

COST COMPARISON OF SINGLE-USE AND REUSABLE RHINOLARYNGOSCOPES – A MULTI-CENTER STUDY

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Aim

The primary aim of this study was to investigate the cost of single-use rhinolaryngoscopes (RLS) compared to reusable RLS. The secondary aim was to examine the impact of various factors, such as reprocessing methods, procedure volume, and type of reusable RLS, on the cost per procedure.

Method

The cost analysis of reusable RLS was conducted using a micro-costing approach in three hospitals located in the UK and Ireland. These hospitals used different reprocessing methods, reusable RLS types, and had varying procedure volumes. Costs were collected for capitals including RLS and stack systems, repairs incl. service contracts and reprocessing incl. automated endoscopic reprocessors, drying cabinets, chemicals and PPE (but excl. electricity and water). The cost per procedure was then compared to the average selling price of a single-use RLS (Ambu® aScope™ 4 RhinoLaryngo), as reprocessing and repair costs are eliminated with single-use RLS.

Result

The average cost per procedure of a reusable RLS was £126, while that of a single-use RLS was £105, resulting in a cost saving of £21 per procedure when implementing single-use RLS.



Figure 1: Bar chart illustrating the per procedure cost for each hospital and the average cost of these when performing a rhinolaryngoscopy procedure with a reusable RLS compared to a single-use RLS.

This study suggests an average cost minimising of £21 per procedure when implementing single-use rhinolaryngoscopes.

However, the study highlights that cost variations in different hospitals are influenced by various parameters such as reprocessing techniques, clinical environment, procedure volume, and the type of rhinolaryngoscope used.

Conclusion

These findings suggest that implementing single-use rhinolaryngoscopes is a cost-minimizing option. However, the overall per procedure cost may vary depending on different parameters across different hospital settings and procedure volumes.

Hospital characteristics and associated per procedure costs

	Hospital A	Hospital B	Hospital C
Clinical Setting	60% OP 40% ER	ER	OP
Annual no of procedures	68	500	2801
RLs Type	Eyepiece	Eyepiece	Video
Reprocessing	Wipes	HLD	HLD
Capital cost, Reusables	£46	£10	£84
Repairs cost, Reusables	£62	£28	£31
Reprocessing cost, reusables	£24	£30	£62
Total costs of reusables	£132	£68	£177
Cost of single-use	£105	£105	£105
Incremental cost	£-27	£37	£-12

Table 1: Hospital characteristics and associated costs divided into capital, repair and reprocessing costs. *ER: Emergency room, OP: Outpatient clinic.

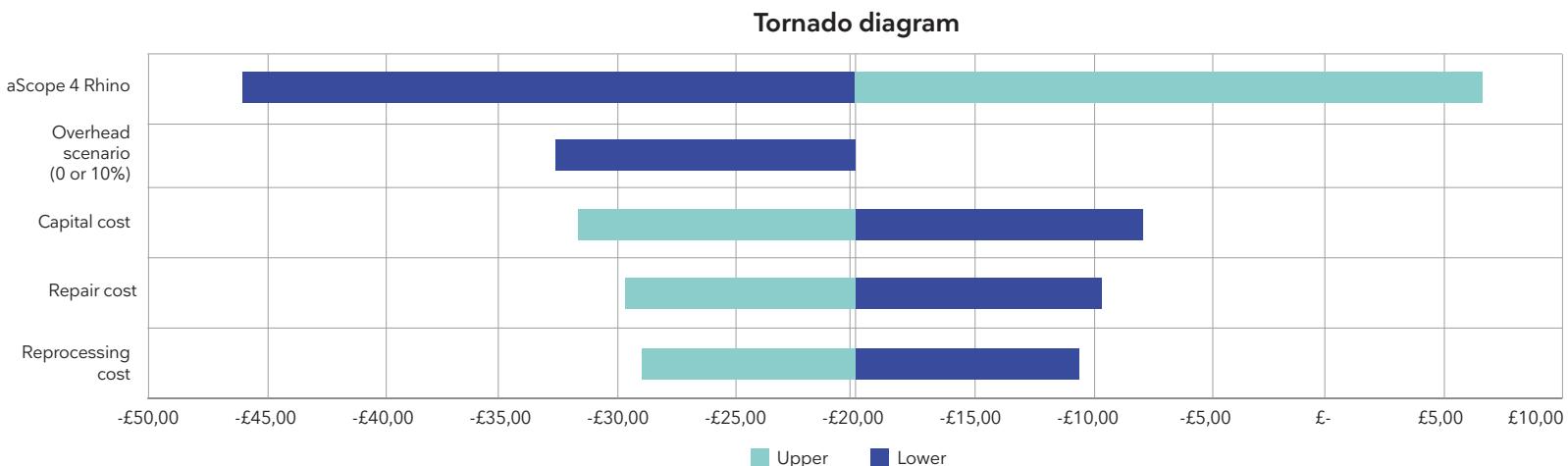


Figure 2: Tornado diagram illustrating the impact on the incremental cost when increasing or decreasing the cost related to each parameter cost with +/- 20% while maintaining all other variables constant.

Summary

This study investigated the cost per rhinolaryngoscopy using a reusable RLS compared to a single-use RLS when considering different parameters such as reprocessing methods, procedure volume, and RLS type.

This multi-centre analysis conducted in three hospitals from UK and Ireland revealed that the average cost per procedure using a reusable RLS was £126, while single-use RLS per procedure cost amounted to £105, resulting in a £21 cost saving per procedure. However, the study noted that the different parameters among hospitals make it challenging to compare outcomes as these parameters can simultaneously influence the results.