

# Lung cancer surgery: Better survival probabilities with a higher case volume

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In elective surgery, does the likelihood of treatment success depend on how often the hospital or the medical team performs the intervention? This is the question addressed in eight commissions on minimum volumes awarded in Germany by the Federal Joint Committee (G-BA) to the Institute for Quality and Efficiency in Health Care (IQWiG). The

IQWiG report is now available for the third indication investigated, the surgical treatment of lung carcinoma. According to the findings, in this indication a largely positive correlation exists between the volume of services provided and the quality of treatment results: In hospitals with a larger case volume, the survival probabilities for patients who underwent this type of surgery are higher overall.

## **The most common malignant tumour in men, the second most common in women**

In 2014, 53,840 patients in Germany were diagnosed with [lung cancer](#), with more men being affected (64%). In the same year, 45,084 people died of [lung](#) cancer in Germany. The 5-year survival rate of patients is less than 20%, which is, among other things, due to the fact that lung cancer causes clinical symptoms only later on in the disease and is therefore often detected only at an advanced stage. For instance, approximately 50% of all lung cancer patients have distant metastases at the time of diagnosis. Lung cancer is thus the most common fatal malignant tumour in men and the second most common after breast cancer in women.

## **Surgical treatment of lung carcinoma**

The histological tumour type is decisive in the choice of therapy. In particular, the distinction between non-small-cell and small-cell lung carcinoma (NSCLC and SCLC) is important.

For NSCLC, surgery alone is recommended in early-stage disease; surgery with supportive chemotherapy is recommended in the later stage.

In contrast to NSCLC, SCLC grows very rapidly and often soon forms metastases in other organs. Surgery is only a treatment option in early-

stage disease.

In Germany, there is currently no binding minimum volume for hospitals with regard to lung cancer surgery.

## **Positive correlation between volume and quality**

On the basis of 19 [observational studies](#) included in the assessment, IQWiG sees a positive correlation between the volume of services provided and the quality of treatment results for the surgical treatment of lung carcinoma. In particular, the more frequent performance of such interventions increases the survival probabilities of patients. However, the certainty of this conclusion is impaired by the rather low analytical quality and occasionally inadequate reporting of study results.

The study results on the outcomes "overall survival", "treatment-related mortality" and "death in hospital" are decisive for IQWiG's assessment. According to these results, with a lower volume of services a higher mortality rate can be assumed in patients who underwent lung [cancer](#) surgery.

No usable results were available on the outcome category "morbidity" with the outcomes "disease-free survival", "serious, life-threatening or fatal infections", and "further serious treatment-related complications"). The same applied to the outcome "health-related quality of life". Accordingly, for these outcomes no conclusion can be drawn on the correlation between the number of interventions performed for the surgical treatment of lung carcinoma and the quality of treatment results.

With regard to other malignant lung tumours, IQWiG's search for meaningful studies on the correlation between the volume of services and the quality of treatment results was inconclusive. The IQWiG researchers are unable to answer the question as to the effects on the

quality of treatment results if specific minimum volume thresholds were to be introduced into [health care](#) for the surgical treatment of lung carcinoma, as no suitable publications are available.

## Process of report production

In December 2018, the Federal Joint Committee (G-BA) commissioned IQWiG to prepare the report on the correlation between the volume of services and the quality of treatment results in lung carcinoma in an accelerated procedure as a so-called rapid report. Interim products were therefore not published or made available for a hearing. This rapid report was sent to the contracting agency, the G-BA, in October 2019.

**More information:** [www.iqwig.de/en/projects-resul...id-report.10698.html](http://www.iqwig.de/en/projects-resul...id-report.10698.html)

Provided by Institute for Quality and Efficiency in Health Care

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