

# Operative death rates higher at weekend, warn researchers

May 28 2013

---

There is a higher risk of death for patients who have elective surgery later in the week and at the weekend, compared with those earlier in the week, a paper published today on *BMJ* website suggests.

Previous research has suggested a significantly higher risk of death if admitted as an emergency patient at the weekend compared with a weekday. Plus, other papers have described the "weekend effect".

Researchers offer two potential explanations for this: poorer quality of care at the weekend (which can be attributed to staffing levels and / or less senior / experienced staff) and [patients](#) who are admitted or operated on at the weekend being more severely ill.

In this, the first study to focus on day of [elective surgery](#) to report a 'weekday effect', researchers from Imperial College London investigate [death rates](#) for planned admissions by day of the week of procedure, hypothesising that if there is a quality of care issue at weekends, higher death rates would be seen.

National hospital administrative data were used, linked with [death certificates](#). Information was used on patients' age, gender, source of admission and diagnoses. Mortality outcome was defined as any death occurring within 30 days of the index procedure.

The researchers focussed their study on five higher-risk major [surgical procedure](#) groups: excision of oesophagus and / or stomach; excision of

colon and / or rectum; [coronary artery bypass](#) graft; repair of [abdominal aortic aneurysm](#) and excision of lung.

There were 4,133,346 elective inpatient surgical procedures with 27,582 deaths within 30 days of the date of procedure during 2008/2009 to 2010/2011. 4.5% of this surgery was performed at the weekend.

Weekend patients tended to have fewer diseases, fewer admissions, longer waiting time and lower-risk surgery.

The overall risk of 30-day death for patients undergoing elective surgery increased with each day of the week the procedure was performed (by an odds ratio factor of 1.09 per day from Monday). Compared with Monday, the risk of death was significantly higher if procedures were carried out on a Friday. There were also significant differences in the observed rates of [death](#) for each day of the week, compared with Monday, for all procedures.

The 30-day mortality rates (for the five selected major survival procedures) per 1000 admissions were: 35 for excision of oesophagus and/or stomach; 24 for excision of colon and/or rectum; 20 for [coronary artery bypass graft](#); 34 for repair of abdominal aortic aneurysm and 20 for excision of lung. All procedures, apart from repair of abdominal aortic aneurysm, had statistically significant trends towards higher mortality at the end of the working week and weekends compared with Monday.

The findings suggest that the weekend effect might be more pronounced for patients with more diseases and for patients with three or more previous admissions, than for patients with none.

The researchers say that their analysis confirms their hypothesis that there is a 'weekday effect' on [mortality](#) for patients undergoing elective

surgery. They say that serious complications are more likely to occur within the first 48 hours post-operatively and a failure to rescue the patient may be due to well-known issues relating to reduced, and / or locum, staffing and poorer availability of services.

They conclude that without more information related to surgical care processes, including the organisation of services / staffing, it remains unclear if the estimated risks can be entirely attributed to differences in quality of care and provision needs to be made for adequate services to support these patients and ensure the best outcome.

In an accompanying editorial, doctors from the Mount Sinai Hospital in Toronto say that reassuringly, the "weekend effect" is not due to reduced staffing levels. They say the paper's findings do however beg the question, what makes these patients different? Doctors Kwan and Bell question whether there are any differences between "surgeons who operate or the surgical teams who work at weekends and those who work in the week". They conclude the scheduling of elective procedures can be controlled but ask whether we are willing to "sacrifice the safe provision of care for shorter procedural wait times and length of stay".

**More information:** Day of week of procedure and 30 day mortality for elective surgery: retrospective analysis of hospital episode statistics, *BMJ*, 2013.

Editorial: Should we rethink the scheduling of elective surgery at the weekend? *BMJ*, 2013.

Provided by British Medical Journal

Citation: Operative death rates higher at weekend, warn researchers (2013, May 28) retrieved 7 May 2023 from <https://medicalxpress.com/news/2013-05-death-higher-weekend.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.