

18 **Online-only Tables**

19 **eTable 1 Chronic conditions as classified in the chronic condition administrative database, with source databases and**

20 **diagnostic codes used, and how a-priori grouped to be inserted as predictor in the multivariable logistic regression model.**

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Comorbidity as in the AHP database			Comorbidity definition from other AHP databases*				Comorbidity as in the predictive model
Cod e	Description	Database	Codes (ICD-9-CM/ATC)	Yrs	Exclusion Criteria		
02a	Transplanted-active	Copayment exemption	052*	0-2			Transplanted any time
		ODS -DRG	302, 103, 495, 480, 481, 512, 513	0-2			
02b	Transplanted-not active	Copayment exemption	052*	2-10	02a		
		ODS -DRG	302, 103, 495, 480, 481, 512, 513	2-10	02a		
		ODS -Diagl and DiagII	V42.0, V42.1, V42.6, V42.7, V42.8*, V42.3, V42.4, V42.5, V42.9	2-10	02a		
03b	CKD	Copayment exemption	023*, 031.403, 031.404	0-10	03a		CKD
		ODS -DRG	316, 317	0-5	03a		
		ODS -Diagl and DiagII	V56*, 585*, 586*	0-5	03a		
		Drugs	V03AE02, V03AE03, V03AE01	0-1	03a		
03a	Dialysis dependent CKD	Outpatients	≥ 70 accesses with code 3995*-5498*	0-1			Dialysis dependent CKD
04	HIV infection or AIDS	Copayment exemption	020*	0-10			HIV infection or AIDS
		Drugs	J05AB14, J05AE*, J05AR*, J05 AG*, J05AX07 (30% DDD)	0-1			
		ODS -DRG	488, 489, 490	0-5			
		ODS -Diagl and DiagII	042*, V08	0-5			
05a	Tumor in first line treatment	Copayment exemption	048*	0-1			Tumor in first line treatment
		Drugs	L01* (excluded L01AB01 AND L01AA01)	0-1			
		Drugs	L01AB01, L01AA01	0-1	Copayment exemptions: 006.710; 045.696; 028.710; 047.710.1; 046.340		
		Copayment exemption	006.710, 045.696, 028.710, 047.710.1, 046.340	0-1			
		ODS -Diagl and DiagII	140*-208*, V580*, V581*	0-1			
		ODS -Procedures	9925*,	0-1			
05b	Tumor in follow-up, 1-5years	Outpatients	9925*, 9224*, 92251*, 92271*, 92273*, 92275*, 92283*, 92284*, 92285*, 92286*, 38991, 3992, 8901M, 897C1, 9229H, 9229J, 9229K, 9229L, 9229M, MAC01, MAC02, MAC03, MAC04	0-1	Criteria used only if the above criteria are not met		
		Drugs	L02*, L01*(Excluded L01AB01 AND L01AA01)	1-5	K05a		
05b	Tumor in follow-up, 1-5years	Copayment exemption	048*	1-5	K05a		Tumor in follow-up, 1-5years
		ODS -Diagl and DiagII	140*-208*, V580*, V581*	1-5	K05a		
		ODS -Procedures	9925*	1-5	K05a		
		Drugs	L02*, L01*(Excluded L01AB01 AND L01AA01)	1-5	K05a		
		Drugs	L01AB01, L01AA01	1-5	K05a; Copayment exemptions:006.710;		

		Copayment exemption	006.710, 045.696, 028.710, 047.710.1, 046.340	1-5	045.696; 028.710; 047.710.1; 046.340 between -1 and -5 yrs;	
		Outpatients	9925*, 9224*, 92251*, 92271*, 92273*, 92275*, 92283*, 92284*, 92285*, 92286*, 38991, 38992, 8901M, 897C1, 9229 H, 9229J, 9229K, 9229L, 9229M, MAC01, MAC02, MAC03, MAC04	1-5	K05a; Criteria used only if the above criteria are not met	
05b	Tumor in remission after 5 years	Copayment exemption	048*	5-10	K05b, K05a	
		ODS -Diagl and DiagII	140*-208*, V580*, V581*	5-10	K05b, K05a	
		ODS -Procedures	9925*	5-10	K05b, K05a	
		Drugs	L01*(excluded L01AB0, L01AA01) between -5 and -10	5-10	K05b, K05a	
		Drugs	yr L01AB01, L01AA01	5-10	K05b, K05a. Copayment exemptions: 006.710;045. 696;028.710; 047.710.1;046.340 Between -5 And 10;	Tumor in remission after 5 years†
		Copayment exemption		5-10		
		Outpatients	006.710, 045.696, 028.710, 047.710.1, 046.340 9925*, 9224*, 92251*, 92271*, 92273*, 92275*, 92283*, 92284*, 92285*, 92286*, 38991, 38992, 8901M, 897C1, 9229 H, 9229J,9229K,9229L,9229M,MAC01,MAC02, MAC03,MAC04	5-10	K05b, K05a. Criteria used only if the above criteria are not met	
13b	Tumors	Copayment exemption	Rb*	0-10		
06a	Type 1 diabetes	Copayment exemption	013.250 (age at first exemption <35yrs)	0-10		
		ODS -DRG	295	0-5		
		ODS -Diagl and DiagII	250.01, 250.03, 250.11, 250.1 3, 250.21, 250.23, 250.31, 250.33	0-5		
		Drugs	A10A*(Ddd>50%)	0-1		Diabetes
06b	Type 2 diabetes	Copayment exemption	013.250 (age at first exemption <35yrs)	0-10		
		ODS -DRG	294	0-5		
		ODS -Diagl and DiagII	250.00, 250.02, 250.10, 250.1 2, 250.20, 250.22, 250.30, 250.32	0-5		
		Drugs	A10B* (Ddd>50%)	0-1		
06a	Complicated DM Type 1	ODS -DRG	285	0-5		
		ODS -Diagl and DiagII	250.41, 250.43, 250.51, 250.53, 250.61, 250.63, 250.71, 250.73, 250.81, 250.83, 250.91, 2 50.93, 362.01-363.07, 357.2	0-5		
		Drugs	N03AX16 OR N03AX12 (Ddd>30%)1433, 1434, 1475, 96591, 96592, 96593, 96594, 96595, 96596	0-1		
		Outpatients		0-1		
06b	Complicated DM Type 2	ODS -DRG	285	0-5		Complicated DM Type 1 and 2
		ODS -Diagl and DiagII	250.42, 250.40, 250.50, 250.52, 250.60, 250.62, 250.70, 20.72, 250.80, 250.82, 250.90, 2 50.92, 362.01-363.07, 357.2	0-5		
		Drugs	N03AX16 OR N03AX12 (Ddd>30%)	0-1		
		Outpatients	1433, 1434, 1475, 96591, 96592, 96593, 96594, 96595, 96596	0-1		
07a	Arterial hypertension	Copayment exemption	031.401, 031.405, D31.401, D31.405	0-10		Arterial hypertension

		Drugs	C02AC01, C02ca04, C03*, C0 7*, C08c*,	0-1		
		ODS -DRG	C09*(Ddd>50%)	0-5		
		ODS -Diagl and DiagII	134	0-5		
			401*, 403*, 405*			
07b	Ischemic heart disease	Copayment exemption	002.414	0-10	Ischemic heart disease	
		Drugs	C01DA*(Ddd>50%)	0-1		
		ODS -Diagl and DiagII	410*-414*	0-5		
		ODS -Procedures	36*	0-5		
07b	Valvular heart disease	Copayment exemption	002.394, 002.395, 002.396, 002.397, 002.424, 002.745,	0-10	Valvular heart disease	
		ODS -Procedures	00	0-5		
		ODS -Diagl and DiagII	2.746, 002.747, 002.V42.2, 002.V43.335*	0-5		
			394*-397*, 745*-747*			
07b	Cardiomyopathy with arrhythmia	Copayment exemption	002.426, 002.427, 002.V45.0	0-10	Cardiomyopathy with arrhythmia	
		Drugs	C01b* (Ddd>50%)	0-1		
		ODS -Diagl and DiagII	426*, 427*, V45.0*	0-5		
		ODS -Procedures	3765, 3766, 3768, 3770, 3787,	0-5		
		Outpatients	3789, 379689481	0-1		
07b	Cardiomyopathy without arrhythmia	Copayment exemption	031.402, 031.403, 002.416, 002.417, 002.429.4	0-10	Cardiomyopathy without arrhythmia	
		Drugs	C02KX01, C02KX02, C02KX03, G04BE03, G04BE08, B01AC09 (Ddd>50%)	0-1		
		ODS -Diagl and DiagII	402*:404*, 415*, 416*, 417*, 425*, 4294	0-5		
07c	Chronic Heart failure	Copayment exemption	021.428	0-10	Chronic Hearth failure	
		ODS -Diagl and DiagII	428*	0-5		
		Drugs	C09a*, C09c* (Ddd>50%)	0-1		K07c_Atc2, K07_Atc3
		Drugs	C03ca*, C03cb*, C03eb* (Ddd>50%)	0-1		K07c_Atc1
		Drugs	C07ag02, C07ab02, C07ab0 7 (Ddd>50%)	0-1	K07c_Atc1	
13	Circulatory system disease'	Copayment exemption	Rg*	0-10		
07b	Peripheral Artery Disease	Copayment exemption	002.440, 002.441.2, 002.441.4, 002.441.7, 002.441.9, 002.442, 002.444, 002.447.0, 002.447.1, 002.447.6	0-10	Peripheral Artery Disease	
		ODS -Diagl and DiagII	440*, 441*, 442*, 443.1, 443.2*, 444*, 445*, 447*	0-5		
		ODS -Procedures	3924, 3925, 3926, 3950, 3951, 3952, 3954, 3956, 3957, 3958, 3971, 3972, 3973, 3974, 3979, 3990	0-5		
07b	Venous diseases	Copayment exemption	002.452, 002.453, 002.459.1	0-10	Venous diseases	
		ODS -Diagl and DiagII	452*, 453*, 459.1*	0-5		
07b	Cerebrovascular disease	Copayment exemption	002.433, 002.434, 002.437	0-10	Cerebrovascular disease	
		ODS -Diagl and DiagII	430*-438*	0-5		
08a	Asthma	Copayment exemption	007.493	0-10	Asthma	
		Drugs	R03DC03, R03DC01	0-1		
		Drugs	R03* (Ddd>30%) Età < 45Aa	0-1		
		ODS -Diagl and DiagII	493*	0-5		
08b	COPD	Drugs	R03* (Ddd>30%) Età >=45Aa,	0-1	COPD	
		ODS -Diagl and DiagII	491*, 492*, 494*, 496*	0-5		
08c	RF or Oxygen therapy	Copayment exemption	024.518.8, 024.518.81	0-10	RF or Oxygen therapy	
		ODS -Diagl and DiagII	518.83 518.84	0-5		

		Drugs	V03AN01 for at least 400 euros	0-1	
09a	Chronic hepatitis	Copayment exemption	016*	0-10	
		ODS -Diagl and DiagII	070*	0-5	
		Drugs	L03AB04, L03AB05, L03AB06, L03AB09, L03AB10, L03AB11, L03AB12, L03AB60, L03AB61 (Ddd>50%)	0-1	Chronic hepatitis and cirrhosis
09a	Heatic cirrhosis	Copayment exemption	008*	0-10	
		ODS -Diagl and DiagII	571.2 571.5 571.6571.8, 572.3, 456.0, 456.1, 456.2	0-5	
09a	Chronic Pancreatitis	Copayment exemption	042*	0-10	
		ODS -Diagl and DiagII	577.1	0-5	K05a- K05b-K05c
		Drugs	A09AA* (Ddd>50%)	0-1	
09a	IBD	Copayment exemption	009*	0-10	
		ODS -Diagl and DiagII	555*, 556*	0-5	Digestive system diseases
		Drugs	A07EA at least two times	0-1	
13	Digestive system diseases, other	Copayment exemption	Ri*	0-10	
10a	Epilepsy	Copayment exemption	017.345	0-10	Epilepsy
		Drugs	N03AB02 OR N03AX14 (Ddd>50%)	0-1	
		ODS -Diagl and DiagII	345*	0-5	
10b	Parkinson and Parkinsonisms	Copayment exemption	038, 038.332	0-10	Parkinson and Parkinsonisms
		Drugs	N04* (Ddd> 30%)	0-1	
		ODS -Diagl and DiagII	332.0, 332.1	0-5	
10c	Alzheimer	Copayment exemption	029.331.0	0-10	
		Drugs	N06D (Ddd >30%)	0-1	
		ODS -Diagl and DiagII	331.0	0-5	Alzheimer and Dementias
10f	Dementias	Copayment exemption	011.290.0, 011.290.1, 011.290.2, 011.290.4, 011.291.1, 011.290	0-10	
		ODS -Diagl and DiagII	290*, 294*	0-5	
10d	Multiple sclerosis	Copayment exemption	046.340	0-10	
		Drugs	L03AB07, L03AB08, L03AX13, L04AA27, L04AA23	0-10	
		ODS -DRG	013	0-5	Other nervous system diseases
		ODS -Diagl and DiagII	340*, 341.9	0-5	
13	Other diseases of the nervous system	Copayment exemption	Rf*	0-10	
11a	Rheumatoid arthritis	Copayment exemption	006*	0-10	
		ODS -Diagl and DiagII	714.0, 714.1, 714.2, 714.30, 714.32, 714.33	0-5	
11b	Systemic lupus erythematosus	Copayment exemption	028*	0-10	
		ODS -Diagl and DiagII	710.0	0-5	
11c	Systemic sclerosis	Copayment exemption	047*	0-10	
		ODS -Diagl and DiagII	710.1	0-5	Autoimmune diseases
11d	Sjogren's disease	Copayment exemption	030*	0-10	
		ODS -Diagl and DiagII	710.2	0-5	
11e	Ankylosing spondylitis	Copayment exemption	054*	0-10	
		ODS -Diagl and DiagII	720.0	0-5	
11f	Myasthenia gravis	Copayment exemption	034.358.0	0-10	
			358.0		

		ODS -Diagl and DiagII Drugs	N07AA02 (Ddd>50%)	0-5 0-1	
11h	Autoimmune hemolytic anemias	Copayment exemption ODS -Diagl and DiagII	003* 283.0	0-10 0-5	
11i	Psoriasis and psoriatic arthropathy	Copayment exemption ODS -Diagl and DiagII	045* 696*	0-10 0-5	
13m	Connective tissue diseases, others	Copayment exemption	Rm*	0-10	
11g	Hashimoto's thyroiditis	Copayment exemption ODS -Diagl and DiagII	056* 245.2	0-10 0-5	
12e	Hypothyroidism	Copayment exemption Drugs ODS -Diagl and DiagII	027* H03AA01 (Ddd>30%) 243, 244*	0-10 0-1 0-5	Thyroid diseases
12g	Basedow's disease	Copayment exemption ODS -Diagl and DiagII	035* 242.0*, 242.1*, 242.2*, 242.3	0-10 0-5	
12a	Acromegaly gigantism	Copayment exemption Drugs ODS -Diagl and DiagII	001* H01CB* (Ddd >50%) 253.0	0-10 0-1 0-5	Other endocrine diseases
12b	Diabetes insipidus	Copayment exemption ODS -Diagl and DiagII	012* 253.5	0-10 0-5	
12c	Addison's disease	Copayment exemption ODS -Diagl and DiagII	022* 255.4	0-10 0-5	
12d	Hyper and hypoparathyroidism	Copayment exemption ODS -Diagl and DiagII	026* 252.0, 252.1	0-10 0-5	
12f	Cushing's syndrome	Copayment exemption ODS -Diagl and DiagII	032* 255.0	0-10 0-5	
12h	Pituitary dwarfism	Copayment exemption ODS -Diagl and DiagII	039* 253.3	0-10 0-5	
13c	Other metabolic and endocrine diseases	Copayment exemption	Rc*	0-10	
12i	Familial and sporadic Hypercholesterolemia	Copayment exemption Drugs ODS -Diagl and DiagII	025* C10AA* (Ddd>50%) 272.0, 272.2, 272.4, 272.9	0-10 0-1 0-5	Hypercholesterolemia
13d	Blood and Hematopoietic organs	Copayment exemption	Rd*	0-10	Blood and Hematopoietic organs
13a	Infectious and parasitic diseases	Copayment exemption	Ra*	0-10	Not included
13j	Diseases of the genitourinary system	Copayment exemption	Rj*	0-10	Not included
13l	Chronic cutaneous diseases	Copayment exemption	Rl*	0-10	Not included
10e	Optic neuromyelitis	Copayment exemption ODS -Diagl and DiagII	041.341.0 341.0	0-10 0-5	Not included
13n	Congenital	Copayment exemption	Rn*	0-10	Not included

	malformation				
13p	Some perinatal conditions	Copayment exemption	Rp*	0-10	Not included
13q	Ill-defined chronic conditions	Copayment exemption	Rq*	0-10	Not included

22 *for each comorbidity any of the criteria is sufficient

23 †Moreover, the category 13b called 'Tumors' (n = 4) was reclassified: 2 cases also had the Tumor in follow-up, 1-5years = 1, the remaining 2 were included in the remission
 24 neoplasm = 1

25 ‡ The 'circulatory system disease' variable (n = 25) has been merged with the heart failure variable since it is the most frequent outcome of rare circulatory system diseases
 26 whose diagnosis is based on the exemption only (not present in the other specific categories)

27 Abbreviations: CKD=Chronic kidney disease, COPD=Chronic obstructive pulmonary disease, DM=diabetes mellitus, RF=Respiratory Failure

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