

# Summary of "The single-use rhinolaryngoscope: An evaluation and cost comparison"

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Conducted at the tertiary otolaryngology center at St George's University Hospitals NHS Foundation Trust.

Declaration of interests

RVR is employed by Ambu A/S as Global Health Economist. This study was unfunded and independent of any honoraria.

## Why was the analysis conducted?

Conventional rhinolaryngoscopy is perceived to be safe and efficient. However, since contaminated endoscopes pose a moderate risk of cross-infection, reusable rhinolaryngoscopes undergo cumbersome high-level disinfection following each procedure. Furthermore, in cases where Creutzfeldt Jakob Disease cannot be excluded, the reusable rhinolaryngoscopes must be quarantined. With the current COVID-19 situation in mind, the clinical performance and cost associated with a single-use rhinolaryngoscopy alternative is particularly relevant to investigate.

## New study fills an evidence gap

A new study conducted in St George's University Hospitals NHS Foundation Trust offers some clarity. The study aimed to investigate whether the newly developed Ambu® aScope™ 4 RhinoLaryngo Slim was clinically comparable to reusable rhinolaryngoscopes and to examine the cost of introducing the single-use rhinolaryngoscope in various clinical settings.

The study is the first to combine a device evaluation of single-use rhinolaryngoscopes and cost-analysis within different clinical settings in order to answer the following questions:

**1.** Is aScope 4 RhinoLaryngo Slim clinically acceptable and comparable to the conventional reusable rhinolaryngoscope in the view of experienced otolaryngologists?

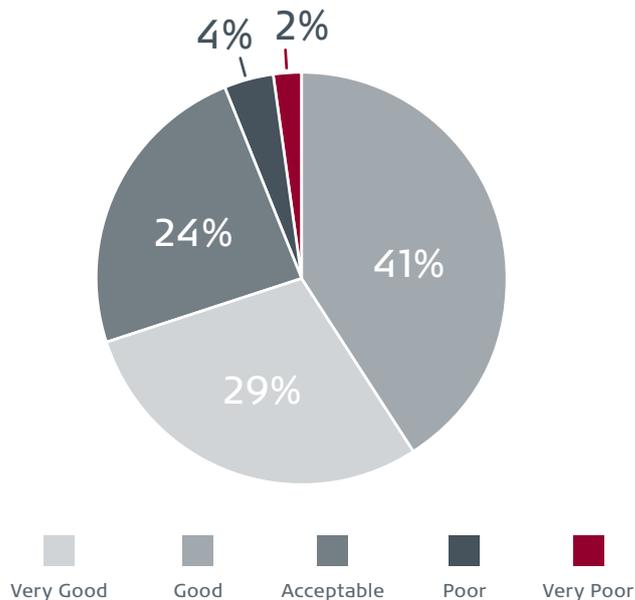
**2.** What is the cost of introducing aScope 4 RhinoLaryngo Slim in the outpatient clinic and acute surgical assessment units in relation to reusable eyepieces and video rhinolaryngoscopes?

## Results

### Device evaluation

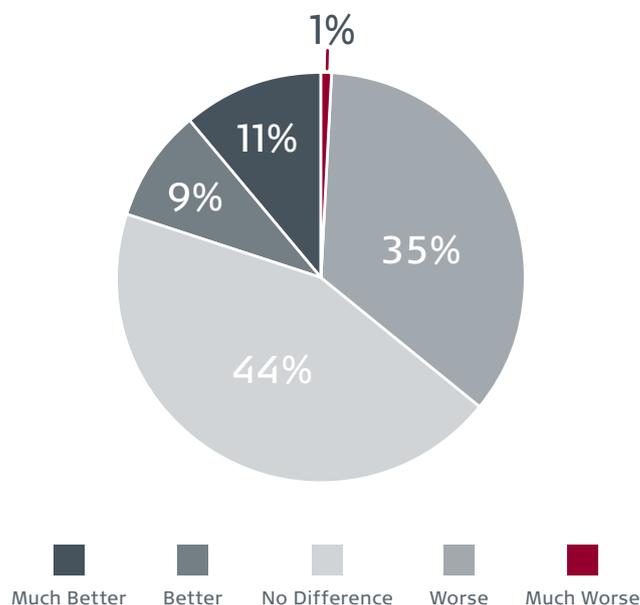
The highly experienced physicians evaluating the single-use aScope 4 RhinoLaryngo Slim found the overall quality, navigation and image quality acceptable or better.

Evaluation of aScope 4 RhinoLaryngo Slim



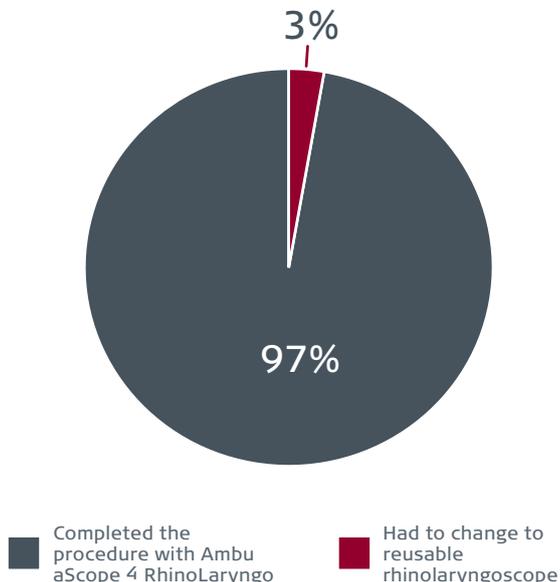
Accordingly, for the majority of the procedures, the single-use rhinolaryngoscope was perceived to be as good as or better than the reusable rhinolaryngoscope the physician would normally use.

aScope 4 RhinoLaryngo Slim compared to reusable rhinolaryngoscope



For 85% of the procedures, the physician stated that the single-use rhinolaryngoscope could replace the reusable one. Accordingly, the physician was able to complete the procedure at hand successfully with aScope 4 RhinoLaryngo Slim in 97% of procedures.

**Completion rate**



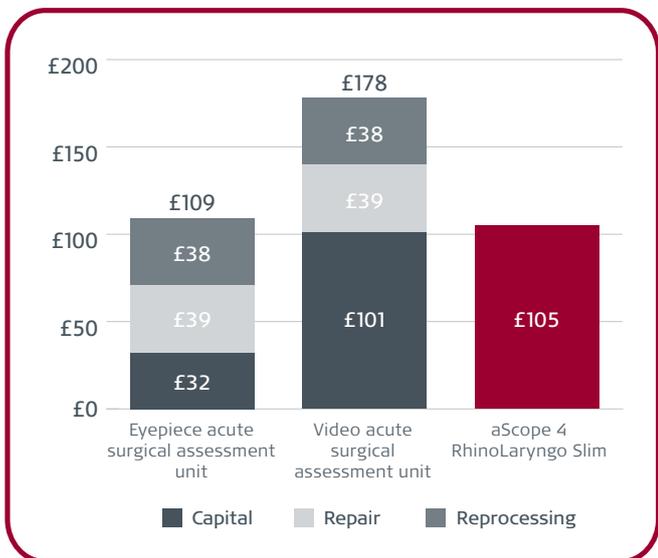
Qualitative comments from investigators revealed that patient comfort was deemed to be a particular advantage. In addition, the ability to use the screen for recording and teaching was found to be very useful.

**Cost analysis**

**Acute surgical assessment unit**

At St. George's University Hospital, the cost-comparison analysis found that aScope 4 RhinoLaryngo Slim reduces costs in the acute surgical assessment unit by £73 compared to reusable video rhinolaryngoscopes and is cost-equivalent compared to eyepiece rhinolaryngoscopes.

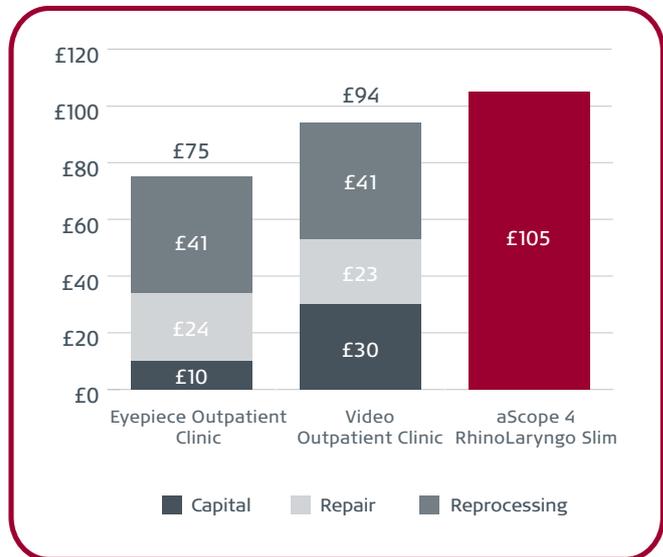
**Rhinolaryngoscopy cost of use – Acute surgical assessment unit**



**Outpatient Clinic**

The outpatient clinic conducts more than 4900 procedures per year. At this high volume, aScope 4 RhinoLaryngo was within £11 of being cost neutral compared to the reusable video rhinolaryngoscopes.

**Rhinolaryngoscopy cost of use – Outpatient clinic**



The Ambu single-use rhinolaryngoscope is an effective and cost-minimising alternative for procedures outside the outpatient clinic.

## Methodology

### Device evaluation

Device evaluation was assessed via a questionnaire completed by the physicians immediately after performing procedures with the Ambu aScope 4 RhinoLaryngo Slim in the outpatient clinic. In total, 61 evaluation forms were completed by 16 investigators. The investigators, including nine consultants, six registrars and one surgical trainee, possessed a high level of experience.

### Cost comparison

The cost-comparison analysis was conducted via the micro-costing methodology. Here 11 reusable rhinolaryngoscopes were followed and tracked through all processes needed to enable a patient-ready rhinolaryngoscope. Subsequently, costs associated with capital investments, repair and service and reprocessing costs were collected. Six scenarios were modelled, including reusable eyepiece procedures in the outpatient clinic and acute surgical assessment unit, reusable video procedures in the outpatient clinic and acute surgical assessment unit, and single-use procedures in the outpatient clinic and acute surgical assessment unit.

## Conclusion

The Ambu® aScope™ 4 RhinoLaryngo Slim single-use endoscope provides a clinically comparable user experience to a reusable rhinolaryngoscope, at least with regard to the variables evaluated in this study. In the acute surgical assessment unit, aScope 4 RhinoLaryngo provides a cost-equivalent alternative to the reusable eyepiece rhinolaryngoscope, and a cost-minimising alternative to reusable video rhinolaryngoscopes.

### Link to the article

<https://www.cambridge.org/core/journals/journal-of-laryngology-and-otology/article/singleuse-rhinolaryngo-scope-an-evaluation-and-cost-comparison/D91AD60DA3E208028B75A200B03FC5CF>



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