

TLV has been commissioned by the government to perform economic evaluations of medical devices. In the fall of 2015, TLV published an economic evaluation which indicates that thrombectomy is highly likely a cost-effective treatment. The results of an updated evaluation indicate that the treatment is cost-effective or could even be cost-saving.

Stroke is the leading cause of physical impairment

Stroke is the third most common cause of death in Sweden and the leading cause of physical impairment in adults. The annually societal costs for stroke are calculated to be approximately 16 billion Swedish kronor (SEK).

Economic evaluation of thrombectomy in 2015

In the fall of 2015, TLV published an economic evaluation of the cost-effectiveness of thrombectomy. The evaluation was based on five published clinical studies that demonstrated better clinical effects and an increase in value for patients treated with intravenous thrombolysis and thrombectomy compared to patients that were only treated with intravenous thrombolysis.

The results of the economic evaluation showed that thrombectomy was highly likely a cost-effective treatment method for acute severe ischemic stroke. Furthermore, the evaluation showed that social care and healthcare costs had a great impact on the cost-effectiveness. Less conservative assumptions regarding social care and healthcare costs showed that the treatment could even be cost-saving.

An updated economic evaluation shows that thrombectomy can be cost-saving

TLV has followed up the first economic evaluation from 2015 and further investigated aspects related to social care and healthcare as well as economic consequences. In the updated evaluation, a new calculation for social care and healthcare costs is included which indicates that the treatment is cost-effective. The results also include a calculation of costs for helicopter transportation of patients. Even when transportation costs are taken into account the treatment is cost-effective. These positive results are further strengthened if a reduction of time for caring for relatives and an increase in work productivity are taken into consideration.

The number of thrombectomy facilities and possibility to get there are important

In order to reach full capacity of thrombectomy, a balance between the number of thrombectomy facilities and the possibility to get to one within a limited period of time is necessary. Transportation time is an important factor since thrombectomy has a greater effect the sooner treatment is administered.

Several variables affect whether or not an individual can arrive in time for treatment with thrombectomy. For example, an individual or someone in their close proximity must have sufficient knowledge to recognize stroke symptoms in order to call for emergency services as quickly as possible. There is also a need for sufficient knowledge within healthcare and adequate resources to optimize healthcare processes. This requires that there are interventionists that can perform thrombectomy and that there is a geographic distribution of thrombectomy facilities. Since thrombectomy can be performed at regional hospitals and since time is of the essence for treatment, the total time to a hospital with thrombectomy facilities is central for the evaluation.

Difficulty in predicting the degree to which healthcare needs to develop and adjust

Estimations on how the number of thrombectomies could progress annually vary. Due to this variation it is difficult to predict the degree to which healthcare needs to develop and adjust. Despite this, it is reasonable to assume that the number of patients treated with thrombectomy will increase in the future. Within healthcare, measures have already been taken to handle an increase in thrombectomies; such as expanding the capacity to perform thrombectomies at several thrombectomy facilities. Further reinforcements could be required for healthcare to fully be able to handle predicted increase of thrombectomies.

Thrombectomy facts

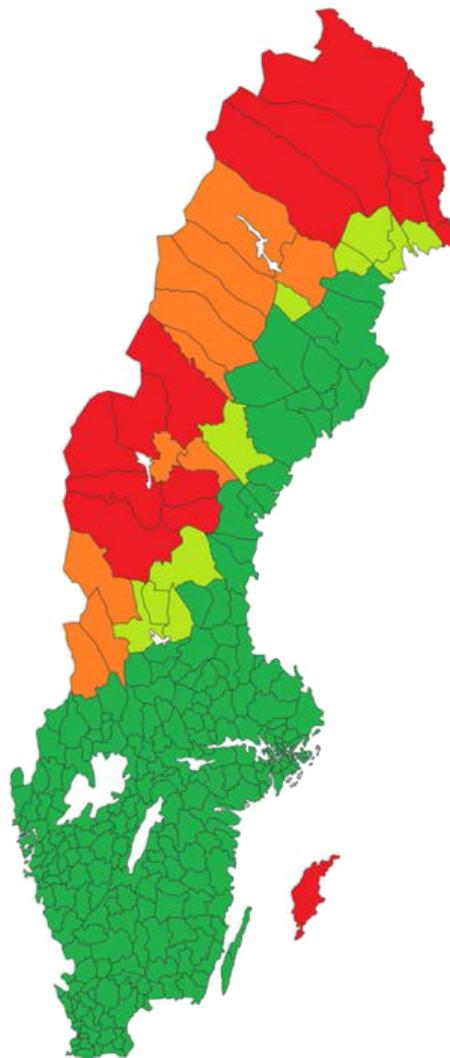
In addition to the current treatment of stroke, intravenous thrombolysis when possible, there is also treatment with thrombectomy. Thrombectomy involves inserting a catheter through the circulatory system from the groin to the brain's blood vessels, most commonly with a stent retriever, whereupon the blood clot is mechanically removed.

Access to regional hospitals

The map presents a possible future scenario with full scale capacity of thrombectomy facilities at all regional hospitals. The map features the percentage of the Swedish population that is dependent on helicopter transportation to reach a regional hospital within three hours total transportation time from home. The redder a municipality is the more dependent it is on helicopter transportation. The more dark green a municipality is the more independent it is of helicopter transportation.

TLV cannot determine if the most appropriate maximum transportation time to be used in the analysis should be two or three hours. An analysis has also been done with a maximum transportation time of two hours. Further analyses were performed for scenarios without the capacity of the thrombectomy facilities at the University Hospital of Umeå (NUS) or Örebro University Hospital.

Access to a thrombectomy facility by ambulance if there are facilities at all the regional hospitals and the maximum transportation time is three hours



TLV's commission for medical devices

Since 2012 TLV has been commissioned as a trial by the government to perform economic evaluations of medical devices. A final report will be presented by December 15, 2016.