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## How many patients need lumbar spine surgery?

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EDITORIAL

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**The treatment rates for simple lumbar spine surgery vary little across Norway, but there seems to be a need for more complex spine procedures in the Northern Norway Regional Health Authority area.**

Lumbar spine surgery is currently performed at approximately 40 public hospitals and private institutions in Norway. Most of these report their activities to the National Quality Registry for Spine Surgery (1). Generally speaking, spine surgery can be divided into so-called simple and complex procedures, where *simple spine surgery* includes, for example, microsurgical procedures for lumbar disc herniation and spinal stenosis. Such interventions account for the majority of the roughly 5 300 lumbar operations that are undertaken on an annual basis in Norway. *Complex spine surgery* is frequently used to describe procedures that involve implants, for example in the form of pedicle screw fixations or artificial disc implants. The most common conditions that require such treatment are a slipped vertebra (spondylolisthesis) or a degenerated disc. The quality registry shows that the results of lumbar spine surgery are generally good: 88 % of the patients reported to be satisfied with the procedure 12 months after their intervention (1). In the literature, the benefits of simple spine surgery are well documented, but this is harder to prove for conditions that require more extensive procedures (2, 3).

**«Many would argue that the surgical treatment rate in a population is as much a matter of supply and demand as of actual clinical need»**

In the Journal of the Norwegian Medical Association, Ingebrigtsen and colleagues present an overview of treatment rates for lumbar spine surgery in Norway, with a focus on Northern Norway Regional Health Authority (4). The objective of the study was to investigate whether service provision in the region was consistent with the distribution of functions that has been stipulated for the various hospitals, and whether Northern Norway Regional Health Authority has the same treatment rates as the rest of Norway. The authors show that the treatment rates for simple spine surgery vary little between the health regions, but it seems as though fewer complex spine procedures are undertaken in the Northern Norway Regional Health Authority area than in the country as a whole. Such a difference in the number of complex spine procedures between Northern Norway Regional Health Authority and the rest of the country can have many different explanations, and the authors of the article provide no specific answer as to why this is so. Possible reasons could include fewer applications for relevant patients from the GPs, the Free Hospital Choice scheme, varying indications or lack of resources. The study points to a need for increased lumbar spine surgery activity in Northern Norway Regional Health Authority to bring the region up to the same treatment rate as the rest of the country. The authors estimate a need for 170 additional spine procedures per year, 30 of which should be complex procedures. This would indicate a considerable increase in the level of activity.

So how much spine surgery does a defined population really need? With an increasing number of MRI scanners in both the public and private sectors, the availability of radiological examination for spinal symptoms has gradually improved over the last 20 years. There have also been considerable developments in surgery. Diagnostics have become more widely available and surgical treatment has been made simpler: while conditions such as spinal stenosis and disc herniation previously were treated with wide laminectomy, these are now performed as microsurgery. Even complex spine procedures using implants can now be undertaken with the aid of percutaneous or other minimally invasive techniques. This has reduced the time needed for surgery, post-operative pain and the number of hospitalisation days, and has resulted in a significant increase in the number of outpatient spine procedures (3, 5). Many would therefore argue that the surgical treatment rate in a population is as much a matter of supply and demand as of actual clinical need.

However, there are some counterarguments. The report published by the Office of the Auditor General about outpatient diagnostic imaging indicates that the number of MRI examinations of the lumbar spine varies little between regions of residence in Norway (6). Despite the fact that surgical treatment has been simplified, the treatment rate for lumbar spine conditions has not increased in recent years. Grotle and colleagues showed a considerable increase in the number of spine procedures in Norway during the period 1999–2013, but this

trend has now levelled off, with surgical treatment rates remaining stable over the last five years (1, 7). Similar treatment rates can also be seen in Sweden, for example (8).

The results of the study by Ingebrigtsen and colleagues should be read by doctors who have an interest in the lumbar spine, and not least by those who are responsible for prioritisation of patient treatment in Northern Norway Regional Health Authority.

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Publisert: 23 November 2020. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.20.0850

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