

The Economic and Capacity Impact of Time Saved in the Operating Theatre Performing Holmium Laser Enucleation of the Prostate with Moses™ Technology Vs. Standard Technology.



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Introduction & Objective

In a healthcare context increasingly under budget and capacity pressure, reducing time in the operating theatre (OT) can help hospitals optimising their operational efficiency and thus optimising their costs.¹

Holmium Laser Enucleation of the Prostate (HoLEP) is an established procedure for treatment of symptoms secondary to Benign Prostatic Hyperplasia (BPH). It can be performed with Standard Technology (standard HoLEP) OT

MOSES™ Technology (MoLEP, Boston Scientific Corp). A recent meta-analysis demonstrated significantly reduced operative time with MoLEP vs. standard HoLEP (-16.07 minutes, equivalent to -22,75%).²

Our objective was to understand the potential economic and capacity impact resulting from the time savings with MoLEP vs. standard HoLEP in hospitals in England, France, Germany and Italy.

Methods

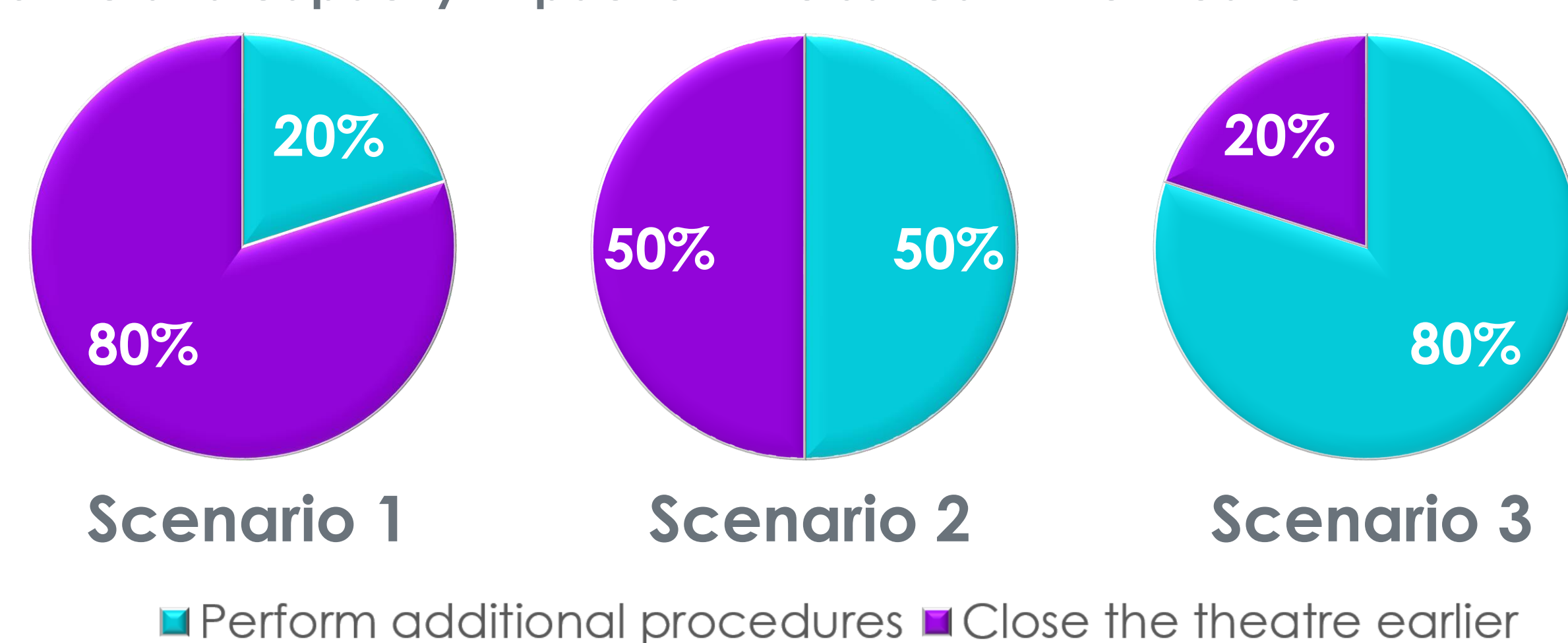
A health economic model was created to extrapolate the per-procedure theatre time savings reported in a meta-analysis onto annual procedure volumes of a theoretical small (1 HoLEP/ week), medium (3 HoLEP/ week), and large (15 HoLEP/ week) hospital.

In the model, individual proportions of the total time saved can be assigned in two ways:

1. perform additional procedures to increase revenue
2. finish the case mix earlier, saving theatre cost as part of the hospitals internal cost allocation

Different scenarios can be described according to time allocation between options 1 and 2. The potential economic impact was estimated for 3 different scenarios (see Fig. 1), by applying National Diagnosis-Related Group (DRG) tariffs to the number of additional procedures and OT cost per minute to the time saved to close earlier.³

Figure 1: Three scenarios were researched to estimate the potential economic and capacity impact of time saved in the theatre



Results

For every four procedures performed with MoLEP vs. standard HoLEP, sufficient time was saved to perform an additional procedure. The economic impact varies greatly, depending on the annual procedure volumes and DRG tariffs for HoLEP procedures. Hospitals with greater procedure volumes and tariffs are likely to benefit the most from time saved in the operating theatre (see Fig 2 with the UK example).

Scenario 1

The most conservative scenario resulted in a potential annual economic impact ranging from 8.292€ in a small Italian to 223.243€ in a large German hospital.

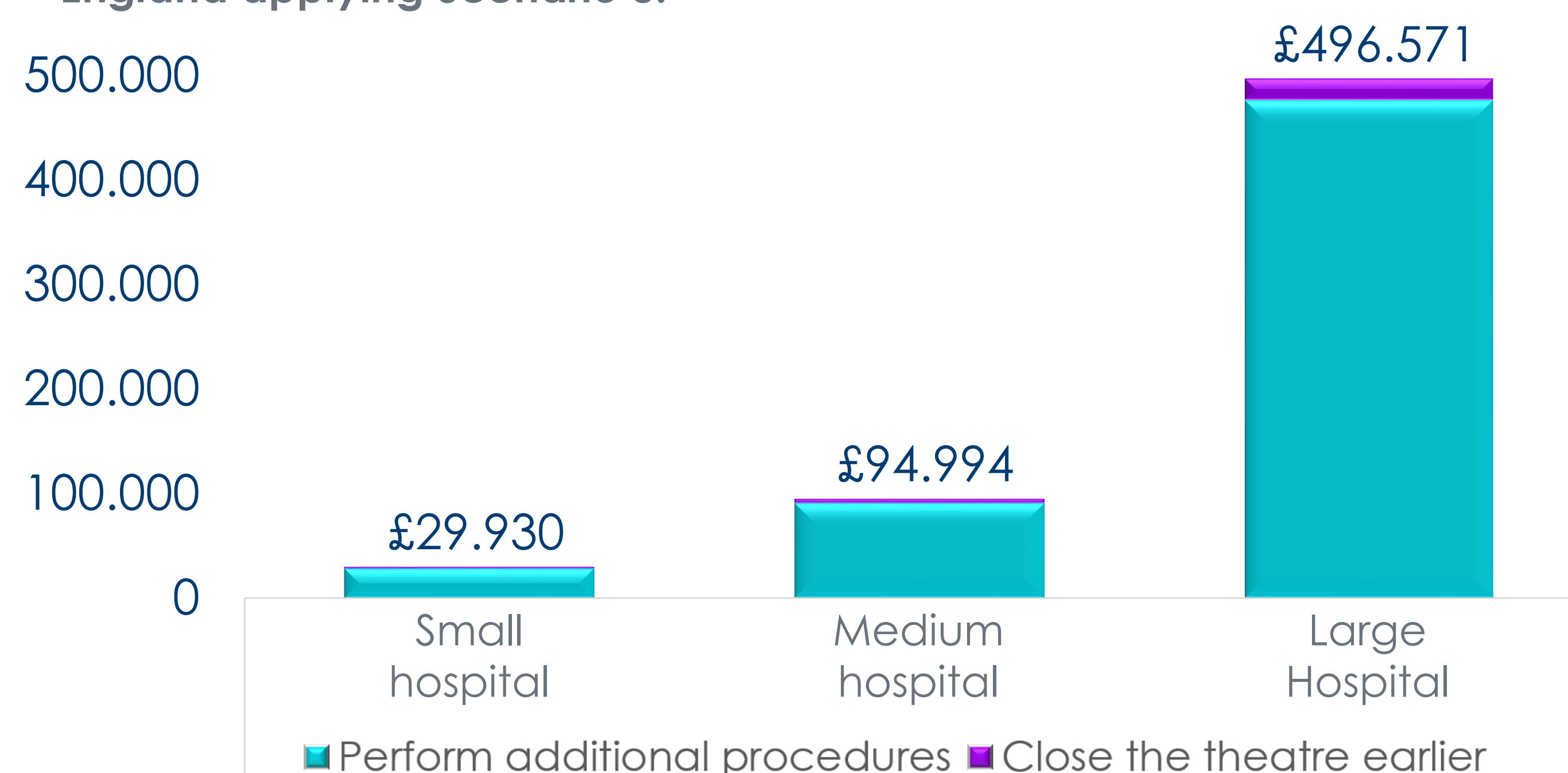
Scenario 2

Hospitals could increase their annual procedure volume by 14% and save 7 (small hospital) to 104 (large hospital) hours of theatre time in addition. In the French example, the annual economic impact would equate to up to 324.462€ (large hospital).

Scenario 3

Annual procedure volume could be increased by 23%, with 3 (small hospital) to 42 (large hospital) hours of additionally saved theatre time. In the German example, the annual economic impact would range from 32.927€ (small hospital) to 546.210€ (large hospital).

Figure 2: The potential economic impact of time saved in the OT in Hospitals in England applying Scenario 3.



Limitations

The realisation of the potential economic impact depends on the hospitals objectives as well as staff and facility constraints. Further research is warranted to confirm the described findings.

Conclusions

Using MoLEP vs. standard HoLEP saves time, potentially helping to reduce cost and increase annual revenue. Aspects of operative efficiency and workflow improvements should be considered for the adoption of Medical Technologies as efficiency gains may outweigh purchase cost.

References

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