

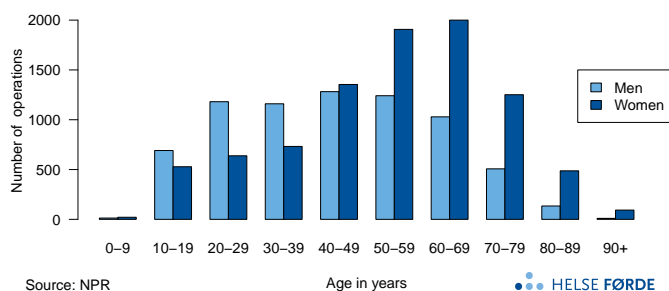
Ankle fractures

Ankle fractures are one of Norway's three most common types of fracture, most common among young men and older women, and account for about 9 % of all fractures. Ankle fractures have increased in recent years, both because the number of elderly people is increasing and because more people take part in high risk sports. The most common type of ankle fracture is an isolated fracture to one of the bony protuberances on either side of the ankle, accounting for 75 % of all ankle fractures. Conservative treatment will normally suffice for stable fractures, but more complicated fractures usually require surgical treatment. Surgical treatment has become more common with improved knowledge of the effect of accuracy in restoring proper alignment of the fracture on improved ankle function. The increase in the treatment of high-energy injuries in young patients has also led to an increase in the number of healthy elderly patients operated for ankle fractures.

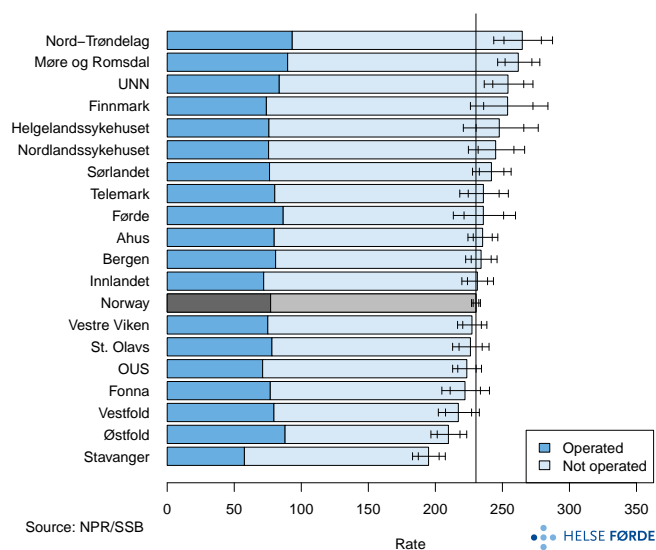
Background

Ankle fractures are defined by a primary or secondary diagnosis of S82.3, S82.4, S82.5, S82.6, S82.7 or S82.8 (ICD-10). Surgical treatment is defined by a diagnosed ankle fracture in combination with one or more of the procedure codes NHJ20, NHJ21, NHJ22, NHJ23, NHJ30, NHJ31, NHJ32, NHJ33, NHJ40, NHJ41, NHJ42, NHJ43, NHJ60, NHJ61, NHJ62, NHJ63, NHJ70, NHJ71, NHJ72, NHJ73, NHJ80, NHJ81, NHJ82, NHJ83, NHJ90, NHJ91, NHJ92, NHJ93 (NCSP). Patients aged 18 years or older are included in the sample, except in the figure that shows gender and age distribution of patients who have been operated.

Each year there are about 9,000 ankle fractures in Norway, and one third of them are operated.



Source: NPR
Total number of operations for ankle fractures during the period 2012–2016, for Norway as a whole. The patients have been broken down by gender and age group.

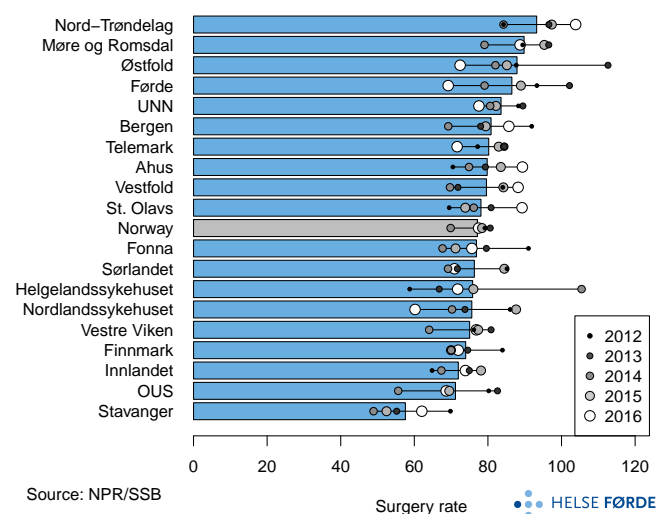


Source: NPR/SSB
Fracture rate: Total number of ankle fractures per 100,000 population (18 years and older) in 2012–2016, broken down by hospital referral area and for Norway as a whole. Bars show the average value per year with 95 % and 99.8 % confidence intervals, and are broken down by operated and non-operated fractures. The vertical line indicates rate for Norway as a whole. Rates have been adjusted for gender and age.

Results

The variation in surgery rates between areas exceeds what can be explained by chance alone. Nord-Trøndelag hospital referral area has the highest and Stavanger the lowest rate of operated ankle fractures.

The percentage operated varies from close to 30 % in the Stavanger and Finnmark areas, to 42 % in the Østfold area. On a national level 33 % of all ankle fractures are operated.



Source: NPR/SSB
Surgery rate: Number of operated ankle fractures per 100,000 population (18 years and older), broken down by hospital referral area and for Norway as a whole. The bars show the average value per year for the period 2012–2016, and the dots represent the rates for each year. The rates have been adjusted for gender and age.

Comments

The variation in surgery rates for ankle fractures is moderate to low. Stavanger stands out with a particularly low surgery rate, while there is relatively little variation between the other hospital referral areas.

The fracture rate does not vary much between hospital referral areas, and in our assessment, this variation could primarily reflect a variation in the incidence of ankle fractures. The fracture rate could explain part of the variation in surgery rates, but we also see variation in the percentage of patients operated on, and Østfold hospital referral area stands out with a higher percentage. It is difficult to assess whether the observed variation is warranted or not.