

Unnecessary blood tests common before low-risk surgeries, study says

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Depending on which hospital you go to for your low-risk surgical procedure, you may be 2.4 times more or less likely to be sent for unnecessary blood tests. This is among the findings of a study conducted by researchers from the Institute of Clinical Evaluative Sciences (ICES) and the Women's College Hospital Institute for Health Systems Solutions and Virtual Care (WIHV).

Published today in the journal *Anesthesiology*, the study reviewed anonymized patient records for nearly 1 million Ontario adults who underwent ophthalmologic surgery or low-risk surgical procedures in the five years between 2008 and 2013. Researchers found that overall, preoperative laboratory tests (including complete [blood](#) count, blood clotting tests or basic metabolic panel) were conducted prior to roughly 30 per cent of these procedures. In addition, they found high variability in rates amongst the 119 institutions studied.

Previous studies have shown that for [patients](#) undergoing low-risk surgery, routine preoperative blood tests do not improve outcomes and can lead to surgical delays and negative impacts on patient care. As part of the Choosing Wisely campaign, multiple Canadian and American specialty societies, including the Canadian and American Society of Anesthesiologists, the American Society for Clinical Pathology and the American and Canadian surgical societies have each published recommendations stating that unless a patient has clinical indications, preoperative lab tests should be avoided prior to low-risk surgeries.

"Unnecessary but frequently-used health care interventions like preoperative lab tests represent a significant cost to our already overburdened health care system and can even expose patients to harm," says the study's lead author Dr. Sacha Bhatia, who is a scientist at ICES, staff cardiologist at Women's College Hospital and Director of WIHV. "For example, these tests can lead to surgical delays and more follow-up tests and interventions, which can cause a lot of stress and anxiety for patients and their families. This is despite evidence that these tests do not support better patient care or health outcomes."

Among the study's key findings:

- The most common preoperative blood tests were the basic metabolic panel and complete blood count, each performed before 25 per cent of procedures. Additionally, blood clotting tests were conducted prior to 5 per cent of the procedures.
- Throughout the five-year study period (2008-2013), the rate of preoperative laboratory tests overall decreased from just over 30 per cent to just under 28 per cent.
- There was wide institutional variability in the use of these tests. In the case of complete blood count tests, one institution showed a rate of zero per cent whereas another showed a rate of 98 per cent.
- Patients age 85 or older were three times more likely to undergo these tests compared to 18-25 year olds.
- An individual patient was 2.4 times more likely to undergo preoperative blood tests at one randomly chosen institution with higher testing rates, compared to if they had received the same procedure at an institution showing lower testing rates.

The researchers note that they did not have access to more detailed patient data that might have indicated when a patient showed new symptoms to warrant blood tests in the lead up to surgical procedures.

However, says Bhatia, "It's difficult to explain why there were such dramatic differences in testing rates, where you would see some institutions requesting complete [blood count](#) tests in nearly every case, while others requested none. Even when we adjusted for institutional and patient factors, the location of the procedure was still the strongest driver behind testing rates."

This study is the first to examine preoperative lab rates for a broad range of low-risk procedures in multiple institutions across a large patient population and district, and over a period of multiple years. "We see wide variability between hospitals in the rates of unnecessary lab tests for patients undergoing low-risk surgical procedures," says Bhatia. "These findings should help guide more targeted approaches to interventions that can reduce this significant burden on our [health care](#) system while we look to improve patient care."

More information: "Preoperative Laboratory Investigations: Rates and Variability Prior to Low-risk Surgical Procedures" was published on January 28th, 2016 in the journal *Anesthesiology* .

Provided by Women's College Hospital

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