

Appendix 1. Data variables, sources and codes

Data Variables	Data Sources	Codes/Details
<i>Study cohort</i>		
<i>Hip fracture diagnosis</i>	Discharge Abstracts Database (DAD)	<p>Include:</p> <p>ICD10CA S72.0 Fracture of neck of femur</p> <ul style="list-style-type: none"> • S72.01 Fracture of base of femoral neck (cervicotrochanteric) <ul style="list-style-type: none"> ○ S72.010 (closed) ○ S72.011 (open) • S72.08 Other fracture of femoral neck (includes intracapsular and subcapital fracture of femur) <ul style="list-style-type: none"> ○ S72.080 (closed) ○ S72.081 (open) • S72.09 Unspecified fracture of neck of femur (includes transcervical fracture of femur) <ul style="list-style-type: none"> ○ S72.090 (closed) ○ S72.091 (open) <p>ICD10CA S72.1 Pertrochanteric fracture (includes intertrochanteric, multiple pertrochanteric, and trochanteric fractures)</p> <ul style="list-style-type: none"> • S72.10 Intertrochanteric fracture <ul style="list-style-type: none"> ○ S72.100 Intertrochanteric fracture (closed) ○ S72.101 Intertrochanteric fracture (open) • S72.19 Unspecified trochanteric fracture <ul style="list-style-type: none"> ○ S72.190 Unspecified trochanteric fracture (closed) ○ S72.191 Unspecified trochanteric fracture (open) <p>ICD10CA S72.2 Subtrochanteric fracture</p> <ul style="list-style-type: none"> • S72.200 Subtrochanteric fracture (closed) • S72.201 Subtrochanteric fracture (open) <p>Exclude:</p> <p>ICD10CA M8445 (pathological fractures) ICD10CA M880, M881, M888 (paget's disease)</p>
<i>Surgical repair of unilateral hip fracture</i>	Ontario Health Insurance Plan Claims database (OHIP)	OHIP Fee Codes billed during hospitalization: F100, F096, F101, R440, R439 OR CCI codes on hospital discharge abstract record: 1VA53; 1VA74, 1VA80; 1VC74; or 1VC80
<i>Sociodemographic characteristics</i>		
<i>Age at hospital admission (50+)</i>	Registered Persons Database (RPDB)	AGE

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<i>Geographical location</i>	Registered Persons Database (RPDB) /Postal Code Conversion File (PCCF)	LHIN identifier
<i>Sex</i>	Registered Persons Database (RPDB)	SEX
<i>Marital Status</i>	Discharge Abstracts Database (DAD)	MARSTAT
<i>Living situation</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /Home Care Database (HCD) /Registered Persons Database (RPDB)	Point of origin: home, LTC, retirement home, home with home care, home with no home care, etc.
<i>Rurality</i>		ICES Macro: %getdemo RES URBAN_RURAL_CODE (CMA census metropolitan)
<i>Neighbourhood income quintile</i>	Registered Persons Database (RPDB)	INCQUINT
<i>Baseline health characteristics</i>		
<i>Comorbidities</i>	Discharge Abstracts Database (DAD)	Using HSPRN multimorbidity macro to identify the presence of 18 chronic conditions Compute the count of 18 chronic conditions: AMI, arrhythmia, Asthma, Cancer, CHF, COPD, Coronary Heart Disease, Dementia, Diabetes, Hypertension, Inflammatory bowel disease (IBD), Non-psychotic mood and anxiety disorders, Other mental health conditions, Osteoarthritis, Osteoporosis, Renal disease, Rheumatoid arthritis, Stroke Reference: Mondor L, Maxwell CJ, Bronskill SE, Gruneir A, Wodchis WP. The relative impact of chronic conditions and multimorbidity on health-related quality of life in Ontario long-stay home care clients. Qual Life Res. 2016 Oct;25(10):2619-2632. doi: 10.1007/s11136-016-1281-y. Epub 2016 Apr 6. PMID: 27052421.
<i>Frailty status</i>	Discharge Abstracts Database (DAD)	Using a validated, accumulating deficits frailty index (%getpFI Macro) Reference

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		McIsaac DI, Wong CA, Huang A, Moloo H, van Walraven C. Derivation and Validation of a Generalizable Preoperative Frailty Index Using Population-based Health Administrative Data. <i>Ann Surg.</i> 2019;270(1):102-108. doi:10.1097/SLA.0000000000002769
<i>Prior fall resulting in an emergency department visit or acute care admission</i>	Discharge Abstracts Database (DAD)	ICD10CA diagnosis type: W00, W01, W04-W08
<i>Characteristics of acute episode of care</i>		
<i>Acute length of stay</i>	Discharge Abstracts Database (DAD)	ACUTELOS
<i>Days from hospital admission to surgery</i>	Discharge Abstracts Database (DAD)	To calculate surgery date (defined as date of CCI code) minus acute admission date
<i>Type of surgical intervention</i>	Ontario Health Insurance Plan Claims database (OHIP)	F100 (DHS) F096 (IMNail) + EO48 (rod) F101 (hemi -arthroplasty) R439 (unipolar hip fracture) R440
<i>Post-surgery length of stay</i>	Discharge Abstracts Database (DAD)	To calculate acute discharge date minus surgery date (defined as date of CCI code)
<i>Surgery day of the week</i>	Discharge Abstracts Database (DAD)	To calculate based on surgery date during the acute index admission, then group by day of week (Mon-Tues-Wed-Thurs-Fri-Sat-Sun)
<i>Post-operative complications</i>	Discharge Abstracts Database (DAD)	Any in-hospital patient safety events using a validated set of ICD-10 indicators References Southern DA, Burnand B, Droesler SE, Flemons W, Forster AJ, Gurevich Y, Harrison J, Quan H, Pincus HA, Romano PS, Sundararajan V, Kostanjsek N, Ghali WA: Deriving ICD-10 Codes for Patient Safety Indicators for Large-scale Surveillance Using Administrative Hospital Data. <i>Med Care</i> 2017; 55:252–60 McIsaac DI, Hamilton GM, Abdulla K, Lavallée LT, Moloo H, Pysyk C, Tufts J, Ghali WA, Forster AJ: Validation of new ICD-10-based patient safety indicators for identification of in-hospital complications in surgical patients: a study of diagnostic accuracy. <i>BMJ Qual Saf</i> 2019; ePub ahead:bmjqs-2018-008852
<i>Characteristics of post-acute rehab services</i>		
<i>Rehabilitation settings</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting	i.e., geriatric rehabilitation (NRS beds), short-term rehabilitation, slow-pace rehabilitation (MDS beds), convalescent care (MDS beds), home-based rehabilitation, no rehabilitation

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	System (NRS) /Home Care Database (HCD)	
<i>Time to initiation of rehabilitation</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting System (NRS) /Home Care Database (HCD)	Calculate # of days between surgery date and admission date to rehabilitation setting. For home-based rehabilitation, calculate # of days between surgery date and date of first home-based rehabilitation visit Group the # days as follows: post-op days <6, post-op days = 6, post-op days between 7-9 and post-op days >10
<i>Rehabilitation length of stay (LOS)</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting System (NRS) /Home Care Database (HCD)	Calculate the # of days between admission date to rehabilitation setting and the discharge date.
<i>Type of therapy services</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting System (NRS) /Home Care Database (HCD)	e.g., physical therapy, occupational therapy, recreational therapy, social worker
<i>Intensity and frequency of rehabilitation</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting System (NRS) /Home Care Database (HCD)	Frequency = days per week Intensity – minutes per day
<i>Discharge location from rehabilitation</i>	National Rehabilitation Reporting System (NRS) /Complex Continuing Reporting System (CCRS)	e.g., home

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<i>Outcomes</i>		
<i>Place of care/residence at 6- and 12-months post-surgery</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /Home Care Database (HCD) /Registered Persons Database (RPDB)	Place of care macro developed by Richard Perez Reference: Qureshi D, Tanuseputro P, Perez R, Seow H. Place of Care Trajectories in the Last Two Weeks of Life: A Population-Based Cohort Study of Ontario Decedents. <i>J Palliat Med.</i> 2018 Nov;21(11):1588-1595. doi: 10.1089/jpm.2018.0049. Epub 2018 Jul 16. PMID: 30010466; PMCID: PMC6211822.
<i>Return to the emergency department (ED)</i>	National Ambulatory Care Reporting System (NACRS)	90 days And reason (medical complications, surgical complications, new injury)
<i>Readmissions to hospital</i>	Discharge Abstracts Database (DAD)	90 days And reason (exclude elective surgeries)
<i>New long-term care admission</i>	Complex Continuing Reporting System (CCRS)	ADMIT DATE
<i>Days alive at home</i>	Discharge Abstracts Database (DAD) / Ontario Census (CENSUS)	An adjusted validated days alive at home indicator Reference McIsaac DI, Talarico R, Jerath A, Wijeyesundera DN. Days alive and at home after hip fracture: a cross-sectional validation of a patient-centred outcome measure using routinely collected data [published online ahead of print, 2021 Jul 30]. <i>BMJ Qual Saf.</i> 2021;bmjqs-2021-013150. doi:10.1136/bmjqs-2021-013150
<i>Follow-up visits with primary care or specialists</i>	Ontario Health Insurance Plan Claims database (OHIP)	VISITS
<i>New or increased home care services</i>	Home Care Database (HCD)	
<i>Healthcare Costs</i>	Discharge Abstracts Database (DAD) /Complex Continuing Reporting System (CCRS) /National Rehabilitation Reporting System (NRS) /Home Care Database (HCD)	MIS %getcost macro Reference Wodchis W, Austin P, Henry D. A 3-year study of high-cost users in healthcare. <i>CMAJ.</i> 2016. https://doi.org/10.1503/cmaj.150064
<u><i>For all home care and LTC patients only</i></u>		
<i>Functional status</i>	inter Resident Assessment Instrument (InterRAI-	e.g., IADL and ADL self-performance, ADL Hierarchy Scale, ADL Long Form Scale, FIM Crosswalk

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	HC)/Resident Assessment Instrument – Home Care (RAI-HC) /Complex Continuing Reporting System (CCRS)	
<i>Weight bearing status</i>	inter Resident Assessment Instrument (InterRAI-HC)/Resident Assessment Instrument – Home Care (RAI-HC) /Complex Continuing Reporting System (CCRS)	
<i>Level of cognition</i>	inter Resident Assessment Instrument (InterRAI-HC)/Resident Assessment Instrument – Home Care (RAI-HC) /Complex Continuing Reporting System (CCRS)	e.g., Cognitive Performance Scale, FIM Cognition Subscale
<i>Health related quality of life</i>	inter Resident Assessment Instrument (InterRAI-HC)/Resident Assessment Instrument – Home Care (RAI-HC) /Complex Continuing Reporting System (CCRS)	e.g., Health related quality of life survey
<i>Living arrangement status of the client</i>	Home Care Database (HCD)	LIVING_ARRANGEMENTS
<i>Presence of caregiver</i>	Resident Assessment Instrument – Home Care (RAI-HC)	BB4 (marital status)
<i>Caregiver type</i>	Resident Assessment Instrument – Home Care (RAI-HC)	G1FA_RAIHC (informal Helper relationship with client)
<i>Caregiver living status</i>	Resident Assessment Instrument – Home Care (RAI-HC)	G1EA_RAIHC (informal helper lives with client) CC5 (where lived at time of referral) CC6 (who lived with at time of referral) CC7 (prior residential care facility)

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<i>Caregiver distress</i>	Resident Assessment Instrument – Home Care (RAI-HC)	G2A_RAIHC (a caregiver is unable to continue) G2B_RAIHC (caregiver is not satisfied with support from family) G2C_RAIHC (primary caregiver expresses feeling of distress, anger, depression) G2D_RAIHC (caregiver status – none of the above) G3A_RAIHC (hours of informal help 5 weekdays) G3B_RAIHC (hours of informal help 2 weekend days)