



***" Regarding set up time, maintenance and portability, that's an easy win for single-use scopes "***

## Ambu® aScope Broncho in Intensive Care Units

### About Chelsea & Westminster Hospital

Chelsea & Westminster Hospital offers a wide range of specialist and general hospital services including an 11-bed adult Intensive Care Unit (ICU) that incorporates a High Dependency Unit (HDU) and two designated burns intensive care beds for critically ill patients with complex needs. The ICU is part of the North West London Critical Care Network and supports innovative, high-quality critical care.

### Royal Brompton Hospital at a glance

Royal Brompton Hospital is the largest specialist heart and lung centre in the UK and is among the largest in Europe. It has a 20-bed adult ICU for patients in the highest category of dependency, providing postoperative care for patients who have undergone surgery for heart and lung conditions as well as those with severe respiratory disease.

### Clinical challenges faced

The nature of indications for bronchoscopy in the ICU is usually unplanned and time-sensitive, which requires rapid deployment and reduced process time for bronchoscopes. Reusable fibrescopes (FOB) have been the gold standard in airway management, however, according to the National Audit Project (NAP4)<sup>1</sup> ICU and emergency departments (ED) report: 'immediate access to an FOBs for airway inspection or for difficult airway management was a recurrent problem'. Most hospitals in England have been designed to have shared availability of reusable FOBs which requires internal transfer between departments. In addition, the expensive reusable FOBs are often damaged in the ICU when they are being used during percutaneous tracheostomy. Therefore, obtaining an FOB in time in accident and emergency departments as well as isolated units within large hospitals may prove challenging<sup>2</sup>. The ICUs of both Chelsea & Westminster and Royal Brompton Hospitals were not excluded from this concern, especially during out-of-hours. Delays in accessing an FOB in emergency settings may ensue grave clinical consequences including death and hypoxic brain injury from the failure to successfully manage a difficult airway, which were recognised as 'avoidable' in the NAP4 report<sup>1</sup>.

### The ideal solution for bronchoscopy procedures in ICU and ED: Ambu aScope 4 Broncho

At Ambu, our mission is to provide our customers with innovative solutions that optimise workflow, reduce cost and improve patient care. In recognition of existing clinical gaps in airway inspection and difficult airway management, Ambu launched the world's first single-use flexible videoscope in 2009, which is superseded by the Ambu aScope 4 Broncho. The immediate access to the plug-and-play aScope 4 Broncho removes the risks associated with waiting for an available bronchoscope to be delivered, saving valuable time that can be spent on patients rather than on the equipment. Three readily available bronchoscopes of different sizes provide high quality and improved patient safety in one system at no additional cost.

***" The availability for emergency settings in critical care and acute care environments has been a key factor "***

### Reasons to reach for Ambu aScope Broncho: Chelsea & Westminster and Royal Brompton Hospitals' perspectives

Both hospitals have been using Ambu aScope since our second generation aScope (aScope 2, released in 2011) to improve airway management in the ICUs and EDs. The demand has been growing tremendously for various indications, especially since the units were introduced with Ambu aScope 3 in 2015. Based on real product experience, the consultant physician in critical care and respiratory medicine, Dr Suveer Singh, summarised their reasons to reach for Ambu aScope.

#### High quality, portable and immediately available

The NAP4 report recommends the immediate availability of an FOB in the ICU and ED as delayed access can cause 'avoidable' life threatening consequences<sup>1</sup>. Conventional video stack FOBs are costly, fragile and often require high level, time-consuming maintenance compared to the high quality, portable and immediately available Ambu aScopes.

Dr Singh expressed that: ***'To be honest, back then I didn't see the aScope as a likely replacement for the conventional video stack FOB, as there were reservations regarding image quality and performance. My view has changed, given the accessibility, portability, disposability and improved optics with the new aScope 4 and aView monitor. The exposure and red correction concerns have been addressed well, retaining the versatility and handling of the scope'. He also said: 'With regard to intubation/ airway inspections/BAL performance, I have found the new aScope 4 comparable in performance to our existing FOB. Whilst diagnostic quality imaging is desirable but infrequently essential in the ICU, I believe that it may become as good as conventional video stack FOB, with the advantage of utility'.***

“ **Portability and immediate availability let me see patients out of critical care and the device allows plenty of space around the bed areas in ICU, which always seem quite tight** ”

### Invaluable solutions to clinical scenarios

According to Dr Singh: ***'Initially we purchased aScope 3 as a back-up device, should we have problems with processing our FOB out-of-hours, as at the time, this was a concern. The use of aScope in percutaneous tracheostomy, clearance of upper and lower airway obstructions and all ICU indications have led to it being used more often than the conventional video stack FOB'***. Dr Singh expressed that ***'aScope has been invaluable in providing solutions to clinical situations'*** in his daily practice and gave examples of such scenarios.

#### Scenario 1:

'A male, who had presented with an exacerbation of chronic obstructive pulmonary disease, was recovering in the respiratory ward. He went into respiratory distress with two peri arrests despite no apparent upper airway obstruction and there was no focal abnormality on chest imaging. We quickly started high flow nasal O<sub>2</sub> and utilised the portable aScope through a mouth guard with local anaesthesia. Upon inspection of the tracheobronchial tree, I found excessive dynamic airway collapse (EDAC) with secretions ++. After a large amount of suctioning, his respiratory function improved significantly, to the point that within one hour, he was sitting up in bed, eating a sandwich'.

#### Scenario 2:

'Another occasion was a lady in the ICU, who had severe systemic sclerosis and resultant respiratory failure exacerbated by pneumonia. Rather than doing a rapid sequence induction and oral intubation with very limited mouth opening, once again I used the combination of high flow nasal O<sub>2</sub> with the aScope, railroading a size 6 ETT over the bronchoscope and performing an awake intubation with anaesthetic back up. Having minimal bed space, it was advantageous to have the compact aView screen that we could reposition around the bed as needed'.

#### Scenario 3:

'A further example was acute respiratory peri arrest due to retained secretions in patient who had developed a cerebrovascular accident after coronary artery bypass surgery and poor interaction. His inability to effectively clear secretions resulted in thick oronasal secretions obstructing the larynx. With the aScope 3 and aView immediately to hand, a nasal approach allowed effective clearing of the supraglottic and subglottic space, averting the need for intubation and mechanical ventilation in a frail patient, whose wishes were not for that'.

### Cost effective

EDAC and upper airway obstruction cases can be worsened by significant secretions with poor clearance or retained secretions and as a result would require intubation, ventilation and possibly a prolonged ICU stay. According to Dr Singh: ***'The cost of a UK critical care bed is averaged at around £1900 per night. Thanks to the aScope, patients never reached that critical care stage'***.

### Great tool for teaching

Dr Singh also shared his experience in using Ambu aScope 4 Broncho in teaching. He said: ***'One novel finding is that the new Large aScope 4 fits a cryoprobe in the working channel and although this technique within ICU is relatively new, we utilise the aScope for training on this during foreign body removal at the Bronchoscopy for Intensive Care workshops. The ability to slave the aView screen to a video stack screen is also helpful for teaching'***.

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

**Ambu aScope 4 Broncho is recommended by the National Institute for Health & Care Excellence (NICE)<sup>2</sup>**

- The Ambu aScope 4 Broncho is an acceptable alternative, where a multiple-use fibre optic endoscope is unavailable.
- There are also advantages during replacement of dislodged tracheostomy tubes in the intensive care setting.
- Making the Ambu aScope 4 Broncho available for use across settings is likely to improve outcomes and patient safety.
- Cost savings are likely in isolated units, operating theatre units and ICUs. As an example of the clinical area where savings could be greatest, using the Ambu aScope 4 Broncho in the intensive care setting is estimated to be cost saving (£6,632 per year) when more than 700 intubations are conducted each year, when there are two or fewer existing multiple-use fiberoptic endoscopes, and assuming that 5% of intubations are difficult.

**For more information please visit:  
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