

# Survival after general anesthesia vastly improved: study

September 21 2012, by Steven Reinberg, Healthday Reporter

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However, the trend is seen mostly in developed countries, researcher says.

(HealthDay)—The number of people who survive surgery when general anesthesia is used has improved dramatically over the past 50 years, Canadian researchers report.

The improvement was noted worldwide, with most of the increases in [survival](#) seen in [developed countries](#), the researchers added. Overall, there was a 90 percent drop in such deaths since before the 1970s.

"Anesthesia safety continues to improve, and we should continue to find ways to make it even safer," said lead [researcher](#) Dr. Daniel Bainbridge, from the department of anesthesia and perioperative medicine at the University of Western Ontario.

"We have done a good job to reduce risk of anesthesia," he said.

"However, it is similar to the [airline industry](#) in that passengers tend to be very concerned about dying while flying, likewise they also are concerned about dying [while] under anesthesia, so the question is whether we can reduce the rates even further."

The rate of improved safety, however, was lower in [developing countries](#), Bainbridge said.

"More attention needs to be paid to taking care of those in less well-off countries, and these efforts are already under way but should be supported to a greater degree," he added.

The report was published in the Sept. 22 issue of *The [Lancet](#)*.

For the study, Bainbridge's team culled data from 87 studies spanning more than 60 years on anesthesia deaths. Specifically, they focused on how people fared in the two days after surgery.

The studies they analyzed contained data on more than 21.4 million cases in countries around the world, the researchers noted.

This type of study is called a meta-analysis, where researchers try to find common connections between a variety of different studies. The main problem with this kind of study is bias in selecting studies for analysis and forcing different data together that were not intended to be combined.

In their analysis, Bainbridge's group found that although more high-risk and complicated surgeries are being done now than before, the odds of dying after being given a general anesthetic has dropped about 90 percent.

Before the 1970s, about 357 of every 1 million patients died, but from the 1990s to 2000s that number dropped to 34 patients per 1 million.

Over the same period, the risk of dying in the first 48 hours after surgery dropped about 88 percent, from just over 10,000 per million before the 1970s to nearly 1,200 per million in the 1990s-2000s, the investigators found.

Although these advances were seen all over the world, two to three times more patients survive surgery in developed countries than do in developing countries, Bainbridge said.

There are several reasons for this dramatic decline, one expert said.

"One obvious factor is advances in medicine in a culture of safety," said Dr. Michael Avidan, a professor of anesthesiology and surgery and division chief of cardiothoracic anesthesia and cardiothoracic intensive care at Washington University School of Medicine in St. Louis. He co-authored an accompanying journal editorial.

"We have safer drugs, we have better monitoring, we have better training, we have better safety drills," Avidan said. "Many of these advances are fairly low-tech and have immediate applicability throughout the world."

These include surgery checklists, and more practice and training, as well as better communication among members of the surgical team, he noted.

Most deaths during surgery or shortly after are not the result of just one failing, he added.

Avidan also noted that while deaths after surgery have declined, sometimes these are only "deaths deferred," as the patient is sometimes

so sick or frail that he or she is likely to die within a month or two after surgery.

Another paper in the same journal issue showed the standard practice of changing intravenous catheters placed after [surgery](#) every three days may be unnecessary.

The researchers say changing them only when needed would prevent millions of painful procedures and dramatically cut material and labor costs.

"Of the 200 million catheters estimated to be inserted each year in the U.S.A. alone, if even 15 percent are needed for more than three days, then a change to clinically required replacement would prevent up to 6 million unnecessary intravenous catheter insertions, and would save about 2 million hours of staff time, and up to US\$60 million in health costs each year for that country alone," lead researcher Claire Rickard, from Griffith University in Australia, said in a journal news release.

**More information:** For more on surgery safety, visit the [U.S. Agency for Healthcare Research and Quality](#).

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Citation: Survival after general anesthesia vastly improved: study (2012, September 21) retrieved 4 April 2024 from <https://medicalxpress.com/news/2012-09-survival-anesthesia-vastly.html>

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