

# The extent of experiencing availability issues and deteriorating performance associated with reusable cystoscopes, a multicentre study

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**Keywords:** single-use; reusable; availability; cystoscope; image quality

## Introduction and aim of the study

Almost four million cystoscopies are performed in Europe each year which makes it a high-volume procedure. Investments in cystoscopes are associated with high capital costs (approximately 20,400 EUR per cystoscope). For this reason, it is acknowledged that many facilities use older cystoscopes to avoid large investments in new cystoscopes. However, reusable cystoscopes tend to deteriorate after multiple use compromising image quality and bending performance. In most clinical settings the number of cystoscopes available are limited due to the large investment needed for new ones. Additionally, cystoscopes become unavailable when out for repairs, microbiological testing and reprocessing following a cystoscopy procedure. We aimed to investigate the extent of experiencing availability issues for cystoscopy procedures, the age of the oldest cystoscopes in use and the likelihood of experiencing cystoscopes deteriorating in bending performance.

## Materials and methods

Between February 24, 2020 and March 23, 2020, a total number of 105 urologists performing cystoscopies in both hospitals and clinics answered an electronic survey about potential availability issues at their institution and the likeliness of having experienced decreased image quality and deteriorated bending performance. The survey was conducted amongst 35 urologists in Germany, France and UK, respectively. Data were collected using the online survey tool, QuestionPro and analysed in Microsoft Excel.

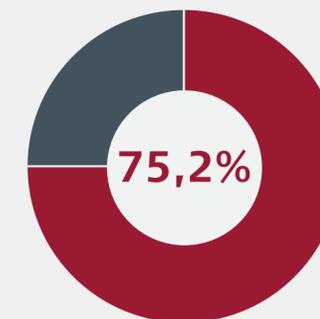
## Results

Among the 105 respondents 12 (11.4 %) were female and 93 (88.6 %) were male urologists. 75 (71.4 %) reportedly had more than 10 years of experience performing cystoscopies and 30 (28.6 %) had less than 10 years of experience. 23 (65.7 %) reportedly operated in hospital settings and 22 (62.9%) used single-use ureteroscopes at the time they answered the survey. To estimate the extent of experiencing availability issues the respondents were asked to rate how often they had to wait for a cystoscope to become available. To this question 20 (19.1 %) reported that they often had to wait, 69 (65.8 %) rarely had to wait and 16 (15.2 %) never had to wait for a cystoscope to become available. There were large differences between countries on how often the urologists had to wait.

12 (34.3 %) of the urologists from the UK reportedly often had to wait for a cystoscope to become available. In comparison only 5 (14.3 %) and 3 (8.6 %) urologists from France and Germany respectively, reported that they often had to wait for a cystoscope to become available. 99 (94.3 %) of the urologists declared how old their oldest cystoscope in use was. The age of the oldest cystoscope in use varied from 1-30 years. Comparing all three countries, the oldest cystoscope in use was on average 5.1 years.



Urologists from Germany reportedly had the oldest cystoscopes in use. German urologists reported their oldest cystoscope in use to be on average 8.2 years old.



Experience of lost image quality or lacked maneuverability

Finally, 79 (75.2 %) of the urologists had experienced that their reusable cystoscope lost image quality or lacked proper manoeuvrability.

## Interpretation of results

Results show that the majority of the urologist experience availability issues when having to wait for cystoscopes to become available. When comparing the three countries German urologists reportedly had the oldest cystoscopes in use. Reusable scopes are designed to have a shelf-life of approximately 7 years. Most of the urologist (75.2 %) had experienced loss of image quality and lack of proper manoeuvrability. This indicates that reusable cystoscopes deteriorate over time compromising bending performance and image quality.

## Conclusions

This study found that there are large differences in between countries when it comes to how often urologist have to wait for a cystoscope to become available. The results show that urologist from the UK more likely have to wait for cystoscopes to become available compared to urologists from Germany and France. Urologists from Germany were more likely to have older cystoscopes in use compared to urologists in France and the UK. Additionally, the majority of all urologists reported that they had experienced that their reusable cystoscope lost image quality or lacked proper manoeuvrability.

## References

Phan et al., J Endolum Endourol Vol 1(1):e3-e16; April 16, 2018.