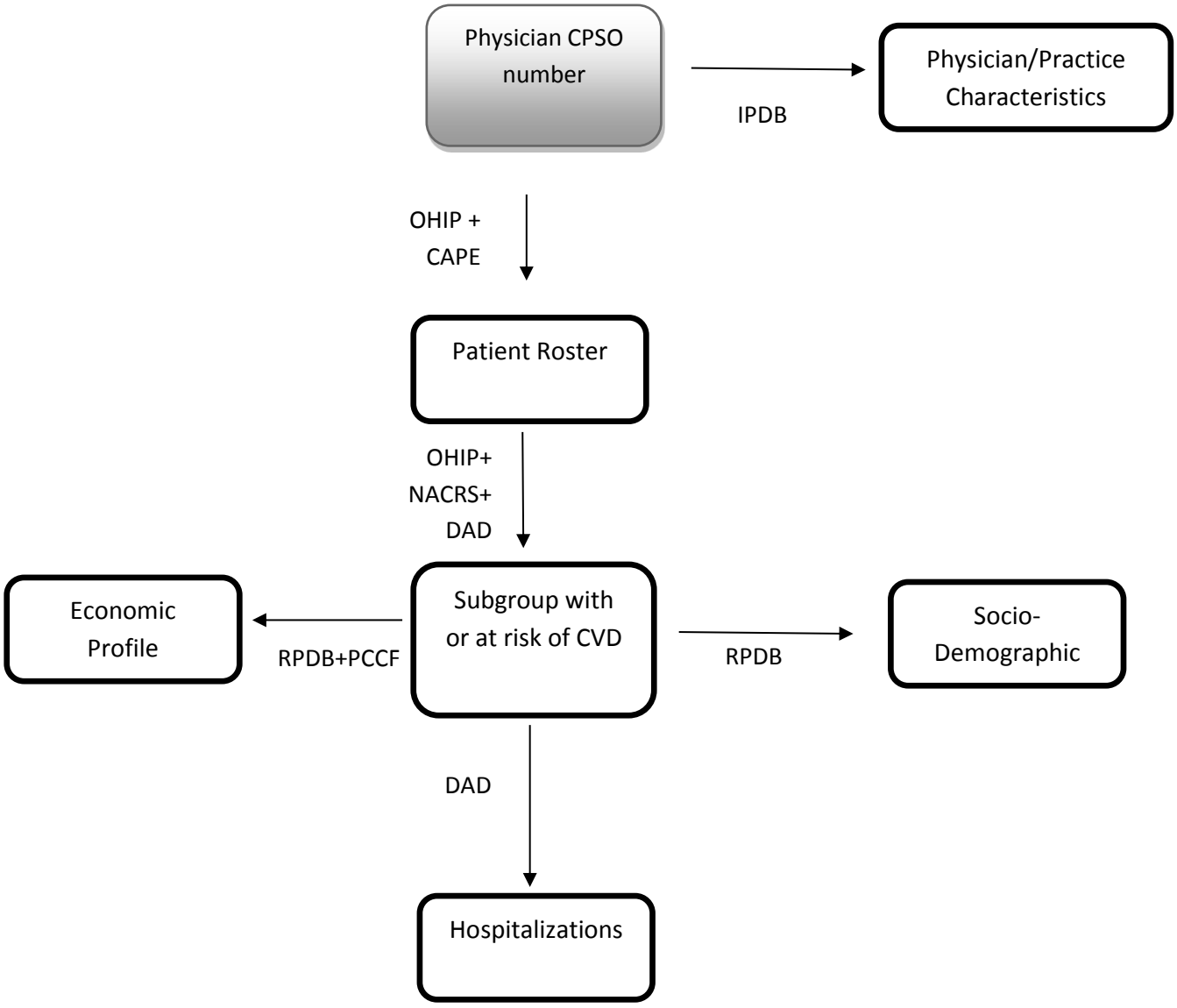
Data Construction Appendix

Data Sources: All data sources upon which this project relies are regularly collected administrative health encounter data housed at the Institute for Clinical Evaluative Sciences (ICES). The following data set are used in this study.

1) **CAPE**: The Client Agency Program Enrolment database tracks patient enrolment to individual family physicians.
2) **DAD**: The Discharge Administrative Database supplies information on acute care hospitalizations
3) **IPDB**: ICES Physician Database contains annual demographic data for physicians as well as information on areas of specialization and workload.
4) **NACRS**: The National Ambulatory Care Reporting System provides information on all emergency room encounters.
5) **OHIP**: The Ontario Health Insurance Program billing claims system captures provision of care to patients.
6) **PCCF**+: Statistics Canada's Postal Code Conversion File allows patients to be attributed to a census dissemination area based on postal code.
7) **RPDB**: The Registered Person's Database captures patient demographic information, including age, sex and postal code.

Data Linkage – Graphical Summary:



Summary of Algorithms used to identify patients with CVD

Coronary Artery Disease (CAD)	
Data Sources	DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward) OHIP (July 1991 forward)
Case Ascertainment	• 1 hospital admission with a CAD diagnosis code, or 1 CAD OHIP billing code
Codes Used	Acute myocardial infarction[1] ICD-9: 410 ICD-10: I21, I22, I252, I513 Percutaneous coronary invervention[2] prcode: 4802, 4803, 4809 incode: 1IJ50, 1IJ57GQ, 1IJ57GS Coronary artery bypass graft surgery[2] prcode: 481 incode: 1IJ76 Cardiac cathetrerization prcode: 4892, 4893, 4894, 4895, 4896, 4897, 4898, 4995, 4996, 4997 incode: 3IP10 OHIP billing codes: Z442 or G297
Notes	Definition from Tu et al.[3]

Cerebral Vascular Disease (CVD)[4]	
Data Sources	DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward)
Case Ascertainment	• 1 hospital admission with a CVD diagnosis code
Codes Used	ICD-9: 430, 431, 432, 434, 436 (any type) ICD-10-CA: I63, I64, G46, G45, H34 (any type)

Ontario Diabetes Database (ICES Derived Cohort)[5,6]	
Case Ascertainment (Bridge)	• 1 or 2 OHIP dxcode claims prior to 19th birth date **AND** • 1 OHIP claim after 19th birth date within 2 years *(19th birth date is used as incident date)*
Case Ascertainment (Adult)	• 2 OHIP dxcodes **OR** • 1 OHIP feecode **OR** • 1 CIHI admission after 19th birth date

Data Sources	OHIP (July 1991 forward) DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward)
Codes Used	ICD-9: 250 (any type) ICD-10-CA: E10, E11, E13, E14 (any type) OHIP dxcode: 250 OHIP feecode: Q040, K029, K030
Notes	Gestational Diabetes records excluded Incidence not reported for first 3 years

Renal Failure	
Case Ascertainment	• Any one of the 2 OHIP diagnosis codes or 9 ICD-9/ICD-10 codes within the 5 years prior to cohort entry without kidney transplant within the previous five years and without dialysis within the previous 1 year.
Data Sources	DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward) OHIP (July 1991 forward)
Inclusion Codes Used	ICD-9: 4030, 4031, 4039, 4040, 4041, 4049, 585, 586, 5888, 5889, 2504 (any dxcode) ICD-10-CA: E102, E112, E132, E142, I12, I13, N08, N18, N19 OHIP: 403, 585
Exclusion Codes Used	**Kidney Transplant:** ICD-9: V420, 99681 CCP: 6743, 675 ICD-10: T861, N165, Z940 CCI: 1PC85 OHIP: E762, E769, E771, G347, G348, G408, G409, G412, S434, S435, Z631 **Dialysis Codes:** ICD-9: E1022, E1023, E1122, E1123, E1322, E1323, E1422, E1423, N180, T824, Y602, Y612, Y622, Y841, Z49, Z992 CCP: 5127, 5142, 5143, 5195, 6698 ICD-10: V451, V560, V568, 36104 CCI: 1PZ21, 1OT53DATS, 1OT53HATS, 1OT53LATS, 1SY55LAFT, 7SC59QD, 1KY76 OHIP: G082, G083, G085, G090, G091, G092, G093, G094, G095, G096, G099, G294, G295, G323, G324, G325, G326, G327, G330, G331, G332, G333, G336, G860, G861, G862, G863, G864, G865, G866, H540, H740, R825, R826, R827, R833, R840, R841, R843, R848, R849, R850, R851, R852, R853, R854, R885, Z450, Z451,Z452
Notes	From Fleet JL et al[7]

Peripheral Vascular Disease (PVD)[4]

Case Ascertainment	• 1 hospital admission with a PVD intervention code **AND** • Without specified diagnosis codes on the same abstract
Data Sources	DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward)
Codes Used	*Major:* • CCP: 96.14, 96.15 • CCI: 1VQ93, 1VC93, 1VG93 *Minor:* • CCP: 96.11, 96.12, 96.13 **WITHOUT** o ICD-9: 170, 171, 213, 730, 740-759, 800-900, 901-904, 940-950 **on the abstract** • CCI: 1WL93, 1WA93, 1WE93, 1WJ93, 1WM93 **WITHOUT** o ICD-10-CA: C40, C41, C46.1, C47, C49, D160, M46.2, M86, M87, M89.6, M90.0-M90.5, Q00, Q38-Q40, S02.0, S04.0 S09.0, S15, S25, T26 **on the abstract** *Bypass:* • CCP: 51.25, 51.29, 50.18 ICD9 **WITHOUT** o ICD-9: 4141, 441, 442 **on the abstract** • CCI: 1KG50, 1KG57, 1KG76, 1KG35HAC1, 1KG35HHC1 **WITHOUT** o ICD-10-CA: I67.1, I71, I72, I60, I77.0, I79.0, Q codes **on the abstract**

Hypertension (ICES Derived Cohort)[8]	
Case Ascertainment	• 1 hospital admission with a hypertension diagnosis code **OR** • 1 OHIP record with a hypertension diagnosis code, followed within 2 years by another OHIP record or a hospital admission with a hypertension diagnosis code
Data Sources	OHIP (July 1991 forward) DAD/SDS (April 1988 forward) NACRS (SDS only) (F2003-04 forward)
Codes Used	ICD-9: 401x, 402x, 403x, 404x, 405x (any type) ICD-10-CA: I10, I11, I12, I13, I15 (any type) OHIP dxcode: 401, 402, 403, 404, 405 (any type)
Notes	Gestational hypertension records excluded Generic exclusions do not apply to this cohort

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