Urgent neurosurgery

- A novel IagPLS baseline correction method for glioma identification using Raman spectroscopy
- NIR-II Engineered Exosome Nanotheranostic Probes for "Oriented Blasting" in Orthotopic Glioblastoma
- Self-inflicted transorbital intracranial foreign body following ingestion of hallucinogenic psilocybin mushrooms
- Global burden and trend of stroke attributable to metabolic risks among young adults (20-39 years old) from 1990 to 2021
- Glioblastoma induces CAF-like astrocyte activation via the AKT/mTOR-SERPINH1/COL5A1 axis
- Evaluating the Diagnostic and Prognostic Value of Peripheral Immune Markers in Glioma Patients: A Prospective Multi-Institutional Cohort Study of 1282 Patients
- Peripheral MicroRNA Signatures in Adolescent Depression
- Management outcome of a patient with a self-inflicted multiple intracranial nail impalement in a tertiary hospital in Uyo: illustrative case

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Surgimate

An urgent surgery is one that can wait until the patient is medically stable, but should generally be done today or tomorrow, and an emergency surgery is one that must be performed without delay; the patient has no choice other than immediate surgery, if they do not want to risk permanent disability or death.

A study addresses neurosurgical scheduling within the Department of Neurosurgery at Aarhus University Hospital (AUH). The department provides neurosurgical care to a population of 1.3 million in central Denmark, and has treatment obligations for specific neurosurgical diseases for the entire country, which has a population of 5.8 million. Efficient utilization of the department's four operating suites is crucial to ensure that patients have timely access to both non-elective and elective neurosurgical procedures. Historically, the elective operating room (OR) schedule was made without consideration of the possible arrival of non-elective patients; consequently, elective surgeries were often cancelled to accommodate those with more urgent indications. The challenge was thus to introduce a structured way of planning for these non-elective surgical procedures that would minimise the need for cancelling elective surgeries without decreasing overall productivity.

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.