

Supplemental Table SI - Diagnosis Codes Used to Identify Peripheral Artery Disease.

Peripheral Artery Disease – ICD-10-CA Codes

- I70.0 - Atherosclerosis of aorta
- I70.2 - Atherosclerosis of arteries of extremities
- I70.20 - Atherosclerosis of arteries of extremities without gangrene
- I70.21 - Atherosclerosis of arteries of extremities with gangrene
- I70.8 - Atherosclerosis of other arteries
- I70.9 - Generalized and unspecified atherosclerosis
- I73.9 - Peripheral vascular disease, unspecified (includes intermittent claudication)
- I74.0 - Embolism and thrombosis of abdominal aorta
- I74.3 - Embolism and thrombosis of arteries of lower extremities
- I74.4 - Embolism and thrombosis of arteries of extremities, unspecified (Peripheral arterial embolism)
- I74.5 - Embolism and thrombosis of iliac artery
- I74.8 - Embolism and thrombosis of other arteries
- I74.9 - Embolism and thrombosis of unspecified artery
- I79.2 Peripheral angiopathy in diseases classified elsewhere
- E10.50x - Type 1 diabetes mellitus with peripheral angiopathy
- E10.51x - Type 1 diabetes mellitus with peripheral angiopathy with gangrene
- E10.70x - Type 1 diabetes mellitus with peripheral angiopathy foot ulcer (angiopathic) (neuropathic)
- E10.71x - Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
- E11.50x - Type 2 diabetes mellitus with peripheral angiopathy
- E11.51x - Type 2 diabetes mellitus with peripheral angiopathy with gangrene
- E11.70x - Type 2 diabetes mellitus with foot ulcer (angiopathic)(neuropathic)
- E11.71x - Type 2 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
- E13.50x – Other specified diabetes mellitus with peripheral angiopathy
- E13.51x - Other specified diabetes mellitus with peripheral angiopathy with gangrene
- E13.70x - Other specified diabetes mellitus with foot ulcer (angiopathic) (neuropathic)
- E13.71x - Other specified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
- E14.50x - Unspecified diabetes mellitus with peripheral angiopathy
- E14.51x - Unspecified diabetes mellitus with peripheral angiopathy with gangrene
- E14.70x - Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic)
- E14.71x - Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene

^a ICD-10-CA, *International Statistical Classification of Diseases, Tenth Revision, Canadian Version.*

Supplemental Table S2 - Most Responsible Diagnosis Codes Used to Exclude Patients with Amputation Related to Trauma/Injury, Limb Malignancy or Other Limb Complications.

Malignancy – ICD-10-CA Codes ^a

- C40.2 Malignant neoplasm of long bones of lower limb
- C40.3 Malignant neoplasm short bones of lower limb
- C41.8 Overlapping malignant lesion of bone and articular cartilage
- C41.9 Malignant neoplasm bone and articular cartilage, unspecified
- C43.7 Malignant melanoma of lower limb, including hip
- C47.2 Malignant neoplasm of peripheral nerves of lower limb, including hip
- C49.2 Malignant neoplasm of connective and soft tissue of lower limb, including hip
- C76.5 Malignant neoplasm of lower limb
- C79.5 Secondary malignant neoplasm of bone and bone marrow
- C90.0 Multiple myeloma
- C90.20 Plasmacytoma of bone
- D16.2 Benign neoplasm of long bones of lower limb
- D16.3 Benign neoplasm of short bones of lower limb
- D21.2 Other benign neoplasm of connective and other soft tissue of lower limb, including hip
- C44.7 Malignant neoplasm skin of lower limb, including hip
- C46.^ Kaposi's sarcoma
- C47.^ Malignant neoplasm of peripheral nerves and autonomic nervous system
- D36.1^ Benign neoplasm of peripheral nerves and autonomic nervous system

Trauma/Injury – ICD-10-CA Codes ^a

- S70-79, S80-89, S90-99: lower extremity trauma
- T01.3^ Open wounds of multiple regions of lower limb(s)
- T02.3^ Fractures involving multiple regions of one lower limb
- T02.5^ Fractures involving multiple regions of both lower limbs
- T04.3-T04.9 Crush injury including lower limbs
- T05.3-T05.9 Traumatic amputation including foot or lower limb
- T12.0 Fracture of lower limb, level unspecified, closed
- T12.00 Fracture of lower limb, level unspecified, closed
- T13.0 Superficial injury of lower limb, level unspecified
- T13.1 Open wound of lower limb, level unspecified
- T13.2 Dislocation, sprain and strain of unspecified joint and ligament of lower limb, level unspecified
- T13.3 Injury of unspecified nerve of lower limb, level unspecified
- T13.4 Injury of unspecified blood vessel of lower limb, level unspecified
- T13.5 Injury of unspecified muscle and tendon of lower limb, level unspecified
- T13.6 Traumatic amputation of lower limb, level unspecified
- T13.8 Other specified injuries of lower limb, level unspecified
- T13.9 Unspecified injury of lower limb, level unspecified
- T24.0 Burn of unspecified degree of hip and lower limb, except ankle and foot
- T24.1 Burn of first degree of hip and lower limb, except ankle and foot
- T24.2 Burn of second degree of hip and lower limb, except ankle and foot
- T24.3 Burn of third degree of hip and lower limb, except ankle and foot
- T24.4 Corrosion of unspecified degree of hip and lower limb, except ankle and foot
- T24.5 Corrosion of first degree of hip and lower limb, except ankle and foot
- T24.6 Corrosion of second degree of hip and lower limb, except ankle and foot
- T24.7 Corrosion of third degree of hip and lower limb, except ankle and foot
- T25.0 Burn of unspecified degree of ankle and foot
- T25.1 Burn of first degree of ankle and foot
- T25.2 Burn of second degree of ankle and foot
- T25.3 Burn of third degree of ankle and foot

- T25.4 Corrosion of unspecified degree of ankle and foot
- T25.6 Corrosion of second degree of ankle and foot
- T25.7 Corrosion of third degree of ankle and foot
- T33.^ Frostbite
- T34.^ Frostbite with necrosis
- T35.^ Frostbite unpspecified
- T79.6 Traumatic ischaemia of muscle
- M12.55 Traumatic arthropathy, pelvic region and thigh
- M12.56 Traumatic arthropathy, lower leg
- M12.57 Traumatic arthropathy, ankle and foot
- M12.58 Traumatic arthropathy, other site
- M12.59 Traumatic arthropathy, unspecified site

Other – ICD-10-CA Codes ^a

- T84.54 Infection and inflammatory reaction due to knee prosthesis
- T84.^ Complications of internal orthopaedic prosthetic devices, implants and grafts
- T84.^ Complications of internal orthopaedic prosthetic devices, implants and grafts (hip prosthesis, knee prosthesis, internal fixation device of bones of limb, Infection and inflammatory reaction due to internal joint prosthesis, Infection and inflammatory reaction due to internal fixation device [any site])
- L08.0 Pyoderma
- L51.2 Toxic epidermal necrolysis
- L88.^ Pyoderma gangrenosum
- L89.^ 'decubitus ulcer'
- L97.^ Lower limb ulcer not otherwise classified
- M00.^ Pyogenic arthritis
- M01.^ Direct infections of joint in infectious and parasitic diseases classified elsewhere
- M84.^ Disorders of continuity of bone (malunion, nonunion, delayed union) of fracture
- M89.0^ - Complex regional pain syndrome
- M96.6^ Fracture of bone following insertion of orthopaedic implant, joint prosthesis, or bone plate
- Q27.31 Peripheral arteriovenous malformation of lower limb
- Q27.38 Peripheral arteriovenous malformation of other site
- Q27.8 Other specified congenital malformations of peripheral vascular system
- Q27.9 Congenital malformation of peripheral vascular system, unspecified - Anomaly of artery or vein not otherwise specified
- Q65.^ Congenital deformities of hip
- Q66.^ Congenital deformities of feet
- Q68.2 Congenital deformity of knee
- Q68.3 Congenital bowing of femur
- Q68.4 Congenital bowing of tibia and fibula
- Q68.5 Congenital bowing of long bones of leg, unspecified
- I80.^ Phlebitis and thrombophlebitis
- I83.^ Venous ulcer
- I87.0^ Postthrombotic syndrome
- I87.1 Compression of vein
- I87.2 Venous insufficiency (chronic)(peripheral)
- I89.0 Lymphoedema, not elsewhere classified

^a ICD-10-CA, *International Statistical Classification of Diseases, Tenth Revision, Canadian Version*

Supplemental Table S3 – Canadian Classification of Health Interventions (CCI) Codes for Lower Extremity Revascularization and Amputation

Lower Extremity Revascularization and Amputation Codes

- **Open Surgery:** 1KA57LA, 1KA76MZ, 1KE57LA, 1KE76MZ, 1KG57LA, 1KG76MI, 1KT57LA, 1KT76MZ, 1JM76MI
 - **Endovascular – angioplasty or stenting:** 1KA50GQ, 1KA57GQ, 1KE35, 1KE50, 1KE57GQ, 1KG35, 1KG50, 1KG57GQ, 1KT50, 1KT57GQ
 - **Major amputation:** 1VC93, 1VG93, 1VQ93
 - **Minor amputation:** 1WA93, 1WE93, 1WI93, 1WJ93, 1WK93, 1WL93, 1WM93, 1WN93
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Details of Costing Methodology

Costs within 1 year prior to amputation were estimated from the perspective of the Ontario Ministry of Health. Costs were estimated at the person-level through a combination of per-unit costing (e.g. sum of physician service fees) and top-down allocation of budgets (e.g. global hospital budget). This costing approach has been previously described and is frequently employed using administrative health databases for the province of Ontario.^{1,2,3}

The costs considered were those attributable to acute hospital care, emergency department visits, inpatient rehabilitation care, inpatient complex and continuing care, physician services both in and out of hospital, outpatient nursing and allied health care (e.g. for wound dressings, administration of intravenous medication, occupational therapy home assessment, personal support worker for some activities of daily living), outpatient medications for patients at least 65 years old, outpatient procedures and testing (e.g. same day surgery, angiogram, ultrasound, blood test), limited non-physician reimbursements (e.g. physiotherapy, podiatry) and specified assistive devices (e.g. walker, home oxygen, hearing devices).

Hospital costs were estimated using the Resource Intensity Weight (RIW) method. A given hospital encounter is assigned an RIW valued based on the most responsible diagnosis, patient age, comorbidity burden, interventions received, and length of stay. For a given visit type and fiscal year (e.g. inpatient admission in 2016), a cost-per-weighted-case (CPWC) is derived from the allocation of the global hospital budget (global budget in 2016 divided by sum of RIWs for all patient sin 2016). The estimated cost of a specific patient's hospitalization is the product of their RIW and corresponding CPWC. The cost of ED visits and same day surgeries were estimated according to the RIW approach. Inpatient rehabilitation and complex continuing care costs were estimated according to a similar top-down approach of allocating of global institutional budgets. Individual physician services, outpatient nursing and allied health services, medications and testing outside the hospital setting are captured as unit costs. Costs across years were converted to 2017 Canadian dollars using the 2017 consumer price index for health care in Ontario⁴.

1. Wodchis WP, Bushmeneva K, Nikitovic M, McKillop I. Guidelines on Person-Level Costing Using Administrative Databases in Ontario. Working Paper Series. Vol 1. Toronto: Health System Performance Research Network; 2013.
2. Pincus D, Wasserstein D, Nathens AB, Bai YQ, Redelmeier DA, Wodchis WP. Direct medical costs of motorcycle crashes in Ontario. *CMAJ*. 2017;189(46):E1410-E1415.
3. Tanuseputro P, Wodchis WP, Fowler R, et al. The health care cost of dying: a population-based retrospective cohort study of the last year of life in Ontario, Canada. *PLoS One*. 2015;10(3):e0121759. Published 2015 Mar 26. doi:10.1371/journal.pone.0121759
4. Statistics Canada. Table 18-10-0005-01 Consumer Price Index, annual average, not seasonally adjusted. Available at: <https://www.statcan.gc.ca/eng/start>. Accessed August 1, 2019.