

## Most lower-limb amputations in Canada caused by diabetes, report finds

*Hospitalization for diabetic amputation costs \$47,000, says CIHI*

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Diabetes accounts for about two-thirds of lower limb amputations in Canada, according to [a report](#) released this week by the Canadian Institute for Health Information.

The CIHI drew on 2020-2023 nationwide data to develop conclusions and recommendations about diabetes care, focusing on lower limb amputations such as the leg, foot or toes.

Diabetes-associated lower limb amputations are largely preventable, and they have high health system and societal costs, says the CIHI.

However, its report notes that in each of the years studied there were about 7,720 hospitalizations for lower limb amputations associated with diabetes, of which 3,080 involved a leg amputation. There were also 23,500 diabetes-associated hospitalizations for treatment of ulcers, gangrene or infections.

### **Big health-care price tag for diabetic amputations**

The CIHI estimates these hospitalizations account for approximately \$750 million in health-care costs annually. “However,” states the report, “this reflects a fraction of the total system costs associated with diabetic foot ulcers and amputations.”

The data collected shows patients who had a leg amputation spent about 19 days in hospital. They often require multiple procedures and have a high risk of readmission, as well as “in-hospital death”. The costs for these hospitalizations come with a high price tag, according to the report: about \$47,000 per stay.

Meanwhile, people hospitalized for an ulcer or amputation regularly undergo repeat hospitalizations related to lower limb complications. Of the 31,220 hospitalizations annually for diabetes-associated lower limb complications, about 19,100 were for unique patients. The remaining 12,120 were repeat visits within the year.

The analysis shows that 19 per cent of patients who received a leg amputation were readmitted for another amputation or for treatment for ulcers, gangrene and infections (UGI) within 12 months.

And as many as eight per cent of patients died in hospital within 30 days of a hospitalization for a leg amputation. This is more than four times the rate of 30-day in-hospital mortality following a major surgery. The 30-day in-hospital mortality rates for ankle, foot or toe amputations and for hospitalizations for UGI are 3 per cent and 8 per cent respectively.



Report finds males with diabetes were 2 to 3 times more likely than females to have an amputation or to be hospitalized with a lower limb complication. Photo by Akiromaru /Getty Images/iStockphoto



## Inequities in amputation rates across Canada

The study looked for inequities among sufferers and their treatment across the country. Among the key findings:

- About 43 per cent of amputations occurred among those age 40 to 64.
- Males with diabetes were two to three times more likely than females to have an amputation or to be hospitalized with a lower limb complication.
- Lower limb complications were also more common for those living in neighbourhoods with lower income, lower high school completion and higher social deprivation, as well as in rural and remote communities.

As neighbourhood income levels increased, amputation rates decreased for both males and females. Males living in the lowest-income neighbourhoods had very high amputation rates. At 24 per 100,000, the age-standardized rate of leg amputations for males living in the lowest-income neighbourhoods is 8 times higher than the rate for females in the highest-income neighbourhoods (three per 100,000).

The rates of leg amputation ranged from a low of seven per 100,000 in easily accessible major urban centres to a high of 49 per 100,000 in very remote communities. Across Canada, more than three-quarters (77 per cent) of the total population live in easily accessible urban areas, and about two per cent live in either remote or very remote areas.

The study used the Index of Remoteness, which includes travel cost estimates. Fewer health providers practicing in rural and remote communities contributes to higher travel costs and longer wait times to access services.

For diabetes foot care, says the CIHI, providers who deliver critical preventive services, such as chiropodists, podiatrists, foot care nurses and vascular surgeons are concentrated in large urban centres.

## Moving to focus on diabetes prevention

Preventing diabetic complications such as amputations must start with reducing the risk of developing type 2 diabetes and ensuring that all forms of diabetes are detected promptly, says the CIHI.

Primary care is important for people to regularly access diabetes prevention interventions, including programs for smoking cessation, cardiovascular risk reduction, physical activity, weight loss and healthy behaviour interventions. Most screenings for type 2 diabetes also take place in primary care. Screening is recommended every three years starting at age 40, or earlier if the patient is at high risk, states the report.

About 3.7 million people (9.4 per cent) had been diagnosed with diabetes in Canada as of 2020–2021, and at least 2 per cent of adults are living with undiagnosed diabetes, according to the [Public Health Agency of Canada](#). The overall number of people living with diabetes is growing over time due to an aging population and increasing incidence.

For those living with diabetes, the lifetime risk of developing a foot ulcer is about 15 per cent to 25 per cent, cites the CIHI. That means “roughly 550,000 to 920,000 Canadians currently living with diabetes are predicted to experience some degree of foot complication, putting them in need of specialized services and at greater risk of a lower limb amputation if their care needs are not met.”

Patients with lower limb amputations may experience loss of function, reduced quality of life, depression and a high risk of premature death. However, says the CIHI, it is widely cited that up to 85 per cent of leg amputations are preventable.

The CIHI is urging health authorities across the country to use their findings to aim at preventing amputations and other diabetes complications. “Health systems can use this information to support strategies that improve access to primary care and early intervention for patients at higher risk of diabetes complications.”

Original National Post Article can be viewed at:

<https://nationalpost.com/news/price-tag-of-hospitalization-in-canada-for-diabetic-amputation-is-47000-report-finds>

Full CIHI Report can be viewed at: <https://www.cihi.ca/en/equity-in-diabetes-care-a-focus-on-lower-limb-amputation>