Supplementary Material

Table 1. ICD9 and ICD10 codes

	ICD9	ICD10
CABG	36.1x	0210xxx,0211xxx,0212xxx,0213xxx
PCI	00.66, 36.03, 36.06, 36.07, 36.09	0270xxx, 0271xxx,0272xxx,0273xxx, 02C0xxx, 02C1xxx, 02C2xxx, 02C3xxx, 02C4xxx
Excluded Concomitant procedures	35.xx, 37.3x, 37.51, 38.44, 38.45, 39.1x, 39.2x, 39.3x & 37.90	027Fxxx, 027Gxxx, 02NFxxx, 02NGxxx, 02Vxxxx, 027Jxxx, 02NJxxx, 02Nxxxx, 02Rxxxx, 02Qxxxx, 028xxxx, 02Bxxxx, 02Cxxxx (different from 02C0xxx, 02C1xxx, 02C3xxx and 02C4xxx), 02Fxxxx, 02Hxxxx, 02Jxxxx, 02Kxxxx, 02Nxxxx, 02Pxxxx, 02Uxxxx, 02Wxxxx, 02Yxxxx, 025xxxx
STEMI	410.x1	I21.x9, I21.x1, I21.x, I21.4, I21.3, I21.9

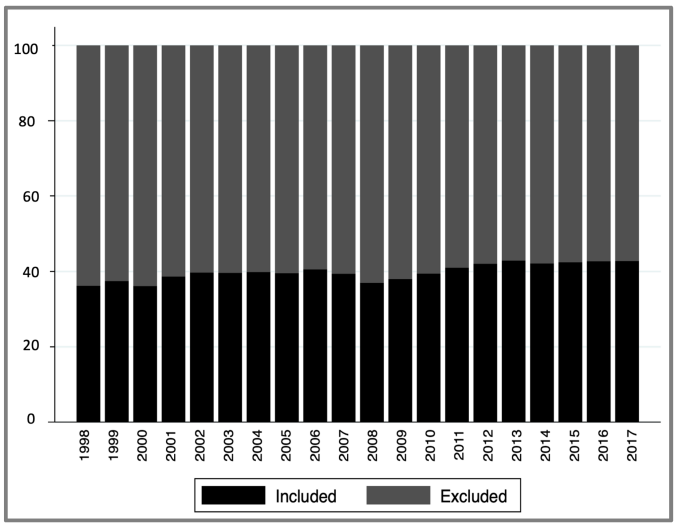
CABG: coronary artery bypass grafting. PCI: percutaneous coronary intervention. AMI: acute myocardial infarction STEMI: ST elevation myocardial infarction

Table 2. Excluded volume and main reasons for exclusion throughout the study period.

	1997-2002	2003-2007	2008-2012	2013-2017	Total	p_{LT}
N	123593	229843	304095	320266	977797	
Acute STEMI	24316 (19.7)	60527 (26.3)	89136 (29.3)	99969 (31.2)	273948 (28)	<0.001
Coding *	7048 (5.7)	16264 (7.1)	28490 (9.4)	36700 (11.5)	88502 (9.1)	<0.001
Concomitant procedures	6319 (5.1)	11559 (5)	12603 (4.1)	15173 (4.7)	45654 (4.7)	<0.001
PCI & CABG in the same episode	447 (0.4)	580 (0.3)	777 (0.3)	781 (0.2)	2585 (0.3)	<0.001
Age <18 or >100	179 (0.1)	193 (0.1)	236 (0.1)	175 (0.1)	783 (0.1)	<0.001
Exclusion	36012 (29.1)	83012 (36.1)	119665 (39.4)	135132 (42.2)	373821 (38.2)	<0.001

PCI: Percutaneous coronary intervention. CABG: Coronary artery bypass grafting. LT: Linear trend. * Including coding errors, consolidated episodes, staged procedures..

Figure 1. Changes in the volume of excluded episodes.



Proportion (%) of excluded episodes per year

Figure 2. Absolute number of procedures per year.

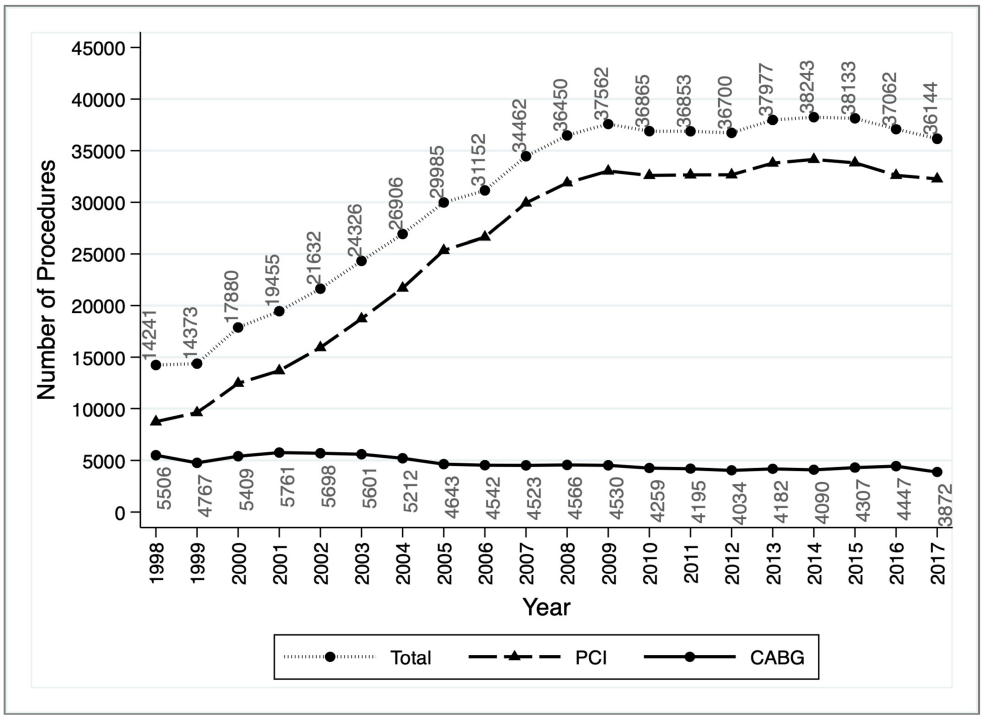
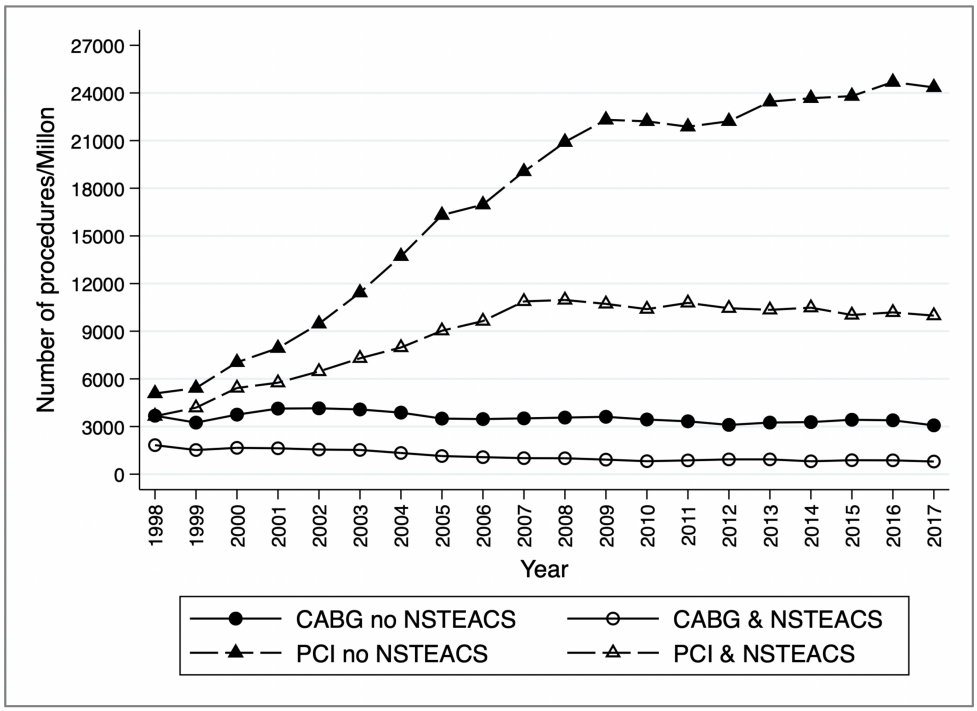


Figure 3. Absolute number of procedures depending on coronary syndrome.



It is observed that the proportion of CABG performed in patients with NSTEACS remained stable throughout the study period. However, there was a more marked increase in the number of PCI procedures in patients without NSTEACS. NSTEACS: non-ST elevation acute coronary syndrome.

Figure 4. Mean modified Charlson´s Index.

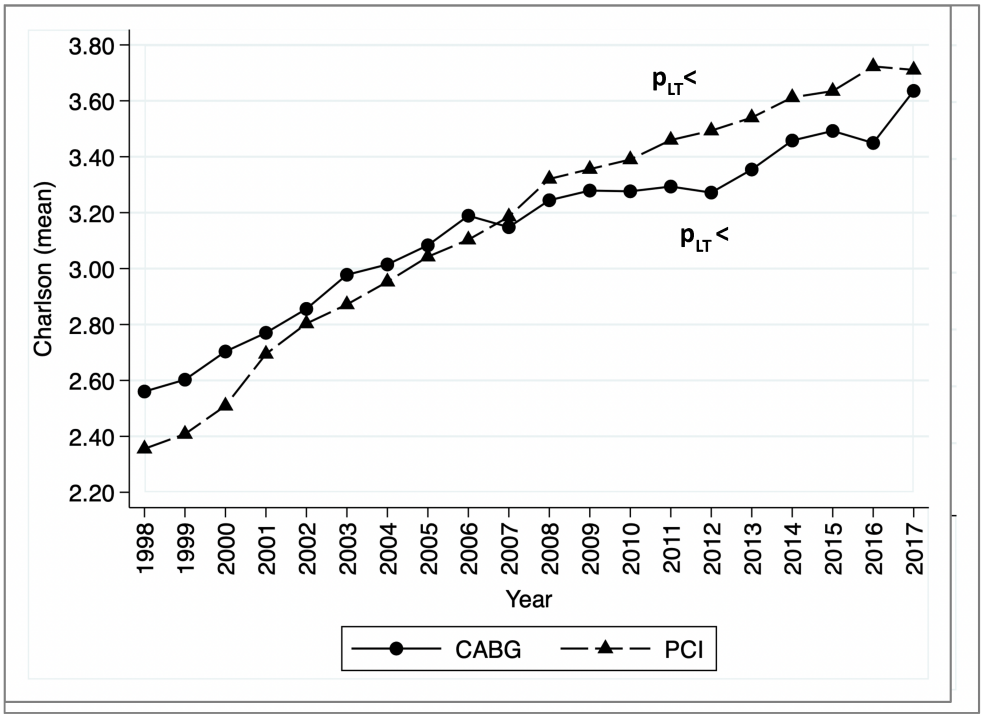
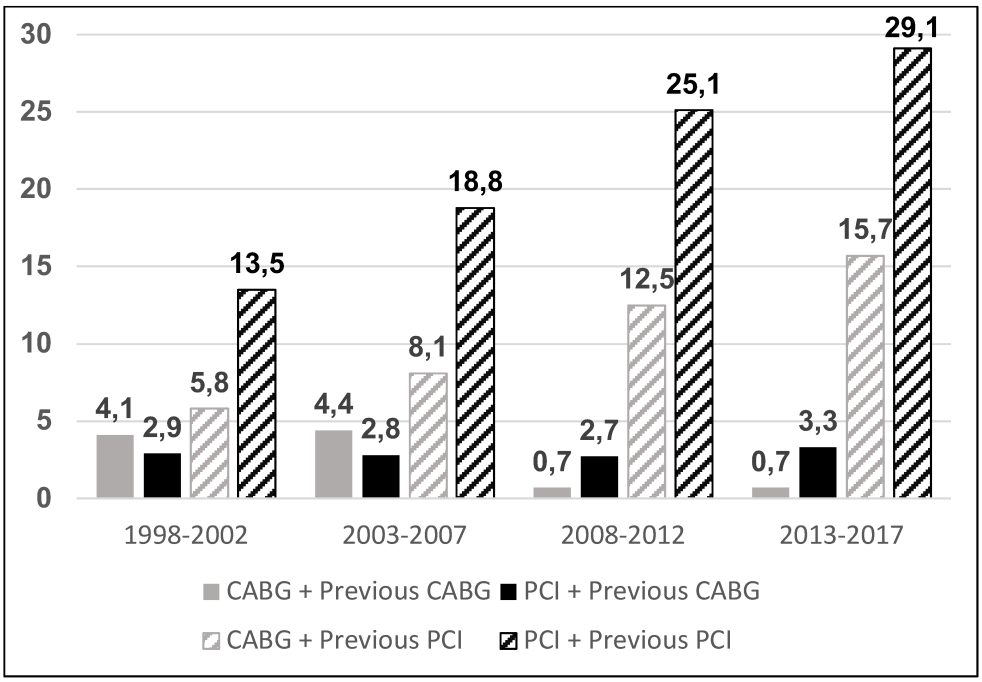


Figure 5. Previous revascularization



Proportion of CABG or PCI patients with previous coronary surgery or percutaneous coronary intervention. The proportion of CABG with previous CABG significantly decreased (4.1% Vs 0.7%, p_{LT}<0.001). Proportion of PCI with previous CABG increased from 2.9% to 3.3% (p_{LT}<0.001). Proportion of CABG patients with previous PCI increased from 5.8% to 15.7% (p_{LT}<0.001). Proportion of PCI patients with previous PCI increased from 13.5% to 29.1% (p_{LT}<0.001).

	CABG					PCI					TOTAL		
	1998-2002	2003-2007	2008-2012	2013-2017	$p_{(TL)}$	1998-2002	2003-2007	2008-2012	2013-2017	$p_{(TL)}$	CABG	PCI	p
n(%)[a]	7494 (36.3)	8799 (18.9)	8509 (13.4)	8805 (13.3)	<0.001	13131 (63.7)	37878 (81.2)	55246 (86.7)	57518 (86.7)	<0.001	33607 (17)	163773 (83)	<0.001
Revascularization 3+ vessels	2118(32.7)	2182(28.4)	2043(27.4)	1835(22.9)	<0.001	-	-	4853 (8.9)	4876 (8.5)	<0.001	8178 (27.6)	9729/112764 (8.6)	<0.001
Number of stents													
<3								44791 (81.1)	51306 (91.2)	<0.001		96097/112764 (85.2)	<0.001
≥3								10455 (18.9)	6212 (10.8)	<0.001		16667/112764(14.8)	<0.001
BMS						60440 (99.5)	91514 (74.8)	67011 (41.2)	34085 (20.7)	<0.001		252715(20.7)	<0.001
DES							34868 (28.5)	89196 (54.8)	115652 (70.2)	<0.001		239716 (47)	<0.001
Bilateral ITA	519 (6.9)	1037 (11.8)	1175 (13.8)	1844 (20.9)	<0.001	-	-	-	-	-	4575 (13.6)	-	-
Off Pump CABG	8496(31.3)	8708(35.5)	7178(33.3)	6984(34.2)	<0.001	-	-	-	-	-	31365(33.5)	-	-

Table 3. Procedural characteristics of PCI (percutaneous coronary intervention) or CABG (Coronary artery bypass grafting) among patients with diabetes. Data is expressed with n(%). $p_{(TL)}$ contrast test for linear trend. *No contrast for linear trend. a. Number of CABG or PCI divided by the volume of revascularizations in diabetic patients. BMS: bare metal stent, DES: drug eluting stent ITA: internal thoracic artery.

Table 4. Variables included in the model to detect factor associated to in-hospital mortality after CABG and PCI.

	Model to detect factors associated for in hospital mortality after CABG	Model to detect factors associated for in hospital mortality after PCI
Variables	Spanish region, Groups of hospitals according to the volume of CABG/year-center, COPD, Age ranges, Sex, Previous MI, NSTEACS on admission, PVD, CVD, Diabetes, CKD, Previous CABG, Previous PCI, Off-Pump, CHF, bilateral ITA, Period of study	CABG on site, Spanish region, Groups of hospitals according to the volume of PCI/year-center, COPD, Age ranges, Sex, Previous MI, NSTEACS on admission, PVD, CVD, Diabetes, CKD, Previous CABG, Previous PCI, BMS, DES, CHF, Period of study
AUC	0.76 (95%CI 0.76;0.77)	0.81 (95%CI 0.81;0.82)

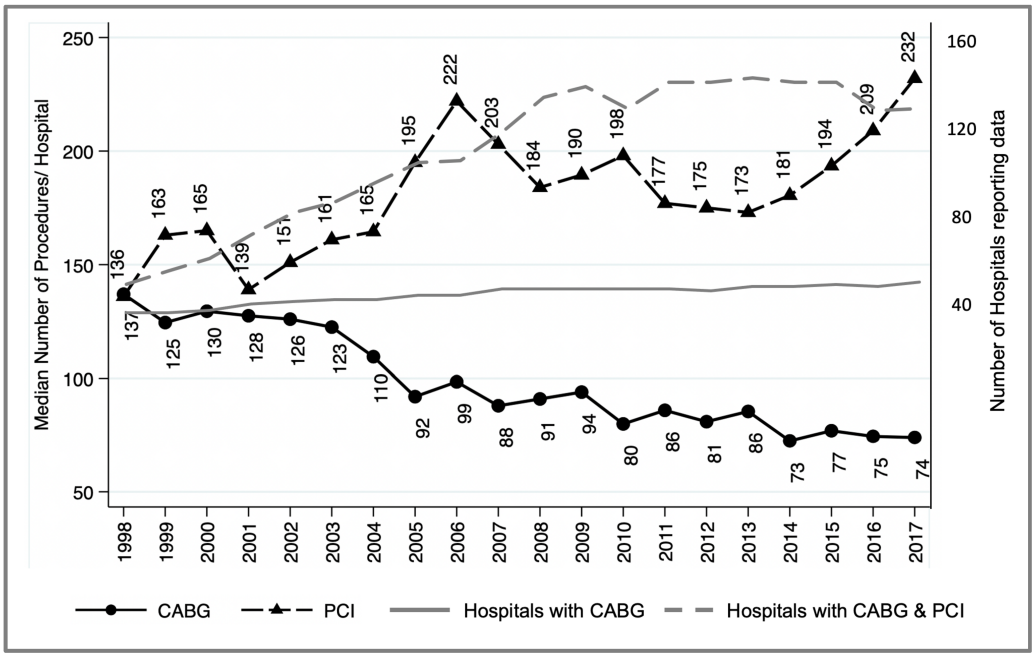
CABG: coronary artery bypass grafting. PCI: percutaneous coronary intervention. COPD: chronic obstructive pulmonary disease. MI: myocardial infarction. NSTEACS: non-ST elevation acute coronary syndrome. PVD: peripheral vascular disease. CHF: congestive heart failure. CVD: cerebrovascular disease. CKD: chronic kidney disease. ITA: Internal thoracic artery. BMS: implantation of bare metal stent. DES: Implantation of drug eluting stent. AUC Area Under the Curve.

Table 5. Variables included in the model to estimate expected in-hospital mortality after CABG and PCI.

	Model to detect factors associated for in hospital mortality after CABG	Model to detect factors associated for in hospital mortality after PCI
Variables	Spanish region, Groups of hospitals according to the volume of CABG/year-center, COPD, Age ranges, Sex, Previous MI, NSTEACS on admission, PVD, CVD, Diabetes, CKD, Previous CABG, Previous PCI, Off-Pump, CHF, bilateral ITA, High blood pressure	CABG on site, Spanish region, Groups of hospitals according to the volume of PCI/year-center, COPD, Age ranges, Sex, Previous MI, NSTEACS on admission, PVD, CVD, Diabetes, CKD, Previous CABG, Previous PCI, BMS, DES, CHF, high blood pressure.
AUC	0.74 (95%CI 0.73;0.75)	0.81 (95%CI 0.81;0.82)

CABG: coronary artery bypass grafting. PCI: percutaneous coronary intervention. COPD: chronic obstructive pulmonary disease. MI: myocardial infarction. NSTEACS: non-ST elevation acute coronary syndrome. PVD: peripheral vascular disease. CHF: congestive heart failure. CVD: cerebrovascular disease. CKD: chronic kidney disease. ITA: Internal thoracic artery. BMS: implantation of bare metal stent. DES: Implantation of drug eluting stent. AUC Area Under the Curve.

Figure 6. Median Number of Procedures/Hospital- year and Number of Hospitals reporting data to MBDS.



Left axis: median procedures/hospital. Right axis: number of hospitals reporting data to MBDS

Table 6. Number of hospitals and volume of procedures/hospital in each study period

	1998-2002	2003-2007	2008-2012	2013-2017	p(LT)
Median number of hospitals/year					
(+)CABG(+)PCI	37(36;40)	44(42;44)	47(47;47)	48(45;50)	<0.001
(-)CABG(+)PCI	25(19;32)	61(54;62)	93(88;95)	96(77;99)	<0.001
Median number of procedures/center-year					
CABG	130.5(102;163)	103(73;145)	89(58;120)	75.5(50.5;114)	<0.001
PCI	148(58;249)	195(77;334)	186(71;340)	198(80.5;350.5)	<0.001
Mortality according to hospital volume of procedures					
Hospital Volume of CABG					
Low Volume	330/3866(8.5)	206/3053(6.8)	87/2406(3.6)	74/2079(3.6)	<0.001
Low-Intermediate	411/5511(7.5)	322/4671(6.9)	170/4272(4)	108/3901(2.8)	<0.001
Low-High	530/7149(7.4)	345/6984(4.9)	226/6446(3.5)	172/5694(3)	<0.001
High	469/9156(5.1)	352/9524(3.7)	265/8376(3.2)	222/8708(2.6)	<0.001
Hospital Volume of PCI					
Low Volume	18/3259(0.6)	31/6004(0.5)	45/7613(0.6)	65/8052(0.8)	0.04
Low-Intermediate	67/8160(0.8)	155/17226(0.9)	204/21446(1)	264/23081(1.1)	0.003
Low-High	172/15950(1.1)	426/33545(1.3)	682/45088(1.5)	758/47881(1.6)	<0.001
High	296/30869(1)	745/61896(1.2)	1225/84334(1.5)	1140/80415(1.4)	<0.001

Table 3. Data are shown as n(%) or median and IQR. CABG: “Coronary Artery Bypass Grafting”. PCI: “Percutaneous Coronary Intervention. (+)CABG(+)PCI: Hospitals with CABG and PCI: (-)CABG(+)PCI. Hospitals without CABG but with PCI.