Using a mathematical model developed in a previous study at Leiden University Medical Center, the effect of allocating OR time during regular working hours for non-elective neurosurgical procedures at AUH was analysed, so that a weighted trade-off could be made between cancellations of elective patients due to an overflow of non-elective patients and unused OR time due to excessive reservation of time for non-elective patients. This allocation was tested in a six-week pilot study during weeks 24 & 25 and weeks 34-37 of 2020 before being implemented in 2021.

In the 35 weeks following the implementation, the new allocation strategy resulted in a significant 77% decrease in the cancellation of elective neurosurgical procedures when compared with the same time period in 2019, with a significant 16% increase in surgical productivity.

This study shows that with mathematical modelling complex problems in the distribution of neurosurgical OR capacity can be solved, improving both patient safety and the working environment of neurosurgeons and OR staff [1)]

1)
Zonderland ME, Gudmundsdottir G, Juul N, Bjerregaard C, Schulz Larsen K, von Oettingen G. Allocating operating room capacity to non-elective neurosurgical patients improves access and safety for elective patients at Aarhus University Hospital. Br J Neurosurg. 2023 Jul 5:1-7. doi: 10.1080/02688697.2023.2228916. Epub ahead of print. PMID: 37403673.