

## ONLINE SUPPLEMENTARY DATA

Key Data Sources		
	ONTARIO	QUEBEC
<b>Provincial Health Insurance Plan</b>	<b>Ontario Health Insurance Plan (OHIP)</b>	<b>Regie de l'assurance maladie du Quebec (RAMQ)</b>
<b>Provincial Registry</b>	<b>OHIP Registered Persons Database</b>	<b>RAMQ registrant database</b>
Main Data Elements	Demographic data (sex, dates of birth and death, postal code, socioeconomic data)	Demographic data (sex, dates of birth and death, postal code, socioeconomic data)
<b>Physician billing claims database</b>	<b>OHIP claims history database</b>	<b>RAMQ medical services database</b>
Coverage	1991 onwards	1983 onwards
Coding System	<u>Diagnoses:</u> OHIP codes based on ICD-8/9; 3 digits <u>Procedures:</u> OHIP procedure/fee codes	<u>Diagnoses:</u> ICD-9 Quebec version; 4 digits <u>Procedures:</u> RAMQ procedure codes
Main Data Elements	<ul style="list-style-type: none"> <li>• A diagnosis code representing the main reason for the visit,</li> <li>• Procedure codes for services provided</li> <li>• Date and location of services, physician type</li> </ul>	<ul style="list-style-type: none"> <li>• A diagnosis code representing the main reason for the visit,</li> <li>• Procedure codes for services provided</li> <li>• Date and location of services, physician type</li> </ul>
<b>Hospital inpatient database</b>	<b>Canadian Institute for Health Information Discharge Abstract Database (CIHI-DAD)</b>	<b>Maintenance et exploitation des données pour l'étude de la clientèle hospitalière (MED-ECHO)</b>
Coverage	1988 onwards	1980 onwards
Coding System	<u>Diagnoses:</u> ICD-10: 2002-present; up to 25 diagnoses per encounter ICD-9: prior to 2002; up to 16 diagnoses per encounter <u>Procedures:</u> ICD10-CCI: 2002-present CCP: prior to 2002	<u>Diagnoses:</u> ICD-10: 2006-present; up to 25 diagnoses per encounter ICD-9: prior to 2006; up to 16 diagnoses per encounter <u>Procedures:</u> ICD10-CCI: 2006-present CCP: prior to 2006
Main Data Elements	<ul style="list-style-type: none"> <li>• Demographic data (Date of birth, sex, postal code, residence)</li> <li>• Clinical data (diagnoses, procedures, physician)</li> <li>• Administrative data (institution identifiers, admission category, dates of admission and discharge, length of stay, disposition)</li> </ul>	<ul style="list-style-type: none"> <li>• Demographic data (Date of birth, sex, postal code, residence)</li> <li>• Clinical data (diagnoses, procedures, physician)</li> <li>• Administrative data (institution identifiers, admission category, dates of admission and discharge, length of stay, disposition)</li> </ul>
<b>Pharmacy claims database</b>	<b>Ontario Drug Benefit Prescription Claims Database</b>	<b>RAMQ Prescription Claims Database</b>
Coverage	1990 onwards	1997 onwards
Coding System	Drug Identification Numbers	Drug Identification Numbers
Main Data Elements	<ul style="list-style-type: none"> <li>• Drug quantity</li> <li>• Date prescription was dispensed</li> <li>• Number of days supplied</li> <li>• Drug strength</li> <li>• Route of administration</li> </ul>	<ul style="list-style-type: none"> <li>• Drug quantity</li> <li>• Date prescription was dispensed</li> <li>• Number of days supplied</li> <li>• Drug strength</li> <li>• Route of administration</li> </ul>
Abbreviation: ICD: International Classification of Diseases; CCI: Canadian Classification of Health Intervention; CCP: Canadian Classification of Diagnostic, Therapeutic and Surgical Procedures		

Outcome Codes: Joint Surgery	
CCI Codes	Definition
1EL53	Implantation of internal device, temporomandibular joint [TMJ]
1SQ53	Implantation of device, pelvis
1TA53	Implantation of internal device, shoulder joint
1TM53	Implantation of internal device, elbow joint
1UB53	Implantation of internal device, wrist joint
1UC53	Implantation of internal device, distal radioulnar joint and carpal joints and bones
1UG53	Implantation of internal device, metacarpophalangeal joint(s)
1UH53	Implantation of internal device, first metacarpophalangeal joint
1UK53	Implantation of internal device, interphalangeal joints of hand
1UM53	Implantation of internal device, first interphalangeal joint of hand
1VA53	Implantation of internal device, hip joint
1VG53	Implantation of internal device, knee joint
1VP53	Implantation of internal device, patella
1WA53	Implantation of internal device, ankle joint
1WE53	Implantation of internal device, tarsal bones and intertarsal joints [hindfoot, midfoot]
1WI53	Implantation of internal device, first metatarsal bone and first metatarsophalangeal joint
1WJ53	Implantation of internal device, tarsometatarsal joints, metatarsal bones and metatarsophalangeal joints [forefoot]
1WM53	Implantation of internal device, interphalangeal joints of toe
1WN53	Implantation of internal device, first interphalangeal joint of toe
CCP Codes	
8860	Temporomandibular arthroplasty
9330	Arthroplasty of foot and toe
9331	Arthroplasty of foot and toe with synthe
9339	Other arthroplasty of foot and toe
9340	Revision of total knee replacement cemented or uncemented
9341	Total knee replacement (geomedic) (polyc
9348	Total ankle replacement
9350	Total hip replacement
9351	Total hip replacement with methyl methacrylate
9352	Revision cemented with methyl methacrylate
9353	Revision uncemented
9359	Other total hip replacement
9360	Other arthroplasty of hip
9361	Replacement of head of femur with use of methyl methacrylate
9362	Other replacement of head of femur
9363	Replacement of acetabulum with use of methyl methacrylate
9364	Other replacement of acetabulum
9370	Arthroplasty of hand and finger
9371	Arthroplasty of hand and finger with syn
9380	Arthroplasty of upper extremity, except hand
9381	Arthroplasty of shoulder with synthetic
9384	Arthroplasty of elbow with synthetic pro
9386	Arthroplasty of carpals with synthetic p

<b>Covariates</b>		
<b>Definitions</b>	<b>ONTARIO</b>	<b>QUEBEC</b>
Socioeconomic Status	Defined using patient postal codes to determine regional median household income quintile from the Statistics Canada Census	Defined using social assistance status and derived using patient postal codes to determine regional employment rate, income, and education using Census data
<b>Comorbidities<sup>1</sup></b>		
Osteoarthritis	One or more hospitalizations or two or more OHIP claims <b>OHIP:</b> 715 <b>ICD9:</b> 715 <b>ICD10:</b> M15-M19	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 715 <b>ICD10:</b> M15-M19
COPD/Asthma <sup>2</sup>	One or more hospitalizations or two or more OHIP claims for asthma within 2 years; or one or more OHIP claims for COPD <b>OHIP:</b> 491, 492, 493, 496 <b>ICD9:</b> 491, 492, 493, 496 <b>ICD10:</b> J41, J42, J43, J44, J45, J46,	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 490-505, 506.4 <b>ICD10:</b> I278, I279, J40-J47, J60-J67, J684, J701, J703
Diabetes <sup>2</sup>	One or more hospitalizations or two or more OHIP claims or one or more OHIP fee codes <b>OHIP:</b> 250 Fee code: Q040, K029, K030 <b>ICD9:</b> 250 <b>ICD10:</b> E10-E14	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 250 <b>ICD10:</b> E10-E14
Coronary artery disease	One or more hospitalizations or two or more OHIP claims <b>OHIP:</b> 412 <b>ICD9:</b> 410, 411, 412, 413, 414 <b>ICD10:</b> I20, I21, I22, I23, I24, I250, I251, I252, I254, I255, I256, I258, I259	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 410, 411, 412, 413, 414 <b>ICD10:</b> I20, I21, I22, I23, I24, I250, I251, I252, I254, I255, I256, I258, I259
Cancer	One or more hospitalizations or two or more OHIP claims <b>OHIP:</b> 140 to 209 <b>ICD9:</b> 140 to 209 <b>ICD10:</b> C00 to C100	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 140 to 209 <b>ICD10:</b> C00 to C100
Extra-articular RA Features	One or more hospitalizations or two or more OHIP claims <b>OHIP:</b> 511, 515, 466, 686 <b>ICD 9:</b> 515, 379, 446, 7148, 5110, 5118, 5119, 5064, 5081, 5163, 7707, 7141, 7142, 7102, 6860, 3571, 3540, 3555, 2773 <b>ICD10:</b> J90, J91, J84, I39, H15, L95, L88, E85, J990, M050, I528, I418, I328, H193, M350, M051, M052, M053, G635, G560, G575	One or more hospitalizations or physician claims  <b>ICD 9:</b> 515, 379, 446, 7148, 5110, 5118, 5119, 5064, 5081, 5163, 7707, 7141, 7142, 7102, 6860, 3571, 3540, 3555, 2773 <b>ICD10:</b> J90, J91, J84, I39, H15, L95, L88, E85, J990, M050, I528, I418, I328, H193, M350, M051, M052, M053, G635, G560, G575
Osteoporosis	One or more hospitalizations or two or more OHIP claims <b>OHIP:</b> 733 <b>ICD9:</b> 7330 <b>ICD10:</b> M80, M81	One or more hospitalizations or two or more physician claims  <b>ICD9:</b> 7330 <b>ICD10:</b> M80, M81

# **Covariates (continued)**

Acute myocardial infarction	One or more hospitalizations <b>ICD-9:</b> 410, 412 <b>ICD10:</b> I21, I22, I252	One or more hospitalizations <b>ICD-9:</b> 410, 412 <b>ICD10:</b> I21, I22, I252
Chronic renal failure	One or more hospitalizations or OHIP claims <b>OHIP:</b> 403, 404, 585 <b>ICD9:</b> 403, 404, 585, V56 <b>ICD10:</b> N18, Z49, Z992, T824, I120, V451, N032, N033, N034, N035, N036, N037, N052, N053, N054, N055, N056, N057, I131, I132,	One or more hospitalizations or physician claims <b>ICD9:</b> 403, 404, 585, V56 <b>ICD10:</b> N18, Z49, Z992, T824, I120, V451, N032, N033, N034, N035, N036, N037, N052, N053, N054, N055, N056, N057, I131, I132,
Acute renal failure	One or more hospitalizations or OHIP claims <b>OHIP:</b> 584, 586 <b>ICD9:</b> 584, 586 <b>ICD10:</b> N17, N19	One or more hospitalizations or physician claims <b>ICD9:</b> 584, 586 <b>ICD10:</b> N17, N19
Cerebrovascular disease	One or more hospitalizations <b>ICD9:</b> 434, 436 <b>ICD10:</b> I63, I64	One or more hospitalizations <b>ICD9:</b> 434, 436 <b>ICD10:</b> I63, I64

<sup>1</sup> Ascertained over the 3 years prior to baseline unless specified

<sup>2</sup> Ascertained over all available records (1990 onwards) in Ontario, but over 3 years in Quebec