

Risk of death highest following surgery in afternoons, at weekends, and in February

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New research presented at this year's Euroanaesthesia show that on weekends, in the afternoons and in February are the times when the risk of death following surgery is the highest. The research is by Dr Felix Kork and Professor Claudia Spies, Charité - University Medicine Berlin, Germany and colleagues.

Hospital mortality is subject to day-night, weekly and seasonal variability. This has been shown for various populations, settings, and in different regions of the world. However, a cyclic influence on [hospital mortality](#) has not been shown in [patients](#) after [surgery](#). In this study, the researchers investigated the daily, weekly, and seasonal variability of hospital mortality in patients after surgery.

A [retrospective analysis](#) was carried out patients who underwent surgery between 2006 and 2011 at the two University Hospital Campuses of Charité Tertiary Care University Center, Berlin. Data was then modelled to work out cyclical patterns.

In this first analysis of the data, a total of 218,758 patients were included. Hospital mortality showed variability over the course of the day, during different weekdays, and different months. Surgery conducted in the afternoon was associated with 21% increased risk of death compared with surgery conducted at other times of day. Surgery at the weekend was associated with a 22% increased risk of death compared with surgery on weekdays. February was the highest risk month for surgery, with surgery in February associated with a 16%

increased risk of death compared with surgery in all other months. Further work on the data will be carried out in the coming months, including looking at the possible reasons behind the variations.

The authors say: "Several factors may have influenced this outcome. For example, it may be that standard of care differs throughout the day and between weekdays and weekends. Although we controlled for risk factors including emergency surgery in our study, it may very well be that the patients treated in the afternoon and on the weekends were more severely ill. We need more data to draw conclusions regarding seasonal variation in postoperative outcome."

They add: "Despite having an accredited quality management system in place in our hospitals, as well as having the European Society of Anaesthesiology's Helsinki Declaration of Patient Safety in Anaesthesiology implemented, this study shows that we should seek to further improve patient safety."

Provided by European Society of Anaesthesiology

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