

Time delays to thrombectomy for stroke reduce patient lifetime and economic value of care

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Every minute that endovascular thrombectomy (EVT) for a stroke patient is delayed decreases the patient's quality of life and lifespan, and reduces the significant monetary benefits that EVT provides. A new study shows that using a Markov model of lifetime quality-adjusted life years (QALYs) of EVT-treated patients, every 10 minutes of delayed care reduced a patient's disability free lifetime by about 40 days.

In addition to analyzing a person's QALYs, the study—Lifetime Quality of Life and Cost Consequences of Treatment Delays in Endovascular Thrombectomy for Stroke Based on HERMES Data, released today at the 15th Annual Meeting of the Society of NeuroInterventional Surgery—also evaluated [health care costs](#) and societal costs, which include losses of productivity and informal care given by family members.

The study found that time delays to EVT significantly reduce the economic value of [stroke](#) care, i.e. the amount of health expenditures needed to achieve QALYs for a patient in a particular health care setting. An economic measure that accounts for value of care is net monetary benefit, which combines weighted QALYs and costs into one composite outcome. A time delay of 10 minutes reduced the net monetary benefit of EVT by about \$10,000 taking health care system or societal perspectives, respectively.

"This study shows that time delays can have a significant impact on a patient and society," said Dr. Wolfgang Kunz, lead author of the study and radiology resident at Ludwig-Maximilians-University in Munich, Germany. "Significant time delays of on average 2 hours could be prevented in triage if EMS send patients with severe signs of stroke directly to a comprehensive or Level 1 stroke center that provides EVT instead of the closest primary stroke center."

Other recommendations include improving in-hospital workflow by notifying the hospital in advance to have the full stroke team ready when the patient arrives in the emergency room and by distributing tasks among a coordinated stroke team.

"Given the dramatic financial benefits to [health care](#) systems by increasing efficiency, there should now be greater impetus toward investment into processes and technologies that reduce onset to reperfusion times," said Dr. Mayank Goyal, senior author of the study, chair of the HERMES collaboration and neurointerventionalist at University of Calgary in Canada.

Provided by Society of NeuroInterventional Surgery

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