

# Most deaths related to noncardiac surgery occur after surgery and after discharge from hospital

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It's not the operating room that is risky for patients undergoing noncardiac surgery; it's the recovery period. According to a large

international study, only 0.7% of deaths in these patients occurred in the operating room, whereas 29% of deaths occurred after discharge from hospital. The study, which included patients at 28 centres in 14 countries, was published in *CMAJ (Canadian Medical Association Journal)*.

"Given that most deaths in adults undergoing [noncardiac surgery](#) occur not in the [operating room](#), but afterwards, efforts to improve postsurgical care in hospital and at home has substantial potential to reduce mortality," says author Dr. P.J. Devereaux, McMaster University, Hamilton, Ontario.

The study, which included 40 004 adults aged 45 years or older in North and South America, Asia, Europe, Africa and Australia who underwent surgery between 2007 and 2013, found that 1.8% died within 30 days of noncardiac surgery. Major bleeding, injury to the [heart muscle](#) and severe infection (sepsis) accounted for a large portion of deaths (45%).

"Approximately 100 million adults aged 45 or older undergo noncardiac surgery worldwide every year, therefore an estimated 1.8 million people die of complications within 30 days," says Dr. Devereaux. "This means that death after surgery is a major global health burden."

The authors suggest that solutions focused on prevention, early identification and close management of bleeding, cardiac issues and infection may help to reduce these preventable deaths.

Data published are from the Vascular Events in Non-cardiac Surgery Patients Cohort Evaluation (VISION) study funded by more than 70 sources.

In a linked commentary, Dr. Barnaby Reeves, Bristol Medical School, University of Bristol, Bristol, United Kingdom, salutes the achievement

of the study investigators but cautions policy-makers to be mindful of inherent biases in such studies when considering the observed relationships between complications and mortality.

"Association between complications and death within 30 days after noncardiac [surgery](#)" is published July 29, 2019.

**More information:** Association between complications and death within 30 days after noncardiac surgery, *CMAJ* July 29, 2019 191 (30) E830-E837; [DOI: 10.1503/cmaj.190221](https://doi.org/10.1503/cmaj.190221)

Appraising descriptive and analytic findings of large cohort studies, *CMAJ* July 29, 2019 191 (30) E828-E829; [DOI: 10.1503/cmaj.190882](https://doi.org/10.1503/cmaj.190882)

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