- Pritchett, M. A. et al. (2020) 'Society for Advanced Bronchoscopy Consensus Statement and Guidelines for bronchoscopy and airway management amid the COVID-19 pandemic Society for Advanced Bronchoscopy Consensus Statement and Guidelines for bronchoscopy and airway management amid the COV', *Journal of Thoracic Disease*, (April), pp. 0-18. doi: 10.21037/jtd.2020.04.32.
- Reddy, P. D., Nguyen, S. A. and Deschler, D. (2020) 'Bronchoscopy, laryngoscopy, and esophagoscopy during the COVID-19 pandemic', *Head and Neck*, (April), pp. 1-4. doi: 10.1002/hed.26221.
- Şentürk, M. et al. (2020) 'Thoracic Anesthesia of Patients with Suspected or Confirmed 2019 Novel Coronavirus Infection: Preliminary Recommendations for Airway Management by the EACTA Thoracic Subspecialty Committee [published online ahead of print, 2020 Apr 11]', *Journal of Cardiothoracic and Vascular Anesthesia*. doi: 10.1053/j.jvca.2020.03.059.
- Smith, D. et al. (2020) 'Tracheostomy in the intensive care unit: Guidelines during COVID-19 worldwide pandemic', *American Journal of Otolaryngology - Head and Neck Medicine and Surgery*. W.B. Saunders, 41(5), p. 102578. doi: 10.1016/j.amjoto.2020.102578.
- Sorbello, M. et al. (2020) 'The Italian coronavirus disease 2019 outbreak: recommendations from clinical practice', *Anaesthesia*. Blackwell Publishing Ltd, 75(6), pp. 724-732. doi: 10.1111/anae.15049.
- Tay, J. K., Khoo, M. L. C. and Loh, W. S. (2020) 'Surgical Considerations for Tracheostomy during the COVID-19 Pandemic: Lessons Learned from the Severe Acute Respiratory Syndrome Outbreak', *JAMA Otolaryngology - Head and Neck Surgery*. American Medical Association. doi: 10.1001/jamaoto.2020.0764.
- Wahidi, M. M. et al. (2020) 'American Association for Bronchology and Interventional Pulmonology (AABIP) Statement on the Use of Bronchoscopy and Respiratory Specimen Collection in Patients with Suspected or Confirmed COVID-19 Infection', *Journal of bronchology & interventional pulmonology*, (4), pp. 1-5. doi: 10.1097/LBR.0000000000000681.
- Wong, J., Ong, S. and Ang, L. S. (2020) 'Intubation of the patient with a suspected or confirmed COVID-19 infection', *Trends in Anaesthesia and Critical Care*. Elsevier. doi: 10.1016/j.tacc.2020.06.003.
- Zuo, M. Z. et al. (2020) 'Expert Recommendations for Tracheal Intubation in Critically ill Patients with Noval Coronavirus Disease 2019', *Chinese medical sciences journal*, pp. 1-9. doi: 10.24920/003724.

# Ambu

Ambu USA  
6230 Old Dobbin Lane  
Columbia, MD 21045  
Tel. 800 262 8462  
Fax 800 262 8673  
ambuUSA.com

US: Rx only