Health Quality & Safety Commission
Te Tāhū Hauora

Surgery and risk in New Zealand

Te pōkanga me te tūponotanga i Aotearoa

This report summarises information about surgery in New Zealand in 2024, including the risks associated with having surgery. It covers planned surgery and emergency surgery.

In 2024, there were:

5,289,900
people living in New Zealand

221,500
surgeries

99.4%
of people were alive 30 days after their surgery*

*Worldwide, the success of a type of surgery is measured by the number of people still alive 30 days after having that surgery. In this report, we count all deaths within 30 days of a surgery. These deaths may or may not be directly related to the surgery.

A person's chance of surviving their surgery is affected by factors such as the urgency and complexity of their surgery, and how unwell they are. Other factors include their age, sex and any underlying medical conditions.

If you are unwell, talk to your doctor early. There are benefits and risks to every surgery. Your doctor will help you decide if surgery is right for you.

New Zealand Government
Te Kāwanatanga o Aotearoa

Planned surgery is safer than emergency surgery

Planned surgery

Planned surgery can improve a person's quality of life or stop their medical condition from becoming worse.

The chance of dying after planned surgery is very low.

In 2024, there were:

153,600 planned surgeries

300 deaths after planned surgery

99.8% of people alive 30 days after their surgery

Emergency surgery

Emergency surgery is higher risk because patients may be very unwell and/or the surgery is urgently needed to prevent serious harm.

Emergency surgery is less common than planned surgery; in 2024, fewer than one in three surgeries was for an emergency.

In 2024, there were:

67,800 emergency surgeries

1,082 deaths after emergency surgery

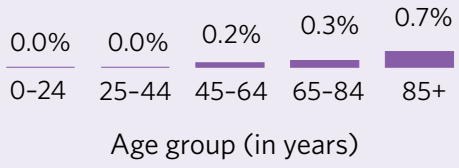
98.4% of people alive 30 days after their surgery

The risk of dying after surgery is higher for older people

Planned surgery

The risk of dying after planned surgery is very low. Planned surgery is slightly safer for younger people.

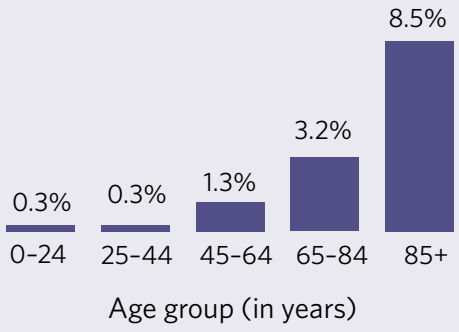
Percentage of people who died within 30 days of their planned surgery



Emergency surgery

Emergency surgery is higher risk because patients may be very unwell and/or the surgery is urgently needed to prevent serious harm. Emergency surgery is safer for younger people.

Percentage of people who died within 30 days of their emergency surgery



Males have a slightly higher risk of dying after surgery

This might be explained by differences in the types of surgery and reasons for why the surgery is needed, such as males being more likely to have serious injuries.

Planned surgery

Percentage of people who died within 30 days of their planned surgery:

Females: **0.1%**

Males: **0.2%**

Emergency surgery

Percentage of people who died within 30 days of their emergency surgery:

Females: **1.6%**

Males: **2.0%**

Māori and Pacific peoples had higher rates of death after emergency surgery than Asian and European/Other ethnicities.

Māori also had higher rates of death after planned surgery than European/Other ethnicities.

There is a combination of reasons for inequities. These reasons include less access to best-practice care, greater likelihood of living in socioeconomic deprived areas and greater likelihood of having multiple comorbidities.[1]

Planned surgery

Percentage of people who died within 30 days of their planned surgery:

Māori	0.2%
Pacific peoples	0.2%
Asian	0.1%
European/Other ethnicities	0.1%

Emergency surgery

Percentage of people who died within 30 days of their emergency surgery:

Māori	1.5%
Pacific peoples	1.9%
Asian	0.9%
European/Other ethnicities	0.9%

For comparisons by sex and ethnicity, we have accounted for differences in the age distribution for each group. This accounts for the fact some groups have more old or young people than other groups.

[1] The past Perioperative Mortality Review Committee has investigated the ethnic inequities in surgery death rates in its previous reports. See: hqsc.govt.nz/resources/resource-library/summary-of-perioperative-mortality-review-committee-pomrc-reports

Most common planned surgeries, 2020 to 2024

This page shows the most common planned surgeries between 2020 and 2024.

The most common planned surgery was ophthalmic surgery, which is surgery on the eye. Between 2020 and 2024 there was an average of 21,583 eye lens surgeries per year. Cataract surgery is performed on older people, whose death could have been due to any reason, not just directly related to the surgery.

Ophthalmic (eye) surgery

Example: Cataract surgery

Average per year:

21,583 surgeries

0.1% | **30** people

died within 30 days

Obstetric surgery for pregnancy and childbirth

Example: Planned caesarean section and procedures immediately after delivery

Average per year:

17,443 surgeries

Less than **0.1%** | Less than 1 person per year

died within 30 days

Surgery on the uterus

Example: Removing tissue from the uterus or removing the whole uterus (hysterectomy)

Average per year:

7,301 surgeries

Less than **0.1%** | **3** people

died within 30 days

Knee surgery

Example: Knee scopes and removing the meniscus

Average per year:

5,969 surgeries

0.1% | **6** people

died within 30 days

Surgery on the pelvis, hip or thigh bone

Example: Hip replacement

Average per year:

5,752 surgeries

0.3% | **19** people

died within 30 days

Hernia repair

Example: Inguinal or umbilical hernia repair

Average per year:

5,507 surgeries

Less than **0.1%** | **2** people

died within 30 days

Surgery on the ears, nose and/or throat

Example: Removing tonsils (tonsillectomy) and/or adenoids

Average per year:

5,058 surgeries

Less than **0.1%** | Less than 1 person per year

died within 30 days

Breast surgery

Example: Mastectomy, or other excision procedures

Average per year:

4,546 surgeries

Less than **0.1%** | **2** people

died within 30 days

Surgery on the hand or finger

Example: Finger joint replacement

Average per year:

3,337 surgeries

Less than **0.1%** | **1** person

died within 30 days

Planned surgeries with the highest risk, 2020 to 2024

This page shows the planned surgeries with the highest death rates between 2020 and 2024.

Some surgeries have higher rates of death than others. The planned surgery with the highest risk between 2020 and 2024, was surgery on the aorta. Between 2020 and 2024, there was an average of 117 aortic surgeries per year, and an average of five people (4.6 percent) died within 30 days of this surgery. The risk of dying after planned aortic surgery is much lower than the risk of dying if the surgery is not done.

Aortic surgery

Example: Repairing or replacing the aorta. The aorta carries blood from your heart to the rest of your body

Average per year:

117 surgeries

4.6% | **5** people died within 30 days

Vascular surgery or aneurysm repair

Example: Treating an abnormal swelling of an artery (aneurysm) in the neck and/or limbs. This category excludes aortic surgery

Average per year:

141 surgeries

3.7% | **5** people died within 30 days

Pancreatic surgery

Example: Removing part or the whole of the pancreas

Average per year:

169 surgeries

2.4% | **4** people died within 30 days

Heart surgery

Example: Repairing or replacing a heart valve. This category does not include coronary artery bypass graft

Average per year:

662 surgeries

2.1% | **14** people died within 30 days

Vascular bypass surgery

Example: Bypass surgery of arteries in the legs

Average per year:

204 surgeries

1.9% | **4** people died within 30 days

Chest surgery

Example: Repairing a hernia in the diaphragm

Average per year:

178 surgeries

1.8% | **3** people died within 30 days

Neurosurgery for brain tumours

Example: Opening the skull to remove brain tumours

Average per year:

742 surgeries

1.7% | **13** people died within 30 days

Surgery on the (tissue) sac that surrounds the heart

Example: Draining fluid from the sac around the heart (pericardium)

Average per year:

129 surgeries

1.7% | **2** people died within 30 days

Coronary artery bypass graft

Example: Placing of a graft to bypass a blocked artery so that blood can get to the heart muscle

Average per year:

786 surgeries

1.7% | **13** people died within 30 days

Most common emergency surgeries, 2020 to 2024

This page shows the most common emergency surgeries between 2020 and 2024.

Emergency surgery is higher risk because patients may be very unwell and/or the surgery is urgently needed to prevent serious harm. The most common emergency surgery was for a fractured pelvis, hip or thigh bone. Between 2020 and 2024, there was an average of 6,824 pelvis, hip or thigh bone surgeries per year. An average of 350 people per year (5.1 percent) died within 30 days of this type of surgery.

Surgery for fractured pelvis, hip or thigh bone

Example: Repairing a fractured hip or thigh bone

Average per year:

6,824 surgeries

5.1% | **348** people died within 30 days

Surgery for appendicitis

Example: Removing an appendix

Average per year:

4,741 surgeries

Less than **0.1%** | **2** people died within 30 days

Generalised orthopaedics

Examples: Removing infection, external fixation, repairing muscles and tendons

Average per year:

4,011 surgeries

1.5% | **60** people died within 30 days

Gall bladder and biliary tract surgery

Example: Removing a gallbladder (cholecystectomy)

Average per year:

3,844 surgeries

0.3% | **12** people died within 30 days

Ankle and foot surgery

Example: Surgery for a broken ankle or foot

Average per year:

3,663 surgeries

0.5% | **17** people died within 30 days

Surgery on the anus and rectum

Example: Treating an infection (abscess) of the rectum

Average per year:

2,872 surgeries

0.2% | **4** people died within 30 days

Obstetric surgery for pregnancy and childbirth

Example: Emergency caesarean section, and other procedures immediately after delivery

Average per year:

2,627 surgeries

Less than **0.1%** | **1** person died within 30 days

Surgery on the hand or finger

Example: Repairing a fracture of the hand

Average per year:

2,403 surgeries

0.1% | **3** people died within 30 days

Surgery for a fractured forearm

Example: Repairing and/or manipulating a fractured forearm

Average per year:

2,273 surgeries

0.1% | **3** people died within 30 days

Emergency surgeries with the highest risk, 2020 to 2024

This page shows the emergency surgeries with the highest death rates between 2020 and 2024.

Emergency surgery is higher risk because patients may be very unwell and/or the surgery is urgently needed to prevent serious harm. The emergency surgery with the highest risk was laparotomy. Between 2020 and 2024, there was an average of 179 laparotomies per year. An average of 32 people per year (18.1 percent) died within 30 days of their surgery.

Laparotomy

Example: Major surgery on the abdominal organs after a serious injury (trauma) or an infection

Average per year:

179 surgeries

18.1% | **32** people died within 30 days

Chest surgery

Example: Repairing an injury to chest wall

Average per year:

115 surgeries

10.9% | **13** people died within 30 days

Neurosurgery for brain tumours

Example: Opening the skull to remove brain tumours

Average per year:

1,086 surgeries

8.2% | **89** people died within 30 days

Surgery on the small bowel

Example: Releasing adhesions, or relieving a blockage

Average per year:

876 surgeries

5.9% | **52** people died within 30 days

Colon surgery

Example: Removing part of the colon

Average per year:

1,241 surgeries

5.8% | **72** people died within 30 days

Heart surgery

Example: Replacing a heart valve. Does not include coronary artery bypass graft

Average per year:

186 surgeries

5.4% | **10** people died within 30 days

Blood vessel surgery

Example: Removing a blood clot from a blood vessel or artery

Average per year:

308 surgeries

5.3% | **16** people died within 30 days

Stomach surgery

Example: Removing part of the stomach for uncontrolled bleeding from ulcers or cancer

Average per year:

220 surgeries

5.2% | **11** people died within 30 days

Surgery for fractured pelvis, hip or thigh bone

Example: Repairing a fractured hip or thigh bone

Average per year:

6,824 surgeries

5.1% | **348** people died within 30 days

This report has been produced by the Health Quality & Safety Commission Te Tāhū Hauora (the Commission).

The Commission receives advice from National Mortality Review Committee He Mutunga Kore on focus areas for avoidable mortality, including perioperative mortality.

The Committee wishes to acknowledge the feedback received from the Perioperative Mortality Review Group (a joint Commission and Health NZ group) in preparing this report.

About the Committee: hqsc.govt.nz/our-work/national-review-of-avoidable-deaths/national-mortality-review-committee

Past preoperative mortality review reports by the Commission can be found here: hqsc.govt.nz/resources/resource-library/summary-of-perioperative-mortality-review-committee-pomrc-reports

Useful resources | Ngā rauemi papai

Healthline, for general health advice:
healthy.org.nz
Free call: 0800 611 116

Let's plan for your next health care visit:
hqsc.govt.nz/resources/resource-library/lets-plan-for-your-next-health-care-visit

About anaesthesia:
anzca.edu.au/patient-information/anaesthesia-information-for-patients-and-carers

Preparing for surgery:
healthify.nz/health-a-z/s/surgery-preparing-for

Let's plan to leave hospital:
hqsc.govt.nz/resources/resource-library/lets-plan-to-leave-hospital

How we calculated the data | Te tātari raraunga

In this report, 'surgeries' are hospital admissions that involved a surgery performed by a surgeon in a theatre. Only publicly funded hospital admissions and the most complex surgery in a hospital stay are included.

The riskiest surgeries only show surgeries that occurred more than 500 times between 2020 and 2024.[2]

Because surgery is safer for younger people, we used 'age standardisation' to adjust for differences in the age distribution of different groups. For comparing males with females, we standardised with the age distribution of surgeries (all ethnicities) in 2024.

For comparing different ethnicities, we used the age distribution of all surgeries for Māori in 2024.[3] In this report, we have used 'prioritised ethnicity,' which is commonly used by the health sector. Prioritised ethnicity assigns people to only one ethnic group.[4] This method gives Māori highest priority, followed by Pacific peoples, Asian, other ethnic groups and then European. In practice, if someone identifies as both Māori and Pacific, they will be counted in the Māori group. If someone identifies as both Pacific and European, they will be counted in the Pacific group.

As a result, a person's prioritised ethnicity may not represent their preferred ethnic identity.

[2] We followed the methodology of Gurney JK, McLeod M, Stanley J, et al. 2020. Postoperative mortality in New Zealand following general anaesthetic: demographic patterns and temporal trends. *BMJ Open* 10: e036451. DOI: 10.1136/bmjopen-2019-036451. We used a modified version of surgery groupings from Campbell D, Boyle L, Soakell-Ho M, et al. 2019. National risk prediction model for perioperative mortality in non-cardiac surgery. *British Journal of Surgery* 106: 1549–57. DOI: 10.1002/bjs.11232

[3] Gurney JK, McLeod M, Stanley J, et al. 2022. Regional variation in post-operative mortality in New Zealand. *ANZ Journal of Surgery* 92: 1015–25. DOI: 10.1111/ans.17510.

[4] Ministry of Health. 2017. HISO 10001:2017 Ethnicity Data Protocols. Wellington: Ministry of Health. URL: healthnz.govt.nz/health-professionals/guidance-standards/topic/data-and-standards/health-information-standards/approved-health-information-standards/health-identity-standards (accessed 5 June 2026).

Talk to your health professional for advice that is specific to you.
For more general advice, phone Healthline: 0800 611 116.

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