

Appendix 1. Chronic diseases : case definition algorithms and validation studies.

Chronic disease category	Chronic disease	Algorithms	CODES				Validation studies						
			ICD-9 ²	ICD-10	Treatment	Pharmaceutical claims	Sensitivity	Specificity	NPV	PPV	Reference		
Diabetes	Diabetes (Québec definition)	At least 2 diagnostic codes for diabetes in the medical claims within 2 years OR At least 1 diagnostic code for diabetes in the hospital discharges											
		<p>Exclusions : Women 10-54 years old : 1) Diabetes codes in the 120 days before and 180 days after a hospital admission in obstetrics. Hospital discharges : ICD-9 : 641-676, V27; ICD-10 : O1, O21-95, O98, O99, Z37. 2) Diabetes codes in the 180 days after a claim for a consultation related to a pregnancy or an echography.</p> <p>Claims : 00059, 00679, 09138, 09156, 09157, 09166, 09167, 15117, 15108, 15109, 15110, 15111, 15124, 15125, 15126, 15127, 15129, 15141, 15144, 15145, 15159, 01679, 01680, 01681, 01682, 01684, 01685, 16086, 16087, 08312, 08314, 08317, 08318, 08319, 08323, 08324, 08339, 00067, 00072, 00073, 00076, 00077, 06773, 06911, 09066;</p> <p>Women 15-44 years old : Diabetes codes for an orally provoked hyperglycemia. Claim : 00761</p>	250	E10-E14			68-95	97-99.9	99.9	66-88	Hux JE, Diabete Care, 2002 Southern DA, CanJPublicHealth, 2010 Ouhoummane N, Thèse, 2010 Dart AB, DiabCare, 2011		
	Hypertension	At least 2 diagnostic codes for hypertension in the medical claims within 2 years OR At least 1 diagnostic code for hypertension in the hospital discharges (≥ 20 years old)	401-405	I10-I13, I15				72-75	94-95	88-92	81-87	Tu K, OpenMed, 2007 Quan H, Hypertension, 2009	
Cardiovascular disease	Ischemic heart disease	At least 2 diagnostic codes for ischemic heart disease in the medical claims within a year OR At least 1 diagnostic code or 1 treatment code for ischemic heart disease in the hospital discharges. (≥ 20 years old)	410-414	I20-I25	CCADTC* 48.02	CCI† 1.IJ.50		77	98	98	75	Tu K, CanJCardio, 2010	
					48.11- 48.19	1.IJ.54 1.IJ.76							
	Heart failure	At least 2 diagnostic codes for heart failure in the medical claims within a year OR At least 1 diagnostic code for heart failure in the hospital discharges (≥ 40 years old)	428	I50				61-85	97-99	-	56-66	Schultz SE, CDIC, 2013	
	Stroke	At least 2 diagnostic codes for stroke in the medical claims within a year OR At least 1 diagnostic code for stroke in the hospital discharges (≥ 20 years old)	Hospital data : '3623', '430', '431', '43301', '43311', '43321', '43331', '43381', '43391', '434.x1', '435', '436' Medical claims : '430', '431', '434', '435', '436'	'G450', 'G451', 'G452', 'G453', 'G458', 'G459', 'H340', 'H341', 'I60', 'I61', 'I630', 'I631', 'I632', 'I633', 'I634', 'I635', 'I638', 'I639', 'I64'				68	99	99	66	Tu K, CanJCardio, 2013	

Chronic disease category	Chronic disease	Algorithms	CODES			Validation studies					
			ICD-9 ²	ICD-10	Treatment	Pharmaceutical claims	Sensitivity	Specificity	NPV	PPV	Reference
Respiratory disease	Asthma	At least 2 diagnostic codes for asthma in the medical claims within 2 years OR At least 1 diagnostic code for asthma in the hospital discharges	493	J45, J46			84	77	91	62	Gershon AS, Can RespirJ., 2009
	Chronic obstructive pulmonary disease	At least 1 diagnostic code for COPD in the medical claims OR At least 1 diagnostic code for COPD in the hospital discharges (≥ 35 years old)	491,492, 496	J41-J44			85	78	94	58	Gershon AS, COPD, 2009
Mental disorders	Mental disorders	At least 1 diagnostic code for a mental disorder in the medical claims OR At least 1 diagnostic code for a mental disorder in the hospital discharges (≥ 1 year old)	290-319	F00-F99			-	-	-	-	Lesage A, INSPQ, 2012
	Mental disorders	RE-EVALUATED EVERY YEAR. At least 3 diagnostic code for Alzheimer's disease or a similar disorder in the medical claims (≥ 40 years old) OR At least 1 diagnostic code for Alzheimer's disease or a similar disorder in the hospital discharges (≥ 40 year old) OR Pharmaceutical claim for a drug against Alzheimer's disease	Medical claims : 290, 294, 331, 046.1. Hospital data : 290,294,331.0, 331.1,331.5	G30, F00, F01, F02, F03.	DIN codes: '02232043','02232044','02269457','02269465','82232044','02244298','02244299','02244300','02266717','02266725','02266733','02316943','02316951','02316978','02339439','02339447','02339455','82244299','82244300','02244302','02270773','02270781','02270803','02293021','02293048','02293056','02295229','02295237','02295245','02333376','02333384','02333392','02377950','02377969','02377977','02260638','02320908','02321130','02324059','02324067','02344807','02348950','02349116','02366487','02305984','02305992','02306018','02306026','02306034','02306042','02306050','02306069','02307685','02307693','02307707','02307715','02308169','02308177','02308185','02308193','02308622','02308630','02308649','02308657','02311283','02311291','02311305','02311313','02312492','02312506','02312514','02312522','02332809','02332817','02332825','02332833','02336715','02336723','02336731','02336758','02375729','02375737','02375745','02375753','02242115','02242116','02242117','02242118','02245240','02302845','02302853','02324563','02324571','02324598','02324601','82242115','82242116'.	-	-	-	-	Lesage A, INSPQ, 2012	

Note : In Québec, the 9th edition of the International classification of diseases (ICD) is used in the medical claims database and it was used in the hospital discharges database until March 2006. ICD-10 is used for the deaths registry and it has been used in the hospital discharges database since April 2006.

*CCADTC : Classification canadienne des actes diagnostiques, thérapeutiques et chirurgicaux, in the hospital discharges database until March 2006.

† CCI : Classification canadienne des interventions en santé, in the hospital discharges database starting in April 2006.

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