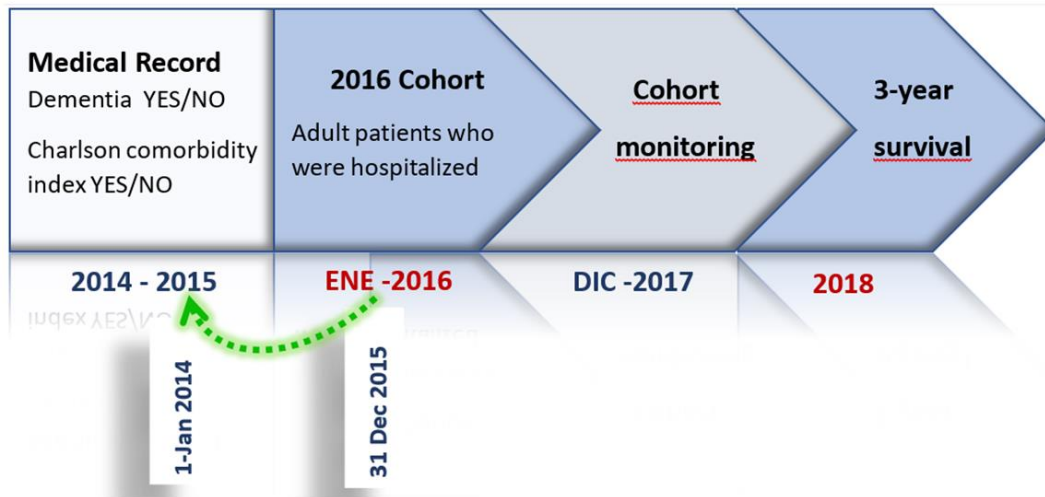
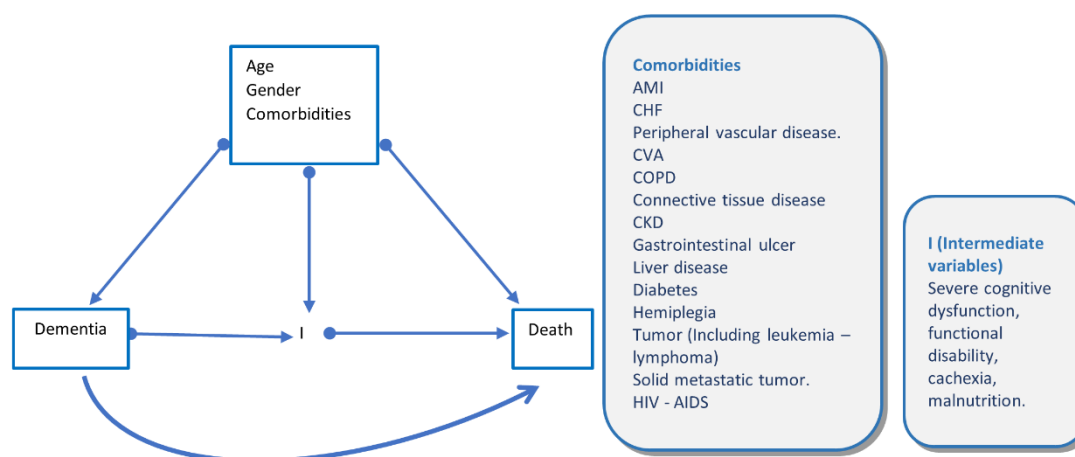


Supplementary figure 1. Graphic representation of the study cohort

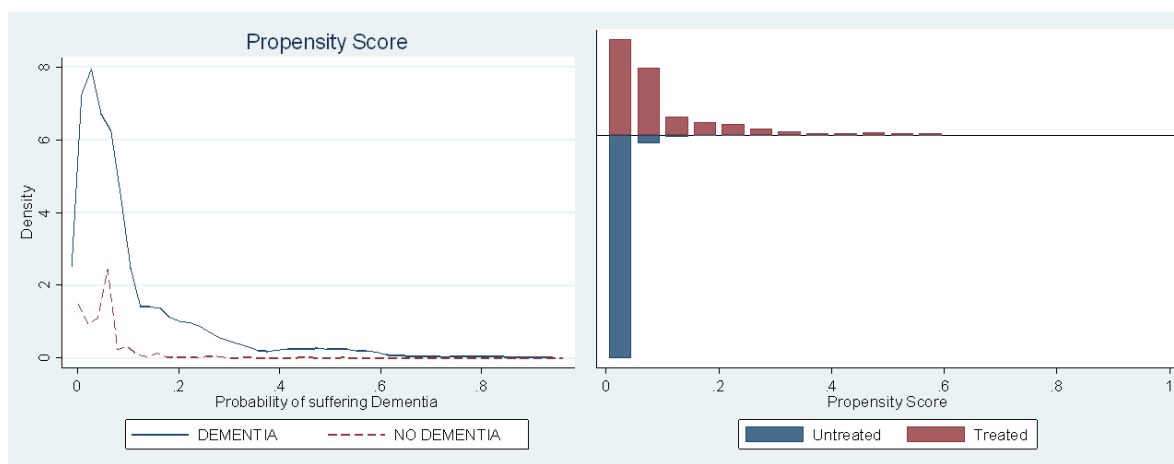


Supplementary figure 2. Directed acyclic graph model of 36-month survival in patients with dementia.

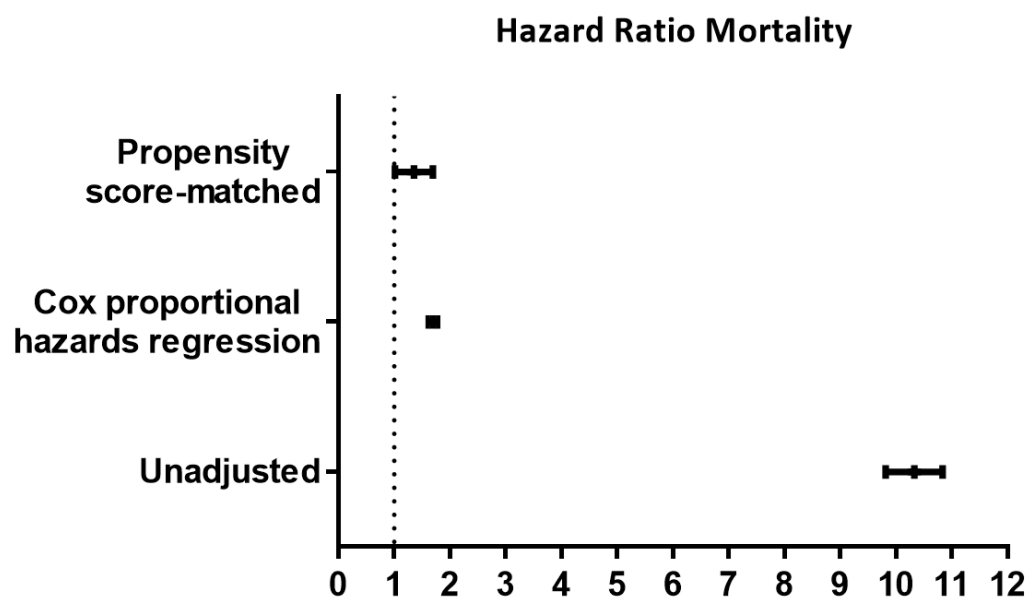


Notes: AMI, Acute myocardial infarction; CVA, cerebrovascular accident; COPD, Chronic pulmonary disease; CKD, Chronical Kidney Disease; CHF, Congestive heart failure; AIDS, acquired immunodeficiency syndrome.

Supplementary figure 3. Common support area for hospitalized patients with and without dementia



Supplementary figure 4. Unadjusted and adjusted Hazard ratio comparison by propensity score and proportional risk model in patients with dementia



Supplementary table 1. Variables definitions

COMORBIDITY	ICD10 CODES	UNIQUE CODE OF HEALTH PROCEDURES AND Y MEDICATION
ACUTE MYOCARDIAL INFARCTION	I21* I22* I252 I255	360100 360101 360102 360102 360200 360201 360202
CONGESTIVE HEART FAILURE	I110 I130 I132 I50* I420 I425 I429 I43*	
PERIPHERAL VASCULAR DISEASE	K551 K558 K559 Z958 Z959 I70* I71* I720 I728 I739 I719 I731 I738 I771 I790 I792	380300 380910 383903 392204 392400 392501 392502 392503 392601 392602 392603 392604 392605 380300 392620
STROKE	G45* G46* I60* I69* I67* I681 I682 I688 I694 I698	395010 380101 380110 380210
DEMENTIA	F00* F01* F02* FO3* G30* G311 F03X F051 F010	*RIVASTIGMINA* *DONEPEZIL* *GALANTAMINA* *MEMANTINE* *DONEPEZIL MEMANTINE* *BUPROPION* *AMANTADINE*
CHRONIC OBSTRUCTIVE PULMONARY DISEASE	J441 I278 I279 J4* J60* J61* J62* J63* J64* J66* J67* J684 J701 J703 J448 J449 J410 J411 J42X J431 J432 J438 J439	*OXIGENO*
CONNECTIVE TISSUE DISEASE	M053 M058 M059 M060 M061 M063 M069 M050 M052 M051 M353 M320 M321 M328 M329 M353 M330 M331 M332 M339 M340 M341 M342 M348 M349 M353	*METOTREXATE* *SULFASALAZINA* *LEFLUNOMIDA* *PENICILAMINA* *RITUXIMAB* *ABATACEPT* *ETANERCEPT* *INFLIXIMAB* *ADALIMUMAB* *CERTOLIZUMAB* *GOLIMUMAB* *TOCILIZUMAB* *TOFACITINIB* *ANAKINRA* *TACROLIMUS* *ACTEMRA*

PEPTIC ULCER		K270	K271	K272	K273	S22224	441100	451301	451600	893904	
		K274	K275	K276	K279	901220	906022	906023	906024	438100	
		K250	K251	K252	K253	440100					
		K254	K255	K256	K257						
		K259	K260	K261	K262						
		K263	K264	K265	K266						
		K267	K269								
MILD DISEASE	LIVER	K709	K702	K703	K717						
		K740	K742	K746	K740						
		K742	K746	K743	K744						
		K745	K730	K731	K738						
		K739	k70*	k73*							
DIABETES MELLITUS TYPE 2		E100	E101	E106	E108	E109	*REPAGLINIDA*		*NATEGLINIDA*		
		E110	E111	E116	E118	E119	*LIRAGLUTIDE*		*EXENATIDE*		
		E120	E121	E126	E128	E29	*LIXIZENATIDE*		*DULAGLUTIDE*		
		E130	E131	E136	E138	E139	*ACARBOSA*		*MIGLITOL*		
		E140	E141	E146	E148	E149	*CLORPROPAMIDA*		*TOLBUTAMIDA*		
		E140					*GLIBENCLAMIDA*		*GLIMEPIRIDA*		
							GLICLAZIDA		*GLIBENS*		
							GLIPIZIDA	*INSULINA*	*INSUMAN*		
							INSULEX	*INSULINA	ASPART*		
							INSULINA	GLULISINA	*INSULINA		
							LISPRO*	*INSULINA	DETEMIR*		
							INSULINA	GLARGINA	*INSULINA		
							DEGLUDEC*	*INSULINA	NPH*		
							METFORMINA		*GEMIGLIPTINA*		
							EMPAGLIFOZINA		*FENFORMINA*		
							SITAGLIPTINA		*VILDAGLIPTINA*		
							LINAGLIPTINA	*ALOGLIPTINA*			
PARAPLEGIA HEMIPLEGIA	—	G81	G041	G820	G821	G822					
CHRONIC DISEASE	KIDNEY	I120	I131	N03*	N05*	Z49*	389500	394300	399501	549002	392701
		N18	N19	N25	N01	N074	392702	394200	549001	549012	549800
		N073	N072				549801	549802	S22220	S22223	549800

		N52	N19	N250	Z940	Z992		
DIABETES		E10*	E11*	E12*	E13*	E14*		
MELLITUS	WITH	H360	H280	G590	G632			
COMPLICATIONS		M142						
ANY	TUMOR	C000	C001	C002	C003	C004		
INCLUDING		C005	C006	C007	C008	C009		
LEUKEMIA	/	C01X	C020	C021	C022			
LYMPHOMA		C023	C024	C029	C030	C031		
(WITHOUT		C039	C040	C041	C049	C050		
MALIGNANT		C051	C052	C059	C060	C061		
NEOPLASIA OF THE		C062	C069	C07X	C080			
SKIN)		C081	C089	C090	C091	C099		
		C101	C102	C103	C104	C883		
		C887	C889	C900	C901	C91*		
		C92*	C93*	C94*	C95*	C96*		
SEVERE	LIVER	K729	K766	K703	K767			
DISEASE		K721						
METASTATIC SOLID		C780	C7*	C8*	C781	C782		
TUMOR		C783	C784	C785	C786	C787		
		C788	C79	C790	C791	C792		
		C793	C794	C795	C796	C797		
		C798						
AIDS		Z114	Z21X	B200	B201	B202	*ZIDOVUDINA*	*LAMIVUDINA*
		B203	B204	B205	B206	B207	*TENOFVIR*	*EMTRICITABINA*
		B208				B209	*DIDANOSINA*	*NEVIRAPINA*
		B210	B211	B212	B217	B219	*EFAVIRENZ*	*ETRAVIRINA*
		B220	F028	R75X	B220	B221	*SAQUINAVIR*	*LOPINAVIR*
		B24*					*ATAZANAVIR*	*INDINAVIR*
							NELFINAVIR	*RALTEGRAVIR*
							ABACAVIR	*ABAMUNE*
							RITONAVIR	*ATAZANAVIR*

Supplementary table 2. Sample size calculation

The sample size was calculated according to the number of deaths required in each of the exposed and unexposed groups; the formula is expressed as follows:
$(Z_{\beta} + Z_{1-\alpha})^2 / (P_A * P_B) * (Log_e^2 \Delta)$

Notes: Z_{β} : is the power; $Z_{1-\alpha}$: significance level; P_A : proportion of exposed patients; P_B : proportion of unexposed patients; Δ_0 : Hazard ratio = 1.5.

Supplementary table 3. Three-year mortality risk of hospitalized patients, COX risk model adjusted values.

Variable	Hazard Ratio (95% CI)	p value
Dementia	1.69 (1.60-1.78)	<0.001
Gender	1.48 (1.43-1.52)	<0.001
Age		<0.001
< 50	4.16 (3.90-4.44)	<0.001
50 - 59	9.33 (8.80-9.88)	<0.001
60 - 69	16.96 (16.04-17.92)	<0.001
70- 79	33.82 (32.00-35.73)	<0.001
80- 89	66.16 (61.94-70.67)	<0.001
90- 99	100.54 (74.98-134.80)	<0.001
Comorbidity		<0.001
CKD	3.45 (3.27-3.64)	<0.001
Diabetes mellitus	1.32 (1.24-1.41)	<0.001
CHF	1.39 (1.30-1.49)	<0.001
Peripheral vascular disease	1.11 (1.03-1.19)	0.006
Cerebrovascular disease	1.41 (1.34-1.48)	<0.001
COPD	1.29(1.25-1.34)	<0.001
Connective tissue disease	1.03 (0.97-1.10)	0.286
Peptic ulcer disease	1.01 (0.96-1.06)	0.567
Mild liver disease	2.13 (1.83-2.47)	<0.001
Metastatic solid tumor	2.48 (2.31-2.66)	<0.001
AIDS	1.40 (1.25-1.57)	<0.001
Diabetes mellitus with complications	0.90 (0.84-0.96)	0.002
Severe liver disease	1.50 (1.23-1.82)	<0.001
Acute myocardial infarction	0.93 (0.89-0.98)	0.015
Any tumor	2.45 (2.21-2.72)	<0.001
Plegia	1.51 (1.12-2.04)	0.006
Region		
Bogotá	1.15 (1.10-1.21)	<0.001
Central	1.26 (1.20-1.31)	<0.001
Oriental	1.16 (1.10-1.22)	<0.001
Pacific	1.07 (1.01-1.13)	0.008
Others state	1.07 (0.87-1.31)	0.476

Notes: CI, confidence interval; COPD, Chronic pulmonary disease; CKD, Chronical Kidney Disease; CHF, Congestive heart failure; AIDS, acquired immunodeficiency syndrome.