Supplementary Table 1. PubMed IDs for sex effects on outcome risk reported in Figure 2			
Index Condition – Outcome Pair	**First Author**	**Publication Year**	**PubMed ID**
CHF – Mortality	Bouvy[1]	2003	12748212
	Adlam[2]	2005	15769783
	Alehagen[3]	2005	15820281
	Pocock[4]	2006	16219658
	Levy[5]	2006	16534009
	Rassi[6]	2006	16928995
	Miura[7]	2008	18296827
	O'Connor[8]	2012	22114101
Revascularization – Mortality	Hannan[9]	1992	1433740
	O'Connor[10]	1992	1591830
	Wong[11]	1999	10519495
	Moscucci[12]	2001	11457742
	Zaroff[13]	2002	12088769
	Wu[14]	2004	14752428
	Wu[15]	2006	16458151
	Hannan[16]	2006	16458152
	Mehta[17]	2008	18250266
	de Mulder[18]	2011	21345854
	Hamburger[19]	2009	19681116
ACS – Mortality	Grzybowski[20]	2000	11265730
	Zaroff[13]	2002	12088769
	Williams[21]	2006	16498154
	de Boer[22]	2011	21392604
	Boersma[23]	2000	10840005
	Mehran[24]	2010	20513595
	Roe[25]	2011	22093204

Supplementary Table 2. Study- and model-level characteristics of CVD-related clinical prediction models including sex effects

PubMed ID	First Author	Pub. Year	Inclusion of Sex	Effect of Female Sex	Population	Outcome(s)	Covariates	Cohort Sample Size	% Female in Cohort	No. of Events	Mean Age (SD)	Follow-Up Duration
CAD – MORTALITY												
1433740	Hannan[9]	1992	Covariate	Harmful	Patients undergoing percutaneous transluminal coronary angioplasty	In-hospital mortality	Shock, Hemodynacute myocardial infarction c instability, Sex, LVEF	5827	29.6%	37	NR	Hospitalization period
1591830	O'Connor[10]	1992	Covariate	Harmful	Patients undergoing isolated coronary artery bypass grafting	In-hospital mortality	Prior CABG, Priority at Surgery, Comorbidities, Sex, Left Ventricular End Diastolic Pressure, Ejection Fraction Score, Age, Bovine Serum Albumin	3055	NR	132	NR	Hospitalization period
10519495	Wong[11]	1999	Covariate	Harmful	Patients undergoing CABG surgery who received fast-track cardiac anesthesia (FTCA) technique, consisting of low-dose fentanyl (10-15 mg/kg) and propofol infusion	Mortality	Left Ventricle Grade 4, Emergency Surgery, Sex	885	24%	23	60.8 (11.3)	30 days
10840005	Boersma[23]	2000	Covariate	Protective	Patients presenting within 24 hours of an episode if ischemic chest pain (>10 min) either transient ST-segment elevation (>0.5 mm), transient or persistent ST-segment depression (>0.5 mm), T-wave inversion (>1.0 mm), or elevation of creatinine kinase	Mortality	Age, Signs of Heart Failure (Rales), ST-Depression on EKG, HR, SBP, CCS Class, Sex	9461	35%	342	64 (NR)	30 days
11265730	Grzybowski[20]	2000	Covariate	Harmful	Patients with suspected AMI transported by emergency medical services	Mortality	Age, Respiratory Rate, SBP, Sex	244	39.8%	36	66.6 (14.8)	7 days
11457742	Moscucci[12]	2001	Covariate	Harmful	Patients undergoing percutaneous coronary interventions	In-hospital mortality	Shock, Creatinine, Cardiac Arrest, MI, Age, Sex, Thrombus, LVEF, PVD, Number of Diseased Vessels	10729	31.8%	168	62.6 (11.9)	Hospitalization period

11686666	Marchioli[26]	2001	Stratified	NA	Recent MI and without unfavorable short-term prognosis	Mortality	Age, Left Ventricular Dysfunction, Leukocytes, Claudication, Cholesterol, Fibrinogen, Smoking, HR, Electrical Instability, Diabetes, Arterial HTN, Residual Myocardial Ischemia	11248	14.6%	M: 904 F: 167	59 (11)	4 years
12088769	Zaroff[13]	2002	Covariate	Harmful	Patients with acute MI who underwent CABG	In-hospital mortality	Killip Class, Age, Previous CABG, Q-wave vs. non-Q-wave Acute MI, Sex, CHF, Diabetes, Weight, Previous Acute MI	71774	29.6%	3948	NR	Hospitalization period
14752428	Wu[14]	2004	Covariate	Harmful	Patients undergoing coronary artery bypass grafting (CABG)	Operative mortality	Previous Cardiac Surgery, Renal Insufficiency, Chronic Lung Disease, Urgency, LVEF, Cerebrovascular Disease, History of PVD, Age, Canadian Cardiovascular Society Class, Sex, Left Main Stenosis, NYHA Class	11063	24%	255	65 (11)	Hospitalization period
15135693	Elhendy[27]	2004	Covariate	Protective	Patients with known or suspected CAD	All-cause mortality	Exercise Wall Motion Score Index, Age, Sex, Metabolic Equivalents	2840	42%	151	62 (12)	4 years (median: 3 years)
16098306	Cortigiani[28]	2005	Covariate	Protective	Patients with known or suspected coronary artery disease who underwent dipyridamole stress echocardiography	All-cause mortality	Age, Peak Wall Motion Score Index, Diabetes, Sex	3969	32%	324	60 (NR)	median: 48 months
16210253	Clayton[29]	2005	Covariate	Protective	Patients with stable symptomatic angina requiring treatment, preserved left ventricular function, and either previous MI or proved angiographic CAD	Mortality	Diabetes, Age, Smoking, QT Interval, Lipid Lowering Therapy, Angina, LVEF, Sex, SBP, Previous Angiography, Previous MI, Glucose, Angina Medication, Creatinine, WBC	7311	20.6%	569	63.5 (9.2)	mean: 4.9 years
16427855	Rexius[30]	2006	Covariate	Protective	Patients accepted for elective coronary artery bypass grafting (CABG) awaiting surgery	Pre-surgical mortality	UA, Left Main Stenosis, LVEF, Perioperative Risk, Aortic Valve Disease Requiring Surgery, Sex	5167	24%	42	66 (9)	median: 47 days
16458151	Wu[15]	2006	Covariate	Harmful	Patients in population-based percutaneous coronary intervention (PCI) registry	In-hospital mortality	Hemodyn Acute MI C Static, MI with Stent Thrombosis, Renal Failure, CHF, LVEF, Peripheral Arterial	46090	32.1%	321	NR	Hospitalization period

							Disease, Sex, Age					
16458152	Hannan[16]	2006	Covariate	Harmful	Patients who underwent isolated CABG surgery	In-hospital mortality	MI, Hemodynacute MI C Static, Renal Failure, LVEF, Previous Open Heart Operations, Sex, Extensively Calcified Ascending Aorta, Peripheral Arterial Disease, COPD, Age	16120	NR	366	NR	Hospitalization period
16498154	Williams[21]	2006	Covariate	Harmful	Patients with acute MI	Mortality	Killip Class, ST Depression, SBP, Sex, Age, Creatinine, QRS Duration, MI Location	809	60%	87	70.7 (NR)	30 days
17223413	Anderson[31]	2007	Covariate	Protective	Patients who underwent coronary angiography	All-cause mortality	WBC, Age, Hematocrit, MCV, Red Cell Distribution, MCH, Platelet Count, Sex	17787	38%	709	61.1 (14.7)	30 days (mean: 4.9 years)
17223413	Anderson[31]	2007	Covariate	Protective	Patients who underwent coronary angiography	All-cause mortality	Age, Red Cell Distribution, MCH, Hematocrit, WBC, Platelet Count, MCV, Sex	17787	38%	709	61.1 (14.7)	30 days (mean: 4.9 years)
17499864	Yap[32]	2008	Covariate	Protective	Patients with recent documented acute MI with at least one high-risk feature	All-cause mortality	Age, Diabetes, HR, HTN, NYHA Class, Non-Q Wave Infarct on EKG, Previous MI or Angina, Sex, SBP	2707	21%	480	NR	2 years
17499864	Yap[32]	2008	Covariate	Protective	Patients with recent documented acute MI with at least one high-risk feature	Arrhythmic cardiac mortality	Age, Diabetes, HR, HTN, NYHA Class, Non-Q Wave Infarct on EKG, Previous MI or Angina, Sex, SBP	2707	21%	480	NR	2 years
17499864	Yap[32]	2008	Covariate	Protective	Patients with recent documented acute MI with at least one high-risk feature	Non-arrhythmic cardiac mortality	Age, Diabetes, HR, HTN, NYHA Class, Non-Q Wave Infarct on EKG, Previous MI or Angina, Sex, SBP	2707	21%	480	NR	2 years
17550750	Singh[33]	2007	Covariate	Harmful	Patients undergoing PCI	Mortality	Age, LVEF, Creatinine, Shock, MI, CHF, Peripheral Artery Disease, Diabetes, Sex	7457	31%	136	66.9 (12.1)	Hospitalization period
18250266	Mehta[17]	2008	Covariate	Harmful	Patients with and without cardiogenic shock undergoing CABG	Post-operative in-hospital mortality	CABG and Ventricular Septal Repair, Creatinine, Operative Status, Prior Cardiac Surgery, CABG and Aortic Valve, CABG and Mitral Valve, Immunosuppressive Therapy, Sex, LVEF, IABP, Preoperative Resuscitation, MI, Age	708593	28.9%	24092	NR	Hospitalization period
19559824	Shahian[34]	2009	Covariate	Harmful	Patients who underwent single aortic or mitral valve surgical	Mortality	BSA, Dialysis, Priority Status, Reoperation, Endocarditis, Shock,	101661	35.5%	6919	NR	30 days

					procedures combined with coronary artery bypass grafting		Sex x BSA, MI, Creatinine, CHF and NYHA IV, IABP or Inotropes, Sex, Immunosuppressive Treatment, Diabetes, PVD, Tricuspid Insufficiency, CHF without NYHA IV, CVD and Prior CVA, AF, CLD Function, MVR, Number of Diseased Vessels, Left Main Disease, UA, Mitral Stenosis, Age, HTN, Race, Mitral Valve Repair					
19681116	Hamburger[19]	2009	Covariate	Protective	Population-based registry of patients who underwent PCI in British Columbia	30-day mortality	STEMI, Critical Preprocedural State, LVEF, ACS, Left Main Disease, Emergency, NYHA Class, Dialysis or Creatinine, Triple-Vessel Disease, Age, Sex	26350	26.8%	500	64.3 (11.5)	30 days
20513595	Mehran[24]	2010	Covariate	Protective	Patients with ACS including NSTEMI, STEMI, and biomarker negative ACS	Mortality	Diabetes, Biomarkers, Smoking, Age, STEMI, Previous MI, WBC, Creatinine, Sex, UFH/Enox + GPI, Glycoprotein Inhibitor, Bivalirudin, Hemoglobin	17421	28.7%	660	62.1 (11.7)	1 year
20923988	Singh[35]	2010	Covariate	Protective	Patients who underwent PCI	All-cause mortality	Age, BMI, CAD Comorbidity Index, LVEF, History of CHF, MEDS, Troponin T, Ventricular Arrhythmia, Prior MI, Smoking Status, Cardiogenic Shock, Prior CABG, Sex, Stable Angina, Procedural Failure, Prior PCI, Three-Vessel Disease, UA, Stent Use, Glycoprotein Use, Cholesterol	9165	29%	1243	66.8 (12.2)	Hospitalization period
21345854	De Mulder[18]	2011	Covariate	Harmful	Patients in the Euro Heart Registry who underwent percutaneous intervention for different indications	In-hospital mortality	Hemodynamic Instability, Indication for PCI, Age, Left Main Disease, Diabetes, BMI, Prior Stroke, Valve Disease, Bifurication Lesion, Sex, Proximal Left Anterior Descending	23032	26%	339	64 (NR)	Hospitalization period

							Diseased, TIMI, Type-C Lesion, Smoking, Number of Diseased Vessels, Prior CABG					
21392604	de Boer[22]	2011	Covariate	Harmful	Patients who participated in 22 randomized clinical trials of PCI vs. fibrinolysis	All-cause mortality	Age, HR, SBP, Anterior Infarct Location, Prior MI, Time to Treatment, Diabetes, Sex	5421	24.4%	363	NR	30 days
22093204	Roe[25]	2011	Covariate	Protective	NSTEMI	Long-term mortality	Signs of Heart Failure on Presentation, Prior Heart Failure, Prior Stroke, Age, Diabetes, Race, Sex, Prior PAD, Smoking, Hematocrit, Creatinine, Prior MI, HR, SBP, Weight, EKG Changes, Prior CABG, Troponin Ratio, HTN, Prior PCI, Family History of CAD, Hyperlipidemia	33640	47.7%	NR	NR	median: 453 days
CHF – MORTALITY												
12748212	Bouvy[1]	2003	Covariate	Protective	Admission due to heart failure	Mortality	History of Renal Insufficiency, Beta Blockers, Ankle Edema, History of Diabetes, BP, Sex, Age, Weight	152	34.2%	51	69.7 (NR)	18 months
15769783	Adlam[2]	2005	Covariate	Protective	Primary care population prescribed loop diuretics for CHF	All-cause mortality	Age, BNP, CVA, Diabetes, EKG, Sex	528	59%	190	75 (10)	5 years (mean: 6.4 years)
15820281	Alehagen[3]	2005	Covariate	Protective	Patients who attended primary care because of symptoms and/or signs that might be attributed to heart failure	Cardiovascular mortality	NYHA Class, Age, Sex, Diabetes	510	47.8%	71	73 (6)	6 years
16219658	Pocock[4]	2006	Covariate	Protective	Patients with CHF	All-cause mortality	Diabetes, Age, NYHA Class, Prior Heart Failure Hospitalization, Pulmonary Edema, Smoking, CHF, Cardiomegaly, Bundle Branch Block, Previous MI, Dependent Edema, Pulmonary Crackles, Mitral Regurgitation, LVEF, Dyspnea, AF, DBP, HR, BMI, Candesartan vs. Placebo, Sex	7599	68.4%	1831	65.5 (10.9)	median: 3.17 years
16534009	Levy[5]	2006	Covariate	Protective	Patients with heart failure (ejection fraction < 30% and NYHA functional class IIIB to IV)	Mortality	Cholesterol, NYHA Class, Allopurinol Use, Ischemic Etiology, Hemoglobin, Diuretic Dose, Age, Sex, Uric	1125	24%	395	65 (11)	1 year

							Acid, Sodium, LVEF, Lymphocytes, SBP, Statin Use					
16928995	Rassi[6]	2006	Covariate	Protective	Patients with Chagas heart disease	Mortality	NYHA Class, Cardiomegaly, Wall Motion Abnormality, Nonsustained VT, Low QRS Voltage, Sex	424	41.7%	130	47 (11)	10 years (mean: 7.9 years)
18296827	Miura[7]	2008	Covariate	Protective	Patients with idiopathic dilated cardiomyopathy (IDC)	All-cause mortality	Sex, Left Ventricular Diameter Index, Age, NYHA Class, LVEF	1554	27.4%	420	NR	5 years
22114101	O'Connor[8]	2012	Covariate	Protective	Patients enrolled in the HF-ACTION study with a NYHF class II-IV, LVEF < 35%	All-cause mortality	Serum Urea Nitrogen, Exercise Duration on CPX Test, BMI, Sex	387	28%	387	59 (NR)	median: 2.5 years
CAD – MORBIDITY												
1739359	Hubbard[36]	1992	Covariate	Protective	Patients with symptomatic CAD who underwent exercise equilibrium radionuclide angiography and coronary angiography within 6 months	Three vessel or left main CAD	Previous MI, Sex, Diabetes, Angina, Age	680	27.6%	215	58.6 (NR)	NA (case control)
9217616	Morise[37]	1997	Covariate	Protective	Patients with suspected CAD and normal resting EKGs who presented for exercise testing	Severe CAD (presence of $\geq$ 2 vessel with $\geq$ 70% luminal diameter narrowing)	Family History, Hyperlipidemia, Obesity, HTN, Smoking, BMI, Diabetes, Symptoms, Estrogen Status, Age, Sex	915	48%	170	54 (1)	Diagnosis
9313022	Selker[38]	1997	Covariate	Protective	Patients who had acute MI and ST-segment elevation on EKG	Thrombolysis-Related Major Bleed Component	Sex, Age, History of HTN, HR with SBP, Thrombolytic Agents, SBP	2525	NR	NR	NR	30 days
10519495	Wong[11]	1999	Covariate	Harmful	Patients undergoing CABG surgery who received fast-track cardiac anesthesia (FTCA) technique, consisting of low-dose fentanyl (10-15 mg/kg) and propofol infusion	Delayed extubation (defined a priori as extubation time > 10 hours)	Postoperative Excess Bleeding, IABP, Age, Sex, Atrial Arrhythmia, Inotropes	885	24%	221	60.8 (11.3)	10 hours (median: 7 hours)
10519495	Wong[11]	1999	Covariate	Harmful	Patients undergoing CABG surgery who received fast-track cardiac anesthesia (FTCA) technique, consisting of low-dose fentanyl (10-15 mg/kg) and propofol infusion	Prolonged ICU length of stay (defined as stays > 48 hours)	IABP, Renal Insufficiency, Age, Atrial Arrhythmia, Inotropes, Sex, MI, Postoperative Excessive Bleeding	885	24%	221	60.8 (11.3)	48 hours (mean: 1 day)
12473877	West[39]	2002	Covariate	Protective	Patients in the LIPID study with previous ACS and baseline total cholesterol of 4-7 mmol/l	Non-hemorrhagic stroke	Age, AF, Stroke at Baseline, History of Diabetes, SBP, Smoking, BMI, Sex,	9014	16.8%	388	NR	mean: 6 years

					(randomly assigned to receive either 40 mg of pravastatin or placebo)		History of HTN, Creatinine Clearance, HDL Cholesterol, Triglycerides, Anterior MI, Total Cholesterol, UA, Pravastatin					
12902080	Charlesworth[40]	2003	Covariate	Harmful	Patients undergoing isolated CABG surgery with or without extracorporeal circulation	Perioperative stroke (a new focal neurologic deficit that appears and is still at least partially evident more than 24 hours after its onset, occurring during or after the CABG procedure and established before discharge)	Age, Emergency Priority, Vascular Disease, Renal Failure or Creatinine, Diabetes, LVEF < 40%, Urgent Priority, Sex	33062	28.3%	532	NR	Hospitalization period
15312862	Sadanandan[41]	2004	Covariate	Protective	Patients with UA and NSTEMI	In-hospital CABG	Troponin, Prior Angina, ST-Segment Deviation, History of PAD, Sex, History of CABG	2219	34.4%	362	61.3 (11.7)	Hospitalization period
16159846	Fowler[42]	2005	Covariate	Harmful	Patients in the Society of Thoracic Surgeons National Cardiac Database who had CABG (isolated or in combination)	Major infection (mediastinitis, thoracotomy or vein harvest site infection, or septicemia)	BMI, Dialysis, Shock, Age, Other Procedures, Immunosuppressive Therapy, Valve Surgery, Renal Failure, Diabetes, Chronic Lung Disease, CHF, Other Cardiac Surgery, PVD, LVEF, Previous CABG, NYHA Class, Previous MI, Anticoagulants, CVA, Smoking, Valvular Insufficiency, HTN, Cerebrovascular Disease, Race, Sex, Hypercholesterolemia, Cardiac Device	165715	NR	11633	NR	Hospitalization period
16210253	Clayton[29]	2005	Covariate	Protective	Patients with stable symptomatic angina requiring treatment, preserved left ventricular function, and either previous MI or proved angiographic CAD	MI	Diabetes, Previous Angiography, Previous Stroke, Age, Smoking, Sex, Angina, Angina Medication, Previous MI, LVEF, Lipid Lowering Therapy, SBP, QT Interval, Creatinine, Glucose, WBC	7311	20.6%	495	63.5 (9.2)	mean: 4.9 years
16210253	Clayton[29]	2005	Covariate	Protective	Patients with stable symptomatic angina requiring treatment, preserved left ventricular function, and either previous MI or proved	Stroke	Previous Stroke, Smoking, Diabetes, Age, SBP, QT Interval, LVEF, Angina Medication, Angina, Previous Angiography,	7311	20.6%	495	63.5 (9.2)	mean: 4.9 years

					angiographic CAD		Lipid Lowering Therapy, Glucose, Creatinine, Previous MI, WBC, Sex					
19243970	Antunes[43]	2009	Covariate	Harmful	Patients undergoing CABG	In-hospital CVA	Cerebrovascular Disease, PVD, Left Ventricular Dysfunction, Non-Elective Surgery, Sex, Age	4567	11.8%	114	60.7 (9.3)	Hospitalization period
19332461	Subherwal[44]	2009	Covariate	Harmful	High-risk patients with non-ST-elevation acute coronary syndromes	In-hospital major bleed	Hematocrit, Sex, SBP, CHF, PVD, Diabetes, Creatinine Clearance, HR	71277	39.8%	6700	NR	Hospitalization period
20031896	Mehta[45]	2009	Covariate	Protective	Patients undergoing CABG	Reoperation for bleeding in patients undergoing CABG	Dialysis, Urgency of Surgery, BSA, Sex, Glycoprotein, Age, Creatinine, PVD, Thienopyridines, Immunosuppressive Therapy, Previous Cardiovascular Interventions, IABP, Shock, PCI, Diabetes, Race, 3-Vessel CAD, Cerebrovascular Disease, Chronic Lung Disease, CHF	422949	27.1%	10122	NR	Hospitalization period
20513595	Mehran[24]	2010	Covariate	Harmful	Patients with ACS including NSTEMI, STEMI, and biomarker negative ACS	Non-coronary artery bypass graft surgery (CABG)-related major bleeding	Sex, Anemia, STEMI, NSTEMI-Raised Biomarkers, Age, WBC, Creatinine, Biomarker Negative ACS, UFH/Enox + GPI, Glycoprotein Inhibitor, Bivalirudin	17421	28.7%	744	62.1 (11.7)	30 days
21700252	Mehran[46]	2011	Covariate	Harmful	Patients undergoing PCI from 3 randomized trials of bivalirudin vs. heparin plus glycoprotein IIb/IIIa inhibitors (REPLACE-2, ACUITY, HORIZONS-AMI)	30 day risk of TIMI Bleed	STEMI, Sex, Smoking, NSTEMI-Raised Biomarkers, Bivalirudin + Glycoprotein Inhibitor, Age, Creatinine, WBC, Normal Biomarkers, Heparin/Enoxaparin + Glycoprotein Inhibitor, Bivalirudin	17034	25.6%	267	62.2 (11.4)	30 days
22064650	Podolecki[47]	2012	Covariate	Harmful	Patients with acute MI who were screened with coronary angiography and underwent PCI	Stroke (ischemic or hemorrhagic)	Previous Stroke/TIA, Sex, GFR, Nephropathy, Prior Acute MI, Smoking	2520	30%	52	62 (NR)	median: 25.5 months
CAD – MORBIDITY AND MORTALITY												
8890808	Magovern[48]	1996	Covariate	Harmful	Patients who underwent CABG surgery	Postoperative morbidity and mortality	Shock, Urgency of Operation, Age, Catheterization-Induced Coronary	1567	30%	NR	65 (9)	Hospitalization period

							Closure, Cardiomegaly, LVEF, CHF, Renal Insufficiency, Diabetes, Renal Dysfunction, Anemia, BUN, PVD, Cerebrovascular Disease, Sex, BMI, Atrial Arrhythmia, COPD, Reoperation, Albumin					
8890808	Boersma[23]	2000	Covariate	Harmful	Patients presenting within 24 hours of an episode of ischemic chest pain (>10 minutes) either transient ST-segment elevation (>0.5 mm), transient or persistent ST-segment depression (>0.5 mm), T-wave inversion (>1.0 mm), or elevation of creatinine kinase	Composite of death or myocardial (re)infarction	Age, Signs of Heart Failure (Rales), Worst CCS-Class, Sex, ST-Depression on EKG, HR, SBP	9461	35%	1417	64 (NR)	30 days
11728352	Fortescue[49]	2001	Covariate	Harmful	Patients who underwent coronary artery bypass grafting and not involving valvular or other surgeries	In-hospital major adverse event (death, renal failure, reinfarction, cardiac arrest, CVA, or coma)	Creatinine, Age, Shock, Emergent Operation, Prior CABG, LVEF, History of Liver Disease, History of Stroke or TIA, History of COPD, HTN, Urgent Operation	6237	28.1%	408	64.8 (10.6)	Hospitalization period
15135693	Elhendy[27]	2004	Covariate	Protective	Patients with known or suspected CAD	Cardiac events	Exercise Wall Motion Score Index, Chest Pain, Metabolic Equivalents, Sex	2840	42%	143	62 (12)	4 years (median: 3 years)
16159983	Grayson[50]	2006	Covariate	Harmful	Patients undergoing adult percutaneous coronary intervention (PCI)	In-hospital MACE (in-hospital deaths, Q wave MI, emergency CABG surgery, and CVA)	Shock, Left Main Stem Lesion Treated, Age, Emergent PCI, Graft Lesion Treated, Sex, Cerebrovascular Disease, Urgent PCI	9914	29.1%	129	NR	Hospitalization period
16210253	Clayton[29]	2005	Covariate	Protective	Patients with stable symptomatic angina requiring treatment, preserved left ventricular function, and either previous MI or proved angiographic CAD	Death, MI or stroke	Diabetes, Smoking, Age, Previous Stroke, Previous Angiography, QT Interval, Angina, Lipid Lowering Therapy, SBP, LVEF, Sex, Previous MI, Angina Medication, Creatinine, Glucose, WBC	7311	20.6%	1063	63.5 (9.2)	mean: 4.9 years
17443658	Zhang[51]	2007	Covariate	Protective	Patients with STEMI who did not have emergency intervention therapy within 24hours of onset	Cardiogenic shock within 72 hours after admission	MI, Family History of CAD, Multivessel Disease, BMI, Previous MI, Results of Thrombolytic Therapy, Sex, Age, Killip Class	2077	28.3%	184	76.0 (7.8)	72 hours

17550750	Singh[33]	2007	Covariate	Harmful	Patients undergoing percutaneous coronary intervention	MACE (in hospital death, Q wave MI, urgent or emergent CABG, cerebrovascular event)	LVEF, Creatinine, Age, Cardiogenic Shock, MI, PAD, CHF, Diabetes, Sex	7457	31%	291	66.9 (12.1)	Hospitalization period
19936453	Santos[52]	2009	Covariate	Protective	Patients admitted to the emergency department with non-ST-segment elevation acute coronary syndrome	Death or (re)infarction risk within 30 days	Biomarkers, Prior Stroke, Diabetes, Creatinine, Sex, Age, Previous Use of ACE Inhibitor	1027	42.6%	54	61.6 (0.35)	30 days
20630456	Chen[53]	2010	Covariate	Harmful	Patients with unprotected left main stenosis who underwent percutaneous coronary intervention (patients from DISTAL study)	MACE	Acute MI, Shock, Previous MI, IABP, Ultrasound Guidance, Stent, Biomarkers, Incomplete Revascularization, Diabetes, Cholesterol, PVD, LVEF, Age, HTN, Smoking, Creatinine, Culotte, Sex, Non-Left Main Total Occlusion Failure, Statin Use, Stroke, GI Bleeding	337	21.1%	NR	66.6 (10.5)	MACE
20923988	Singh[35]	2010	Covariate	Protective	Patients who underwent percutaneous coronary intervention	Mortality or MI	LVEF, Age, BMI, CAD Comorbidity Index, Shock, Troponin, Prior CABG, CHF, Ventricular Arrhythmia, Three-Vessel Disease, MI, Smoking Status, Stable Angina, Prior PCI, Sex, UA, Stent Use, Procedural Failure, Glycoprotein Use, Cholesterol, MEDS	9165	29%	1939	66.8 (12.2)	Hospitalization period
POPULATION SAMPLE – MORBIDITY												
1985385	Anderson[54]	1991	Covariate	NA[a]	Members of the Framingham Heart Study and Framingham Offspring Study cohorts, who ranged in age from 30 to 74 years who were free of cardiovascular disease and cancer	Myocardial infarction (including silent and unrecognized MI)	Age x Sex, Diabetes x Sex, Diabetes, LVH x Sex, Smoking Status, Cholesterol, SBP, Age	5573	NR	NR	NR	12 years
1985385	Anderson[54]	1991	Covariate	NA[b]	Members of the Framingham Heart Study and Framingham Offspring Study cohorts, who ranged in age from 30 to 74 years who were free of cardiovascular disease and cancer	Stroke, including transient ischemia	Sex, Cholesterol, LVH, Diabetes x Sex, Diabetes, Smoking, Age, SBP	5573	NR	NR	NR	12 years
1985385	Anderson[54]	1991	Covariate	NA[c]	Members of the	Cardiovascular	Age x Sex, Diabetes x	5573	NR	NR	NR	12 years

					Framingham Heart Study and Framingham Offspring Study cohorts, who ranged in age from 30 to 74 years who were free of cardiovascular disease and cancer	disease	Sex, Diabetes, LVH, Smoking, Cholesterol, Sex, SBP, Age					
2003301	Wolf[55]	1991	Stratified	NA	Subjects in the Framingham Cohort aged 55-84 years and free of stroke	Incident stroke	LVH, Age, AF, CVD, Smoking, Diabetes, SBP, Antihypertensive Therapy	5734	58.6%	M: 213 F: 259	65.8 (NR)	10 years
8266381	D'Agostino[56]	1994	Stratified	NA	Framingham cohort participants aged 55 to 84 years, free of stroke	Incident stroke	Antihypertensive Therapy, LVH, AF, CVD, Smoking, Age, Diabetes, SBP	5734	58.6%	NR	NR	10 years
9603539	Wilson[57]	1998	Stratified	NA	Population based cohort from the Framingham Heart Study who were free of CVD	Incident coronary heart disease (CHD)	Baseline Survival Function, Total Cholesterol, HTN, Smoking, Age, HDL Cholesterol, Diabetes	5345	53.4%	NR	M: 48.6 (11.7) F: 49.8 (12)	12 years
10371227	Kannel[58]	1999	Stratified	NA	Members of the Framingham Heart Study, a population-based cohort aged 45-95 years old, free of heart failure, but predisposed by CAD, hypertension, or valvular heart disease	Heart failure	Congenital Heart Disease, Valve Disease, LVH, Cardiomegaly, Age, Diabetes, HR, SBP, Vital Capacity	15267	58.4%	M: 252 F: 234	M: 62 (NR) F: 63.8 (NR)	4 years
11296578	Qureshi[59]	2001	Covariate	Protective	Unselected volunteers without previous stroke, TIA, or carotid artery surgery	Asymptomatic carotid artery stenosis > 60% by duplex ultrasound	Age, CAD, Smoking, Hypercholesterolemia, Sex	887	69%	170	66.4 (12.9)	Diagnosis
11809350	Lumley[60]	2002	Stratified	NA	Population-based cohort study of men and women age 65 and older at study entry	Stroke	M: Diabetes, LVH, History of CVD, AF, Age, Impaired Fasting Glucose, SBP, Creatinine, 15-ft Walk Time F: AF, Age, History of CVD	5888	57.6%	NR	73 (NR)	5 years (median: 6.3 years)
11822347	Russell[61]	2002	Stratified	NA	Medicare recipients hospitalized for deep venous thrombosis or pulmonary embolism	Diagnosis of venous thromboembolis (deep vein thrombosis or pulmonary embolism)	M: Secondary Neoplasm x Age, Renal Failure x Age, Age, Cellulitis, Varicose Veins, Major Orthopedic Procedure, Primary Neoplasm, Corticosteroids, Pneumonia, Arthritis, Warfarin, Brain and/or Spinal Cord Injury, Blood Disorder x Age, COPD x Age, Abnormal Respiration, Diabetes, Potassium	2823353	52.9%	M: 600 F: 730	NR	Diagnosis

							Chloride, Ischemic Heart Disease, Prior DVT and/or PE, Secondary Neoplasm x Age F: Prior DVT and/or PE, Renal Failure x Age, Secondary Neoplasm x Age, Other CVD x Age, Age, Cellulitis, Major Orthopedic Procedure, Corticosteroids, Anemia x Age, Primary Neoplasm, Diabetes, Varicose Veins, Abnormal Respiration, Brain and/or Spinal Cord Injury, Warfarin, Blood Disorder x Age, IBS, COPD x Age, Neoplasm, Arthritis, Potassium Chloride, Hormone Replacement Therapy, Pneumonia, Ischemic Heart Disease, Pregnancy					
12086074	Ciampi[62]	2001	Stratified	NA	Population based cohort of 18 to 74 years of age surveyed with respect to their cardiovascular status	Presence of CHD as either a history of MI, aorto-coronary bypass , other forms of specifically defined ischemic cardiopathies or cardiac complications before or after surgery	Family History, Diabetes, Smoking Status, Cholesterol, Age	1147	100%	NR	39.4 (16.6)	Diagnosis
17088464	Wu[15]	2006	Stratified	NA	Men and women aged 35 to 59 years in Beijing and Guangzhou (patients from the USA-PRC study cohort)	Ischemic stroke	Diabetes, BMI, Cholesterol, Smoking, SBP, Age	9903	50.6%	M: 158 F: 108	46 (6)	11 years (mean: 15.1 years)
17586511	Jee[63]	2008	Stratified	NA	Koreans aged 30-84 years insured by the National Health Insurance Corporation (NHIC)	Stroke	Diabetes, Smoking, Cholesterol, Alcohol Intake, Age, Physical Activity, BMI, SBP	1223740	36.5%	M: 29216 F: 18017	M: 46.6 (11) F: 49.4 (12.1)	10 years (mean: 13 years)
18036028	Assmann[64]	2007	Covariate	Protective	Adult employees in the PROCAM study, which excluded subjects with a history of angina pectoris, MI, or stroke	Cerebral ischemic events (ischemic stroke or TIA)	Smoking, Diabetes, Age, SBP, Sex	26975	27.4%	85	45.7 (6.8)	10 years (mean: 12 years)
18430204	Yang[65]	2008	Stratified	NA	Patients with type 2 diabetes	Heart failure	Urinary Albumin to Creatinine Ratio, CHD, Glycated Hemoglobin, BMI, Age, Blood	3456	54.8%	131	NR	median: 5.52 years

							Hemoglobin					
19249635	Schanbel[66]	2009	Covariate	Protective	Framingham cohort participants free of atrial fibrillation, between ages 45 and 95 years	Atrial fibrillation	Age, BMI, Age x Murmur, SBP, Murmur, Sex x Age, Prevalent Heart Failure, Sex, Antihypertensive Therapy, Age x Prevalent Heart Failure, Recalibration for Baseline Survival	4764	55%	457	60.9 (9.9)	10 years
20001655	Kjeldsen[67]	2009	Covariate	Protective	Patients with HTN and electrocardiographic LVH randomized to losartan-based versus atenolol-based therapy in the Losartan Intervention For Endpoint reduction in hypertension (LIFE) study	Incident myocardial infarction	History of Angina, Sex, History of Diabetes, Urinary Albumin to Creatinine Ratio, Cholesterol, Pulse Pressure	8624	54%	331	66.9 (NR)	mean: 4.8 years
20535515	Wu[68]	2011	Stratified	NA	Case-Control: Patients admitted for stroke at community hospitals in Chongqing China	Stroke	M: Age, HTN, CHD, Family History of Stroke, Hyperlipidemia, DBP, Family History of HTN, Education Level, Diabetes, High Salt Consumption, Physical Exercise F: Age, HTN, Family History of Stroke, Hyperlipidemia, Diabetes, DBP, Family History of HTN, Education Level, Alcohol Intake, High Salt Consumption, BMI	NR	NR	NR	NR	NA (Case-Control)
20671251	Chien[69]	2010	Covariate	Protective	Stroke-free at baseline	Stroke	AF, Family History of Stroke, Diabetes, Age, DBP, SBP, Sex	3513	52.7%	240	54.6 (NR)	10 years (mean: 15.9 years)
21167488	Ramos[70]	2011	Covariate	Harmful	Patients free of cardiovascular disease	Peripheral arterial disease (ABI <0.9)	Smoking, Diabetes, Sex, Age, Pulse Pressure	4046	52%	235	63.4 (8.6)	NA (Case-Control)
21177699	McGorrian[71]	2011	Covariate	NA[d]	Case-Control: patients with incident acute MI admitted to coronary care or equivalent unit were matched to at least one sex- and age-matched (within 5 years) control, who had no history of heart disease	Incident MI	Lipoprotein, Diabetes, Smoking, HTN, Secondhand Smoke Exposure, Age x Sex	12772	24.7%	5349	57.46 (12.13)	NA (Case-Control)
POPULATION SAMPLE – MORBIDITY AND MORTALITY												
1985385	Anderson[54]	1991	Covariate	NA[e]	Members of the Framingham Heart	Coronary heart disease (MI and	Sex, Age x Sex, Diabetes, Diabetes x	5573	NR	NR	NR	12 years

					Study and Framingham Offspring Study cohorts, who were free of CVD and cancer	CHD death plus angina pectoris and coronary insufficiency)	Sex, Smoking, LVH, Cholesterol, SBP, Age					
11724655	Stevens[72]	2001	Covariate	Protective	Patients presenting with newly diagnosed diabetes, a fasting plasma glucose >6 mmol/L (108 mg/dL) on 2 further occasions, and no recent history of MI, angina or heart failure	CHD (occurrence of fatal or non-fatal MI or sudden death)	Cholesterol, Smoking, HbA1c, SBP, Duration of Diabetes, Age at Diagnosis of Diabetes, Sex, Ethnicity	4540	42.9%	NR	52 (8.8)	10 years (median: 10.7 years)
14514579	Folsom[73]	2003	Stratified	NA	Adults initially free of CHD in the Atherosclerosis Risk in Communities study	Incident coronary heart disease (CHD)	Waist-to-Hip Ratio, Intima Media Thickness, Failure Time Function Constant, Cholesterol, Race, LVH, Smoking, Antihypertensive Therapy, WBC, Creatinine, Age, Keys Score, Factor VIII, SBP, BMI, Sports Activity, Serum Albumin	1722	50%	M: 212 F: 95	NR	10 years (mean: 10.2 years)
15173150	Liu[74]	2004	Stratified	NA	Chinese Multi-provincial Cohort Study aged 35 to 64 years free of CVD	CHD (coronary death and myocardial infarction)	HDL Cholesterol, Total Cholesterol, HTN, Smoking, Diabetes, Age	5251	53.6%	M: 195 F: 78	49 (NR)	10 years
16732001	Donnan[75]	2006	Covariate	Protective	Subjects with a diagnosis of type 2 diabetes residing in Tayside, Scotland	Major CHD events defined as fatal or nonfatal AMI or CHD death	Smoking, Treated HTN, Height, SBP x Treated HTN, HbA1c, Sex, SBP, Age at Diagnosis, Total Cholesterol, Duration of Diabetes, HbA1c x Follow Up	4569	47.4%	243	59.5 (12.1)	5 years (median: 4.1 years)
17088464	Wu[15]	2006	Stratified	NA	Men and women in Beijing and Guangzhou (patients from the USA-PRC study cohort)	Ischemic cardiovascular disease (ICVD) events	SBP, Smoking, Total Cholesterol, BMI, Diabetes, Age	9903	50.6%	M: 224 F: 147	46 (6)	11 years (mean: 15.1 years)
17088464	Wu[15]	2006	Stratified	NA	Men and women in Beijing and Guangzhou (patients from the USA-PRC study cohort)	Incident CHD event (defined as MI, possible acute MI and coronary death, ischemic cardiac arrest with successful resuscitation, excluded silent MI)	BMI, Diabetes, Total Cholesterol, Smoking, Age, SBP	9903	50.6%	M: 66 F: 39	46 (6)	11 years (mean: 15.1 years)
17090561	Woodward[76]	2007	Stratified	NA	Patients without CHD and whose prior diagnosis was not a TIA	10-year cardiovascular risk (cardiovascular death, hospitalization for CHD,	Diabetes, Family History, Total Cholesterol, Scottish Index of Multiple Deprivation Score, Age, Smoking, SBP,	13297	50.8%	M: 743 F: 422	M: 48.9 (0.1) F: 48.8 (0.1)	10 years

					cerebrovascular disease, or any coronary artery intervention)	HDL Cholesterol						
17478150	Mainous[77]	2007	Stratified	NA	Population-based cohort of adults in Atherosclerosis Risk in Communities Study (ARIC) who were free of cardiovascular disease at baseline	Incident CHD	M: 10-year CHD Risk, Age, History of Diabetes, Smoking, Hypercholesterolemia, Family History of CAD, HTN, Physical Activity F: 10-year CHD Risk, Age, History of Diabetes, Smoking, HTN, BMI, Hypercholesterolemia	14343	56.5%	NR	54.4 (5.7)	10 years
17615182	Hippisley-Cox[78]	2007	Stratified	NA	Population based cohort ages 35-74 free of cardiovascular disease	Cardiovascular disease (MI, CHD, stroke, TIA)	Age, Antihypertensive Therapy, Smoking, Family History of CVD, Townsend Score of Output Area, BMI, SBP, Cholesterol	1283174	49.6%	M: 37843 F: 27828	NR	10 years
18036028	Assmann[64]	2007	Covariate	Protective	Adult employees in the PROCAM study which excluded subjects with a history of angina pectoris, myocardial infarction, or stroke	Major coronary events	Fasting Blood Glucose or Diabetes, HDL Cholesterol, LDL Cholesterol, SBP, Family History, Triglycerides, Smoking	26975	31.6%	511	45.7 (6.8)	10 years (mean: 12 years)
18212285	D'Agostino[79]	2008	Stratified	NA	Healthy participants free of CVD in the original Framingham Heart Study and the Framingham Offspring Study	CVD events and death	Age, SBP x Treatment, Total Cholesterol, Smoking, Diabetes, HDL Cholesterol	8491	53.3%	M: 718 F: 456	M: 48.5 (10.8) F: 49.1 (11.1)	10 years
18591403	Cederholm[80]	2008	Covariate	Protective	Type 2 diabetics, defined treatment with 1) diet only, 2) oral hypoglycemic agents only, or 3) insulin only or combined with oral agents, and onset age of diabetes 40 years	First incident fatal or nonfatal CVD	Sex, Smoking, Lipid Lowering Therapy, Antihypertensive Therapy, HbA1c, Diabetes Duration, Onset Age, BMI, SBP	11646	43.1%	990	50.7 (9.8)	5 years
18591432	Wilson[81]	2008	Covariate	Protective	Men and women who were the offspring and spouses of the participants in the original Framingham Heart Study, who were free from CHD and CVD	First CHD Event (MI, angina pectoris, coronary insufficiency, and CHD-related death)	Smoking, Diabetes, Age, Cholesterol, BMI, SBP, Sex	4780	51.6%	492	36.7 (9.75)	24 years
18762707	Teramoto[82]	2008	Covariate	Protective	Patients with hypercholesterolemia (total cholesterol 220-270 mg/dl) and no history of ischemic heart disease or stroke, assigned either to diet alone or diet in	CHD	Glucose x HTN, HTN, Age, Sex, HDL Cholesterol, Smoking, LDL Cholesterol, Diet, Diet + Pravastatin	7832	68.5%	138	58.3 (7.2)	5 years (mean: 5.3 years)

					combination with pravastatin (10-20 mg/day)							
19157168	Maracy[83]	2008	Covariate	Protective	Type 2 diabetics seen at a metabolism clinic	Ischemic heart disease	Age, Sex, BMI, Duration, HTN, BMI	2101	56%	773	NR	NA (cross-sectional)
19763133	Arima[84]	2009	Covariate	Protective	Healthy individuals living in the town of Hisayama, a suburb of Fukuoka City in Southern Japan	Cardiovascular disease	Sex, Diabetes, Smoking, Age, SBP, LDL Cholesterol, HDL Cholesterol	1756	57%	216	59 (12)	14 years
19958966	Sacco[85]	2009	Covariate	Protective	Community participants free of stroke and coronary artery disease	Combined cardiovascular outcomes (stroke , myocardial infarction, or vascular death)	Race, SBP, Physical Activity, Smoking, Alcohol Intake, Total Cholesterol, PVD, DBP x Antihypertensive Therapy, Waist, DBP, Age, FBS	2737	63.2%	NR	68.8 (10.4)	median: 9 years
20001655	Kjeldsen[67]	2009	Covariate	Protective	Patients with HTN and electrocardiographic LVH randomized to losartan-based vs. atenolol-based therapy in the Losartan Intervention For Endpoint reduction in hypertension (LIFE) study	Cardiovascular death, stroke , or MI	Sex, History of AF, History of Stroke or TIA, Smoking, History of Diabetes, Age, History of Ischemic Heart Disease, Urinary Albumin to Creatinine Ratio, LVH, Total Cholesterol, Physical Activity	9193	54%	1096	66.9 (NR)	mean: 4.8 years
20236721	Zgibor[86]	2010	Stratified	NA	Participants in the Pittsburgh Epidemiology of Diabetes Complications Study (EDC) cohort who had childhood type 1 diabetes diagnosis at least 6 years prior to enrollment	Hard CHD event (first nonfatal MI that was confirmed by medical records or Q-waves on ECG's according to Minnesota codes 1.1 or 1.2) and fatal CHD	M: HDL Cholesterol, Diabetes Duration, WBC, Microalbuminuria F: SBP, Antihypertensive Therapy, Diabetes Duration, Non-HDL Cholesterol, Waist-to-Hip Ratio	603	49.6%	NR	M: 27.1 (7.6) F: 27.3 (7.9)	15 years
21719139	Zethelius[87]	2011	Covariate	Protective	Patients in a population based registry for type II diabetes	Fatal/nonfatal CVD	Previous CVD, Onset Age, Diabetes Duration, SBP, BMI, Macroalbuminuria, AF, Sex, Smoking, Microalbuminuria, Cholesterol, HbA1c	24288	40%	2488	62 (9)	5 years (mean: 4.8 years)
22374565	Kang[88]	2012	Covariate	NA[f]	Population-based cohort with an equal portion of rural and urban participants from Jiangsu province of China, who where followed for incident diabetes and CVD	Incident coronary heart disease (CHD) and stroke	Age, BP, Triglycerides, Sex x Waist Circumference, HDL Cholesterol, Fasting Plasma Glucose	3598	59.7%	87	50.2 (NR)	median: 6.3 years
CARDIAC SURGERY – MORTALITY												
7828293	Tu[89]	1995	Covariate	Harmful	Patients undergoing cardiac surgery	In-hospital mortality	Urgency of Surgery, Age, Type of Surgery, Left Ventricular	6213	NR	229	NR	Hospitalization

							Function, Repeat Operation, Sex, Elective Surgery, CABG					period
10456395	Nashef[90]	1999	Covariate	Harmful	Patients undergoing cardiac surgery	Early mortality	Postinfarct Septal Rupture, Endocarditis, Critical Preoperative State, Left Ventricular Dysfunction, Previous Cardiac Surgery, Surgery on Thoracic Aorta, Emergency Operation, Neurological Dysfunction, Operation Other Than CABG, Pulmonary HTN, Recent MI, Creatinine, UA, Arteriopathy, Chronic Pulmonary Disease, Sex, Age	13302	NR	NR	NR	NR
10750767	Bernstein[91]	2000	Covariate	Harmful	Patients who had open-heart surgery evaluated with planar thallium myocardial perfusion imaging. Surgical procedures included aortocoronary bypass (ACB), valve replacement or repair (VLV), and combinations of the two (COM).	In-hospital mortality	Reoperation, Dialysis, Cirrhosis, Cardiogenic Shock, Ideopathic Thrombopenic Purpura, Age, Sex, Pulmonary HTN, LVEF, Endocarditis, Bypass Surgery, COPD, Failed Angioplasty or Catheterization, Neurologic Disorder, Tricuspid Valve Replacement, Substance Abuse, Mitral Valve Replacement, Intubated, Acute MI, Preoperative IABP, PVD, Renal Failure, Diabetes, HTN, CHF, Cardiomegaly, Left Main Disease, Carotid Disease, Aneurysm, Asthma, VT or VF, BMI, Pacemaker Dependency, Neoplasm, Cold Agglutinins, Blood Products Refused, Immunodeficiency	8593	NR	455	NR	Hospitalization period
14583307	Huijskes[92]	2003	Covariate	Harmful	Patient who underwent a CABG and/or heart valve operation	In-hospital mortality	MI, Prior Cardiac Surgery, Creatinine, Emergency Procedure, LVEF, CABG, Sex, Age	4855	27%	171	NR	Hospitalization period
15172248	Nowicki[93]	2004	Covariate	Harmful	Patients undergoing	In-hospital mortality	Emergent Priority, Age,	3150	48.4%	296	66.7	Hospitaliz

					mitral valve surgery		Prior Stroke, NYHA Class, CAD, Urgent Priority, Valve Replacement, Creatinine, CHF, Diabetes, Sex, Year				(NR)	ation period
15998680	Ambler[94]	2005	Covariate	Harmful	Patients who underwent aortic and/or mitral heart valve surgery (included both repair and replacement surgeries)	In-hospital mortality	Priority of Surgery, Renal Failure, Age, Operation Sequence, LVEF, Concomitant Tricuspid Surgery, Valve Operation, Preoperative Arrhythmia, CABG, BMI, HTN, Diabetes, Sex, Year	16679	41.6%	1067	64.8 (12.3)	Hospitalization period
16039188	Jin[95]	2005	Covariate	Harmful	Patients aged 30 to 95 years who underwent aortic valve replacement (AVR) or mitral valve replacement or repair (MVRR)	Operative Mortality	Priority of Operation, Creatinine, History of Cardiac Surgery, BMI, Pulmonary HTN, COPD, PVD, AF, CABG, NYHA Class, Sex, Age	1596	NR	96	NR	Hospitalization period
17307434	Hannan[96]	2007	Covariate	Harmful	Patients who underwent isolated cardiac valve surgery (valve surgery without CABG) or cardiac valve surgery along with concomitant CABG	In-hospital mortality	Shock, Hepatic Failure, Dialysis, MI, Multiple Valve Repair or Replacement, Endocarditis, Creatinine, Previous Open Heart Operation, PAD, COPD, Mitral Valve Replacement or Repair, Sex, Age	10702	39%	472	NR	Hospitalization period
17307434	Hannan[96]	2007	Covariate	Harmful	Patients who underwent isolated cardiac valve surgery (valve surgery without CABG) or cardiac valve surgery along with concomitant CABG	In-hospital mortality	Shock, Dialysis, Mitral Valve Repair or Replacement or CABG, MI, Creatinine, Endocarditis, LVEF, Previous Open Heart Operation, Sex, Extensively Calcified Ascending Aorta, Cerebrovascular Disease, Diabetes, Age	8823	39%	784	NR	Hospitalization period
19523840	Nissinen[97]	2009	Covariate	Harmful	Patients who underwent cardiac surgery	Postoperative mortality	Age, LVEF, CKD, Sex, Number of Procedures, Ventricular Septal Defect, Thoracic Aorta Surgery, Critical Preoperative Status, Neurological Dysfunction, Pulmonary Disease, Reoperation, Extracardiac Arteriopathy	3613	22.5%	90	67.7 (10.3)	30 days

19559823	O'Brien[98]	2009	Covariate	NA[g]	Patients who underwent isolated single aortic or mitral valve surgery	Mortality	BSA, Level of Urgency, Dialysis, Sex x BSA, Reoperation, Mitral Valve Repair, Endocarditis, CHF x NYHA Class, Diabetes, Shock, Creatinine, IABP or Inotropes, Immunosuppressive Treatment, Chronic Lung Disease, PVD, Stenosis, UA, AF, Left Main Disease, MI, HTN, Mitral Valve Replacement, Age, LVEF, CVD, Prior CVA, Mitral Insufficiency, Tricuspid Insufficiency, Number of Diseased Vessels, Race	109759	44.6%	3706	NR	30 days
STROKE – MORBIDITY AND MORTALITY												
1527533	Hankey[99]	1992	Covariate	Protective	Transient ischemic attack patients referred to a university hospital without prior stroke	Stroke, myocardial infarction, or vascular death	PVD, Carotid and Vertebral-Basilar TIAs, Brain TIA, Sex, Neurological Signs, LVH, Age, Number of TIAs	469	32.4%	118	62.1 (12)	mean: 4.1 years
1527533	Hankey[99]	1992	Covariate	Protective	Transient ischemic attack patients referred to a university hospital without prior stroke	Coronary event	Carotid and Vertebral-Basilar TIAs, Sex, Ischemic Heart Disease, PVD, Neurological Signs, LVH, Age, Number of TIAs	469	32.40%	58	62.1 (12)	mean: 4.1 years
8290048	Lisk[100]	1994	Covariate	Harmful	Patients with intracerebral hemorrhage	Poor outcome (Rankin scale 5 and death)	Admission Interval, Age, DBP, Hemorrhage Location, Surgery, SBP, Sex, Pupil Abnormality, Mental Status, Mass Effect, Hemorrhage Size, Hyperventilation, Subarachnoid Blood, Ventricular Extension, GCS	75	59%	35	58.6 (16.4)	mean: 18 days
10382694	Rothwell[101]	1999	Covariate	Harmful	Patients were recruited to ECST if they had had a carotid distribution TIA, minor ischemic stroke, non-disabling major ischemic stroke, or a retinal infarction in the previous 6 months, and had evidence of ipsilateral carotid stenosis	Any major stroke (fatal or lasting longer than 7 days) or death from any other cause within 30 days of surgery	PVD, SBP, Sex	1208	NR	117	NR	30 days

17068305	Kent[102]	2006	Covariate	Protective	Patients with acute stroke being evaluated for thrombolysis	Normal/Near-Normal outcome (mRS ≤ 1)	rt-PA Treatment, Sex, Prior Stroke, Age, Symptom Onset to Treatment Time, Age x NIHSS, Treatment x Time, SBP, NIHSS, Treatment x SBP, Treatment x Sex, Diabetes, Treatment x Prior Stroke	2131	45.3%	773	65.9 (11.4)	Hospitalization period
18823637	Koopman[103]	2009	Covariate	Protective	Cerebral venous thrombosis (CVT) patients aged older than 15 years who were evaluated in the hospital	Poor outcome (mRS > 2)	CNS Infection, CVT, Malignancy, GCS, Age, Mental Status Disorder, Intracranial Hemorrhage, Sex	90	78%	16	36.2 (NR)	mean: 1.58 years
19420921	Ferro[104]	2009	Covariate	Protective	Patient who had cerebral vein and dural sinus thrombosis	mRS > 2	Malignancy, Coma, DVT, Mental Status Disturbance, Sex, Intracranial hemorrhage	624	74%	19	NR	median: 1.3 years
STROKE – MORTALITY												
9645975	Arboix[105]	1998	Covariate	Protective	Patients with cardioembolic cerebral infarction	In-hospital mortality	Altered Consciousness, Limb Weakness, CHF, Sex, Age	231	62.8%	63	NR	Hospitalization period
18004645	Roquer[106]	2007	Covariate	Protective	Patients with acute ischemic stroke	In-hospital mortality	Age, Sex, NIHSS, Glycemia	1527	49.50%	197	73 (12)	Hospitalization period
21300951	Saposnik[107]	2011	Covariate	Protective	Patients presenting with an acute ischemic stroke	Mortality	Stroke Severity, Stroke Subtype, Renal Dialysis, Glucose, Preadmission Disability, AF, Cancer, CHF, Sex, Age	8223	47.4%	1004	72.04 (13.86)	30 days
21300951	Saposnik[107]	2011	Covariate	Protective	Patients presenting with an acute ischemic stroke	Mortality	Stroke Severity, Renal Dialysis, Stroke Subtype, Preadmission Disability, Cancer, CHF, Glucose, Smoking, AF, Previous MI, Sex, Age	8223	47.4%	1853	72.04 (13.86)	1 year
VTE – MORBIDITY												
10074953	Kuijer[108]	1999	Covariate	Harmful	Patients with confirmed venous thromboembolism	All bleeding complications	Malignancy, Age, Sex	241	45.6%	63	60.7 (17)	3 months
10102459	Kahn[109]	1999	Covariate	Protective	Patients suspected of deep vein thrombosis	Deep vein thrombosis	Orthopedic Surgery, Superficial Venous Dilation, Sex, Temperature	271	50.60%	73	57.1 (16.9)	6 months
12637130	Miniati[110]	2003	Covariate	Protective	Patients who were referred for suspected pulmonary embolism	Pulmonary embolism (diagnosis was based on angiographic or autopsy	Amputation of Hilar Artery, Oligemia, Consolidation, EKG Signs of Acute Right Ventricular Overload,	1100	55%	440	NR	Diagnosis

						documentation)	Dyspnea, Age, Hemoptysis, Sex, Thrombophlebitis, Chest Pain, Pre-Existing Disease, Fever, Pulmonary Edema					
14563499	Constans[111]	2003	Covariate	Protective	Outpatients with suspected deep venous thrombosis	In-hospital deep venous thrombosis	Unilateral Pain, Lower Limb Enlargement, Lower Limb Paralysis, Confinement to Bed, Sex, Other Diagnosis	444	66.2%	126	61 (18)	Hospitalization period
16607053	Chen[112]	2006	Covariate	Harmful	Patients with acute dyspnea presenting in the emergency room	Pulmonary embolism diagnosis at admission	Leg Edema, EKG RV Strain Signs, High Alveolar-Arterial Oxygen Gradient, Clear Chest Roentgenogram, Cough, Sex, Unclear Breath Sounds, Chest Tightness	148	45.3%	56	66.3 (17)	NA (case control)
18436792	Miniati[113]	2008	Covariate	Protective	Patients referred from a department or another hospital for suspected pulmonary embolism	Pulmonary embolism confirmed by angiography or autopsy findings	Dyspnea, Acute Cor Pulmonale, Age, Chest Pain, Hemoptysis, Leg Swelling, Syncope, DVT, Sex, Orthopnea, Immobilization, CVD, Crackles, Pulmonary Disease, Wheezes, Fever	1100	55%	440	NR	Diagnosis
AORTIC DISEASES – MORTALITY												
16146566	Urbonavicius[114]	2005	Covariate	Harmful	Patients with a diagnosis of AAA who were treated surgically	Post-operative mortality	Pevious MI, Sex, Clinical Course of Abdominal Aortic Aneurysm	69	24.6%	8	NR	30 days
19249184	Giles[115]	2009	Covariate	Harmful	Propensity score matched Medicare beneficiaries undergoing elective open or endovascular abdominal aortic aneurysm repair	Perioperative mortality	Open Repair, Age, Renal Disease, Chronic Renal Insufficiency, CHF, Vascular Disease, Sex	22830	19.7%	1621	NR	30 days
19782526	Egorova[116]	2009	Covariate	Harmful	Medicare Patients > 65 years old hospitalized after undergoing Endovascular aneurysm repair (EVAR)	Mortality	Renal Failure, Lower Extremity Ischemia, Age, CHF, Liver Disease, Sex, Neurological Risk Factor, COPD, Hospital Annual Volume, Surgeon Endovascular Aneurysm Repair Volume	44630	17.1%	NR	NR	30 days
21412997	Grant[117]	2011	Covariate	Harmful	Patients undergoing elective abdominal aortic aneurysm repair surgery	30-day all-cause mortality	Open Surgery, Antiplatelet Therapy, Sex, Diabetes, Respiratory Disease,	1936	17.7%	31	NR	30 days

							Age, Creatinine					
POPULATION SAMPLE – MORTALITY												
1985385	Anderson[54]	1991	Covariate	NA[b]	Members of the Framingham Heart Study and Framingham Offspring Study cohorts, who ranged in age from 30 to 74 years who were free of cardiovascular disease and cancer	Death from CHD (sudden or non-sudden)	Sex, Diabetes, LVH, Smoking, Diabetes x Sex, Cholesterol, SBP, Age	5573	NR	NR	NR	12 years
1985385	Anderson[54]	1991	Covariate	NA[b]	Members of the Framingham Heart Study and Framingham Offspring Study cohorts, who ranged in age from 30 to 74 years who were free of cardiovascular disease and cancer	Cardiovascular death	Sex, Diabetes, Smoking, Diabetes x Sex, LVH, Cholesterol, SBP, Age	5573	NR	NR	NR	12 years
9425461	Knuiman[118]	1997	Stratified	NA	General population health survey of people living in Western Australia	Mortality	Smoking, Cholesterol, BMI, Age, SBP	3891	50.6%	M: 116 F: 71	M: 56.4 (9.7) F: 55.8 (9.3)	10 years
11006890	Kornitzer[119]	2000	Stratified	NA	Free of coronary heart disease (CHD) at baseline	CHD mortality	HDL Cholesterol, Total Cholesterol, Age, Smoking, SBP	6066	29.0%	M: 84 F: 30	NR	10 years
11451781	Pocock[120]	2001	Stratified	NA	Patients included in anti-hypertensive drug trials	Cardiovascular death	Age, Smoking, Creatinine, Diabetes, Height, History of MI, History of Stroke, LVH, SBP, Total Cholesterol	NR	NR	M: 27987 F: 20802	NR	mean: 5.2 years
12788299	Conroy[121]	2003	Stratified	NA	General population	Fatal cardiovascular disease	Cholesterol, Sex, Smoking, SBP	NR	0%	NR	NR	10 years
15662552	Balkau[122]	2004	Stratified	NA	Population-based studies or large studies in occupational groups in Europe	Mortality	Cholesterol, Smoking, SBP, Diabetes, Fasting Plasma Glucose, Impaired Glucose Regulation, Age	25413	35.0%	M: 301 F: 56	NR	5 years
15662552	Balkau[122]	2004	Stratified	NA	Population-based studies or large studies in occupational groups in Europe	Mortality	M: Fasting Plasma Glucose, Diabetes, Age, Impaired Glucose Regulation F: Age, Fasting Plasma Glucose, Diabetes, Diabetes	25413	35.0%	M: 632 F: 159	NR	10 years
15933390	Porock[123]	2005	Covariate	Protective	Long-term-care residents in nursing home	Mortality	Cancer, Admission, Deteriorated, Age, Cancer x Age, Admission x Deteriorated, Shortness of Breath, Renal Disease, Sex, Loss of Appetite, Dehydrated, Weight Loss, CHF, ADLs,	32599	73.7%	7473	NR	6 months

							Cognitive Performance Scale, Dementia					
20001655	Kjeldsen[67]	2009	Covariate	Protective	Patients with HTN and electrocardiographic LVH randomized to losartan-based versus atenolol-based therapy in the Losartan Intervention For Endpoint reduction in hypertension (LIFE) study	Cardiovascular death	Age x Smoking, Smoking, History of AF, History of Stroke or TIA, Sex, Urinary Albumin to Creatinine Ratio, Prior Ischemic Heart Disease, LVH, Creatinine, Glucose, Exercise	9193	54%	438	66.9 (NR)	mean: 4.8 years
ARRHYTHMIA – MORBIDITY												
2330896	Cabin[124]	1990	Covariate	Harmful	Patients without mitral stenosis or prosthetic valves who were referred to the echocardiography laboratory with atrial fibrillation	ST segment elevation MI c embolization	Structural Heart Disease, Sex, Left Atrial Size	272	9.9%	27	68 (NR)	12 months (mean: 2.75 years)
10356104	Hart[125]	1999	Covariate	Harmful	Adults with documented sustained or recurrent AF without mitral stenosis or prosthetic cardiac valves who were recruited from inpatient and outpatient facilities, assigned to aspirin 325 mg/d or aspirin plus fixed, low-dose warfarin	Incident ischemic stroke	Sex, Prior Stroke or TIA, SBP, History of HTN, Age, Alcohol Intake	1853	30.40%	101	69 (10)	mean: 2.0 years
12941677	Wang[126]	2003	Covariate	Harmful	Community-based cohort (FRAMINGHAM) with new-onset AF	Stroke	Diabetes, Sex, Prior Stroke or TIA, Age, SBP	868	47%	111	75 (9)	5 years (mean: 4.3 years)
17099015	Shireman[127]	2006	Covariate	Harmful	Elderly patient at least 65 year old with atrial fibrillation who were taking warfarin	Major acute bleeding event within 90 days of the hospital discharge	Anemia, Substance Use, Recent Bleeding Event, Age, Antiplatelet Therapy, Sex, Diabetes	19875	52.50%	318	NR	90 days
19762550	Lip[128]	2010	Covariate	Harmful	Ambulant and hospitalized patients with AF without mitral stenosis or previous heart valve surgery and who did not use either VKA or heparin at discharge, $\geq$ 18 years old with an ECG or Holter recording showing atrial fibrillation during the qualifying	Stroke and thromboembolism	Age, Stroke/TIA, CHF/LVD, Diabetes, Sex, HTN, Vascular Disease	5333	40.80%	25	66 (14)	1 year
21324428	Mathews[129]	2011	Covariate	Harmful	Patients with atrial fibrillation who underwent standard two-dimensional, Doppler, and speckle-tracking echocardiography	In-hospital major bleeding associated with acute myocardial infarction	Signs of Heart Failure, Hemoglobin, ST-Segment Changes, Sex, Previous PAD, Diabetes, Warfarin Use, Creatinine, SBP,	72313	35.3%	7810	64 (NR)	Hospitalization period

							HR, Age, Weight					
CARDIAC SURGERY – MORBIDITY												
1623792	Tuman[130]	1992	Covariate	Harmful	Adult patients undergoing cardiac surgery (cardiac surgery combined with ventricular aneurysmectomy, endocardial mapping, carotid endarterectomy, or intracardiac procedures other than valvular surgery were excluded)	Post-operative morbidity (defined as MI, extended pulmonary assistance, renal insufficiency, serious infection, neurologic abnormalities including coma)	Reoperation, Surgical Procedure, Age, Age of Previous MI, Emergency Surgery, CABG + Valve, Multivalve Procedure, Cerebrovascular Disease, Pulmonary HTN, CHF, LVD, Renal Dysfunction, Sex, Mitral Valve Replacement, Aortic Valve Replacement	3156	34.3%	701	NR	NR
12822622	Lim[131]	2003	Covariate	Protective	Patients undergoing mitral valve repair	Coronary Disease (luminal narrowing of 50%)	EKG Evidence of Ischemia, Angina, Sex, Hypercholesterolemia, Age	359	35%	NR	65 (10)	Diagnosis
14583307	Huijskes[92]	2003	Covariate	Harmful	Patient who underwent a CABG and/or heart valve operation	Extended length of stay (ELOS) (care length of stay of at least 3 days or in-hospital death)	Combined CABG/Mitral Valve, Creatinine, LVEF, Recent MI, Prior Cardiac Surgery, Emergency Procedure, Critical Preoperative State, Failed PCI, Pulmonary HTN, Combined CABG/Aortic Valve, Neurological Dysfunction, Sex, Age, Hemoglobin	4855	27%	1001	NR	Hospitalization period
STROKE – MORBIDITY												
1527533	Hankey[99]	1992	Covariate	Protective	Transient ischemic attack patients referred to a university hospital without prior stroke	Stroke	Ischemic Heart Disease, PVD, Residual Neurological Signs, TIA, LVH, Carotid and Vertebral-Basilar TIAs, Sex, Age	469	32.4%	63	62.1 (12)	mean: 4.1 years
OTHER												
2072767	Selker[132]	1991	Covariate	NA[d]	Critical care unit patients whose chief complaint was chest pain or symptoms consistent with possible acute cardiac ischemia who sought medical care	Acute ischemia diagnosis (including acute myocardial infarction or unstable angina)	EKG T-waves Inverted, EKG ST-segment Changes, Chest or Left Arm Pressure/Pain, Sex, Age, EKG Q waves Present	3453	43%	1251	62 (NR)	NR
19751624	Ngako[133]	2009	Covariate	Protective	Patients presenting to the emergency room with suspicion of acute coronary syndrome	Acute coronary syndrome	Typical Left Arm/Jaw/Neck Pain, Typical Chest Pain, Epigastric Pain, History of CAD, Dyspnea, Sex	399	49.1%	124	76.9 (7.4)	1 month
20092615	Gencer[134]	2010	Covariate	NA[d]	Patients who reported any type of chest pain	Diagnosis of CHD (angina pectoris,	Sex x Age, Cardiovascular Risk	661	52.50%	85	55.4	1 year

					during visit. The presence of chest pain was ascertained according to the usual practice of each family practitioner.	unstable angina, myocardial infarction)	Factors, History of CVD, Area of Pain, Absence of Tenderness, Duration of Chest Pain, Precipitating with Exertion				(19)	
20603345	Bosner[135]	2010	Covariate	NA[d]	Patients who presented with chest pain localized on the anterior chest wall in the area between the clavicles who was seen by a primary care physician and subsequently tested for coronary artery disease	Presence of coronary artery disease	Vascular Disease, Pain Worse During Exercise, Pain Not Reproducible By Palpatation, Patient Assumes Pain is Cardiac, Age x Sex, CHF, Diabetes, Stinging Pain, Localized Muscle Tension, Cough	1249	43.9%	180	59 (13.9)	NA (case control)
10571089	Anyanwu[136]	1999	Covariate	Harmful	All patients registered on the national waiting list for heart transplantation in the UK	Thirty-day graft survival	Previous Sternotomy, Donor Age, Donor Inotropic Support, Donor with Diabetes, Sex of Donor, History of Donor Drug Abuse, Ischemic time, Sex x BSA, Pre-op Circulatory Support, Pre-op Ventilatory Support, Pulmonary Vascular Resistance, Donor to Recipient BSA Ratio, Recipient Age, Retransplant	377	17%	332	49 (10)	30 days
16219658	Pocock[4]	2006	Covariate	Protective	Patients with chronic heart failure (CHF)	Composite of cardiovascular (CV) death and heart failure (HF) hospitalization	Diabetes, Prior Heart Failure Hospitalization, NYHA Class, Age, Cardiomegaly, CHF, Pulmonary Edema, Bundle Branch Block, Pulmonary Crackles, Dependent Edema, Dyspnea, Mitral Regurgitation, AF, LVEF, Previous MI, DBP, Smoking, HR, BMI, Sex, Candesartan vs Placebo	7599	68.4%	2460	65.5 (10.9)	median: 3.17 years
21537001	Haines[137]	2011	Covariate	Harmful	Patients undergoing implantable cardioverter-defibrillator implantation	In-hospital complication (mortality or any complications)	Previous Implantable Cardioverter-Defibrillator, Defibrillator Type, NYHA Class, Other Admission, Previous Valvular Surgery, Sex, BUN, Chronic Lung Disease, AF or Flutter, Age	134069	25.9%	8589	NR	Hospitalization period

22114101	O'Connor[8]	2012	Covariate	Protective	Patients enrolled in the HF-ACTION study with a NYHF class II-IV, LVEF ≤ 35%	All-cause death or hospitalization	KCCQ Symptom Stability, Serum Urea Nitrogen, Exercise Duration on CPX Test, Sex	2331	28%	1555	NR	median: 2.5 years
22456478	Bouleti[138]	2012	Covariate	NA[h]	Patients who underwent percutaneous mitral commissurotomy with good results	Poor late functional results	Age x Mitral Valve Area, Final Mean Mitral Gradient, Valve Calcification x Sex, AF x NYHA Class	609	81%	309	49 (14)	20 years (mean: 10.7 years)
22155702	Holme[139]	2012	Covariate	Harmful	Patients in the Simvastatin and Ezetimibe in Aortic Stenosis trial with asymptomatic mild-to-moderate aortic stenosis	Mortality	Age, Sex, Smoking, LVMI, Bilirubin, HR, CRP	772	38%	78	67.6 (9.6)	4 years (mean: 4.8 years)
21871277	Weiss[140]	2011	Covariate	Harmful	Patients who underwent orthotopic heart transplantation (OHT)	Mortality	Bilirubin, Race, Creatinine Clearance, HF Etiology, Ventricular Assist Device, Age	17079	23.7%	NR	52.1 (11.9)	1 year
15854958	Passman[141]	2005	Covariate	Protective	Cancer patients who were in sinus rhythm before surgery before undergoing major non-cardiac thoracic surgery	Post-operative atrial fibrillation	Age, Sex, HR	856	45.1%	147	64.6 (10.6)	Hospitalization period
17544079	Rogers[142]	2007	Covariate	Harmful	Patients from Veteran's Administration medical centers and private sector hospitals who underwent major general or vascular procedures	Post-operative deep venous thromboembolism	Respiratory and Hemic vs Endocrine, Thoracoabdominal vs Endocrine, Stomach/Intestines vs Endocrine, Mouth/Palate vs Endocrine, Aneurysm vs Endocrine, Work RVU, ASA Physical Status, Disseminated Cancer, Ventilator Dependent, Hernia vs Endocrine, Chemotherapy for Malignancy, Sodium, Transfusion, Emergency, Wound Class, Sex, Hematocrit, Bilirubin, Dyspnea, Albumin	182783	19.8%	1162	60.3 (14.3)	30 days
20453069	Decousus[143]	2011	Covariate	Protective	Patients who were admitted to the hospital (duration > 3 days) for an acute medical illness	In-hospital bleeding within 14 days of admission	Active Ulcer, Prior Bleeding, Platelet Count, Age, Hepatic Failure, Renal Failure, ICU, Catheter, Cancer, Rheumatic Disease, Sex	9388	50.60%	198	NR	Hospitalization period
21818020	Cook[144]	2011	Covariate	Harmful	Patients 16 years old or older with an ICD-9 code	Blunt cerebrovascular	Cervical Spinal Cord Surgery, Cerebellar or	349121	NR	471	NR	Diagnosis

					consistent with blunt cerebrovascular trauma	injury	Brainstem Injury, Thoracic Spinal Cord Injury, Maxillary or Malar Fracture, Chest Abbreviated Injury Scale, Trauma Mortality Prediction Model, Cervical Spine Fracture/Dislocation, Mandible Fracture, Age, Sex, Traumatic Intracranial Hemorrhage					
14980900	Rohrig[145]	2004	Covariate	Protective	Patients undergoing non-cardiac surgery	Operative cardiovascular events (CVE)	Major Vascular Surgery, Gastrointestinal Surgery, Hematopoietic/Lymphatic Surgery, Neurosurgery, Thoracic Surgery, Valve Disease, Carotid Artery Stenosis, Hypovolemia, Arterial HTN, Chronic Renal Failure, Emergency Surgery, CABG, Arrhythmia, Sex, Age	29437	49.4%	5249	52.7 (18.4)	Hospitalization period
17544078	Davenport[146]	2007	Covariate	Protective	Patients from VA medical centers and private-sector hospitals who underwent major general or vascular procedures	Postoperative cardiac adverse events	ASA Physical Status, Age, Type of Operation, Work RVU, Creatinine, Emergency, WBC, Weight Loss, CHF, Sepsis, Ascites, Bleeding Disorder, Platelet Count, Specialty, Impaired Sensorium, Wound Class, CVA/Stroke with Neurological Deficit, Sex, Dyspnea, Albumin	91403	19.80%	1181	60.3 (14.3)	30 days
21217144	Verheugt[147]	2011	Covariate	Protective	Inception cohort of adults with congenital heart disease followed from the age of 18	Adult-onset infective endocarditis up to 40 or 60 years of age	Pulmonary Atresia, Transposition of Great Arteries, Ventricular Septal Defect, Bicuspid Aortic Valve, Univentricular Heart/Double Inlet Left Ventricle, Infective Endocarditis, Other Congenital Heart Defect, Aortic Stenosis, Atrioventricular Septal Defect, Tetralogy of Fallot, Marfan Syndrome, CVA/TIA, Aortic Coarctation,	10210	51%	233	NR	mean: 18.9 years

							Ebstein Malformation, Multiple Congenital Heart Defects, Pulmonary Stenosis, Sex, Arrhythmia					
21051669	Calvillo-King[148]	2010	Covariate	Harmful	Medicare beneficiaries underwent carotid endarterectomy and were otherwise asymptomatic	Death or nonfatal stroke within 30 days of surgery	Severe Disability, Race, Stenosis, CHF, CAD, VHD, Distant Stroke or TIA, Sex	6553	45.1%	197	74.5 (6.6)	30 days
20728962	Barrett[149]	2011	Covariate	Harmful	Patients presenting in the emergency department with symptomatic atrial fibrillation	30-day adverse event (ED return visit, unscheduled hospitalization, cardiovascular complication, or death)	Smoking, Inadequate Ventricular Rate Control, Dyspnea, Beta Blockers, CHF, Edema, HTN, Age, Sex, COPD, Diuretic Use, Palpitations	832	41.1%	651	63.6 (NR)	30 days
20351233	Eichinger[150]	2010	Covariate	Protective	Patients admitted for first unprovoked venous thromboembolism	Risk of recurrent VTE after discontinuation of anticoagulation	PE vs Distal Thrombosis, Proximal vs Distal Thrombosis, Sex, D-Dimer	929	39.5%	176	NR	43.3 months
18922710	Yamaki[151]	2009	Covariate	Protective	Patients with confirmed cardiopulmonary stable pulmonary embolism who were prospectively evaluated using bilateral lower extremity compression ultrasound	Recurrence of symptomatic venous thromboembolism (VTE) and fatal events	Sex, History of DVT, Cancer, Presence of DVT, Inadequate Anticoagulation, Presence of Proximal DVT, Leg Symptoms	203	61.6%	118	62.8 (15.9)	12 months
19766355	Sun[152]	2009	Covariate	Protective	Patients aged 60 or older with an emergency department discharge diagnosis of syncope	Serious clinical event that occurred during the 30- day period after the initial ED evaluation (death, arrhythmias, MI, a new diagnosis of structural heart disease thought to be related to syncope, PE)	Near-Syncope, Abnormal EKG, Troponin, Age, Arrhythmia, Sex, Triage SBP	2584	54%	173	NR	30 days
19486721	Cruz-Gonzalez[153]	2009	Covariate	Harmful	Patients with moderate or severe mitral stenosis (MS) patients who underwent percutaneous mitral valvuloplasty (PMV)	Percutaneous mitral valvuloplasty (PMV) success	Mitral Valve Area, Mitral Regurgitation, Sex, Echo Score, NYHA Class, Age	800	81.9%	544	54.9 (15.26)	Hospitalization period
19546391	Monin[154]	2009	Covariate	Harmful	Patients with asymptomatic aortic stenosis	Death or aortic valve replacement necessitated by symptoms or by a positive exercise test	Peak Velocity, Sex, BNP, Three-Leaflet Valve, Calcification Score, Transaortic Mean Pressure Gradient, Aortic Valve Area, Indexed Valve Area	104	34%	62	72 (NR)	2 years
18573589	Nishiuchi[155]	2008	Covariate	Protective	Patients who experienced an out-of-	Survival	Witness, CPR to Hospital Arrival Time,	1028	22.8%	202	NR	1 month

					hospital cardiac arrest		Ambulance Call to CPR Time, Sex, Age, Ambulance Call to Defibrillation Time					
16525500	Kim[156]	2006	Covariate	Harmful	Patients with newly diagnosed acute leukemia	Fatal intracranial hemorrhage	Sex, Leukemia, WBC, Prothombin Time, Platelets, Promyelocytic Leukemia, Activated Partial Thromboplastin Time, Age, Hemorrhage Score	792	68.3%	41	42 (17)	mean: 3.8 years
16520853	Ivanov[157]	2006	Covariate	Harmful	Patients who underwent cardiac surgery	Adverse event (operative death, a perioperative MI defined by EKG and enzymatic criteria, low cardiac output syndrome, a perioperative stroke, new postoperative renal failure)	Priority Status, CABG, LVEF, Renal Insufficiency, Other Pathology, Age, Sex, CHF, Recent MI, Left Main Disease, PVD, Triple Vessel Disease, Complex Valve, Diabetes, HTN	12683	27%	1243	61 (12)	Hospitalization period
16308250	Yuan[158]	2006	Covariate	Protective	Population of patients enrolled at routine visit	Vertigo	Triglycerides, SBP, CVD, DBP, Sex, Age, Cholesterol, Fasting Blood Glucose	200	54.5%	100	58.2 (11.26)	NA (case control)
16020800	Aujesky[159]	2005	Covariate	Protective	Patients with pulmonary embolism	Mortality	Age, Altered Mental Status, Cancer, SBP, Pulse, Arterial Oxygen Saturation, Temperature, Respiratory Rate, HF, Chronic Lung Disease, Sex	10354	60.4%	953	NR	30 days
9002560	Karlson[160]	1997	Covariate	Protective	Patients with chest pain/suspected acute myocardial infarction in the emergency department (ED)	Mortality	History of CHF, History of Diabetes, Loss of Consciousness, Unspecific Symptoms, Signs of Acute Ischemia, ST Elevation on EKG, Acute Severe CHF, History of HTN, Age, Sex, Initial Degree of Suspicion of Infarction, Normal Admission EKG	5362	45%	604	63 (NR)	1 year
17380222	McDonald[161]	2007	Covariate	Protective	Patients with non-traumatic chest pain or symptoms suggestive of ischemic heart disease admitted to emergency department	Primary end point: death, nonfatal myocardial infarction or revascularization	ST Deviation on EKG, Sex, Acetylsalicylic Acid Taken Before ER, Risk Factors for CAD, Prior CHF	1054	44%	141	61 (16)	30 days

[a] Directionality of the predictive effect of female sex cannot be determined without considering the following interaction term with sex: $\log(age)^2$ x female, diabetes x female, LVH x male, log(age) x female.

[b] Directionality cannot be determined for this model without considering the following interaction term with sex: diabetes x female.

[c] Directionality cannot be determined for this model without considering the following interaction terms with sex: log(age) x female, diabetes x female.
[d] Directionality cannot be determined for this model because sex is included in this model in an interaction term only: age x sex.
[e] Directionality cannot be determined for this model without considering the following interaction terms with sex: $\log(age)^2$ x female, diabetes x female, log(age) x female.
[f] Directionality cannot be determined for this model because sex is included in this model in an interaction term only: sex x waist circumference.
[g] Directionality cannot be determined for this model without considering the following interaction terms with sex: female x BSA function, female x mitral valve repair, female x mitral valve replacement.
[h] Directionality cannot be determined for this model because sex is included in this model in an interaction term only: valve calcification x sex.

References

1. Bouvy ML, Heerdink ER, Leufkens HG, Hoes AW. Predicting mortality in patients with heart failure: a pragmatic approach. *Heart.* 2003;89:605-609.
2. Adlam D, Silcocks P, Sparrow N. Using BNP to develop a risk score for heart failure in primary care. *European Heart Journal.* 2005;26:1086-1093.
3. Alehagen U, Lindstedt G, Levin LA, Dahlstrom U. The risk of cardiovascular death in elderly patients with possible heart failure. Results from a 6-year follow-up of a Swedish primary care population. *International Journal of Cardiology*. 2005;100:17-27.
4. Pocock SJ, Wang D, Pfeffer MA, Yusuf S, McMurray JJ, Swedberg KB, Ostergren J, Michelson EL, Pieper KS, Granger CB. Predictors of mortality and morbidity in patients with chronic heart failure. *European Heart Journal*. 2006;27:65-75.
5. Levy WC, Mozaffarian D, Linker DT, Sutradhar SC, Anker SD, Cropp AB, Anand I, Maggioni A, Burton P, Sullivan MD, Pitt B, Poole-Wilson PA, Mann DL, Packer M. The Seattle Heart Failure Model: prediction of survival in heart failure. *Circulation*. 2006;113:1424-1433.
6. Rassi A, Jr., Rassi A, Little WC, Xavier SS, Rassi SG, Rassi GG, Hasslocher-Moreno A, Sousa AS, Scanavacca MI. Development and validation of a risk score for predicting death in Chagas' heart disease. *New England Journal of Medicine.* 2006;355:799-808.
7. Miura K, Matsumori A, Nasermoaddeli A, Soyama Y, Morikawa Y, Sakurai M, Kitabatake A, Nagai M, Inaba Y, Nakagawa H. Prognosis and prognostic factors in patients with idiopathic dilated cardiomyopathy in Japan. *Circulation: Official Journal of the Japanese Circulation Society*. 2008;72:343-348.
8. O'Connor CM, Whellan DJ, Wojdyla D, Leifer E, Clare RM, Ellis SJ, Fine LJ, Fleg JL, Zannad F, Keteyian SJ, Kitzman DW, Kraus WE, Rendall D. Factors related to morbidity and mortality in patients with chronic heart failure with systolic dysfunction: the HF-ACTION predictive risk score model. *Circulation: Heart Failure.* 2012;5:63-71.
9. Hannan EL, Arani DT, Johnson LW, Kemp HG, Jr., Lukacik G. Percutaneous transluminal coronary angioplasty in New York State. Risk factors and outcomes. *JAMA*. 1992;268:3092-3097.
10. O'Connor GT, Plume SK, Olmstead EM, Coffin LH, Morton JR, Maloney CT, Nowicki ER, Levy DG, Tryzelaar JF, Hernandez F, Adrian L, Casey KJ, Bundy D, Soule DN, Marrin CAS, Nugent WC, Charlesworth DC, Clough R, Katz S, Leavitt BJ, Wennberg JE. Multivariate prediction of in-hospital mortality associated with coronary artery bypass graft surgery. Northern New England Cardiovascular Disease Study Group. *Circulation.* 1992;85:2110-2118.
11. Wong DT, Cheng DC, Kustra R, Tibshirani R, Karski J, Carroll-Munro J, Sandler A. Risk factors of delayed extubation, prolonged length of stay in the intensive care unit, and mortality in patients undergoing coronary artery bypass graft with fast-track cardiac anesthesia: a new cardiac risk score. *Anesthesiology*. 1999;91:936-944.
12. Moscucci M, Kline-Rogers E, Share D, O'Donnell M, Maxwell-Edward A, Meengs WL, Kraft P, DeFranco AC, Chambers JL, Patel K, McGinnity JG, Eagle KA. Simple bedside additive tool for prediction of in-hospital mortality after percutaneous coronary interventions. *Circulation*. 2001;104:263-268.
13. Zaroff JG, diTommaso DG, Barron HV. A risk model derived from the National Registry of Myocardial Infarction 2 database for predicting mortality after coronary artery bypass grafting during acute myocardial infarction. *American Journal of Cardiology.* 2002;90:1-4.

14. Wu Y, Grunkemeier GL, Handy JR, Jr. Coronary artery bypass grafting: are risk models developed from on-pump surgery valid for off-pump surgery? *Journal of Thoracic and Cardiovascular Surgery*. 2004;127:174-178.

15. Wu C, Hannan EL, Walford G, Ambrose JA, Holmes DR Jr, King SB 3rd, Clark LT, Katz S, Sharma S, Jones RH. A risk score to predict in-hospital mortality for percutaneous coronary interventions. *Journal of the American College of Cardiology*. 2006;47:654-660.

16. Hannan EL, Wu C, Bennett EV, Carlson RE, Culliford AT, Gold JP, Higgins RS, Isom OW, Smith CR, Jones RH. Risk stratification of in-hospital mortality for coronary artery bypass graft surgery. *Journal of the American College of Cardiology*. 2006;47:661-668.

17. Mehta RH, Grab JD, O'Brien SM, Glower DD, Haan CK, Gammie JS, Peterson ED, Society of Thoracic Surgeons National Cardiac Database Investigators. Clinical characteristics and in-hospital outcomes of patients with cardiogenic shock undergoing coronary artery bypass surgery: insights from the Society of Thoracic Surgeons National Cardiac Database. *Circulation*. 2008;117:876-885.

18. de Mulder M, Gitt A, van Domburg R, Hochadel M, Seabra-Gomes R, Serruys PW, Silber S, Weidinger F, Wijns W, Zeymer U, Hamm C, Boersma E. EuroHeart score for the evaluation of in-hospital mortality in patients undergoing percutaneous coronary intervention. *European Heart Journal*. 2011;32:1398-1408.

19. Hamburger JN, Walsh SJ, Khurana R, Ding L, Gao M, Humphries KH, Carere R, Fung AY, Mildenberger RR, Simkus GJ, Webb JG, Buller CE. Percutaneous coronary intervention and 30-day mortality: the British Columbia PCI risk score. *Catheterization and Cardiovascular Interventions: Official Journal of the Society for Cardiac Angiography & Interventions*. 2009;74:377-385.

20. Grzybowski M, Zalenski RJ, Ross MA, Bock B. A prediction model for prehospital triage of patients with suspected cardiac ischemia. *Journal of Electrocardiology*. 2000;33:253-258.

21. Williams BA, Wright RS, Murphy JG, Brilakis ES, Reeder GS, Jaffe AS. A new simplified immediate prognostic risk score for patients with acute myocardial infarction. *Emergency Medicine Journal: EMJ*. 2006;23:186-192.

22. de Boer SP, Barnes EH, Westerhout CM, Simes RJ, Granger CB, Kastrati A, Widimsky P, de Boer MJ, Zijlstra F, Boersma E. High-risk patients with ST-elevation myocardial infarction derive greatest absolute benefit from primary percutaneous coronary intervention: results from the Primary Coronary Angioplasty Trialist versus thrombolysis (PCAT)-2 collaboration. *American Heart Journal*. 2011;161:500-507.

23. Boersma E, Pieper KS, Steyerberg EW, Wilcox RG, Chang WC, Lee KL, Akkerhuis KM, Harrington RA, Deckers JW, Armstrong PW, Lincoff AM, Califf RM, Topol EJ, Simoons ML. Predictors of outcome in patients with acute coronary syndromes without persistent ST-segment elevation. Results from an international trial of 9461 patients. The PURSUIT Investigators. *Circulation*. 2000;101:2557-2567.

24. Mehran R, Pocock SJ, Nikolsky E, Clayton T, Dangas GD, Kirtane AJ, Parise H, Fahy M, Manoukian SV, Feit F, Ohman ME, Witzenbichler B, Guagliumi G, Lansky AJ, Stone GW. A risk score to predict bleeding in patients with acute coronary syndromes. *Journal of the American College of Cardiology*. 2010;55:2556-2566.

25. Roe MT, Chen AY, Thomas L, Wang TY, Alexander KP, Hammill BG, Gibler WB, Ohman EM, Peterson ED. Predicting long-term mortality in older patients after non-ST-segment elevation myocardial infarction: the CRUSADE long-term mortality model and risk score. *American Heart Journal*. 2011;162:875-883.

26. Marchioli R, Avanzini F, Barzi F, Chieffo C, Di Castelnuovo A, Franzosi MG, Geraci E, Maggioni AP, Marfisi RM, Mininni N, Nicolosi GL, Santini M, Schweiger C, Tavazzi L, Tognoni G, Valagussa F, GISSI-Prevenzione Investigators. Assessment of absolute risk of death after myocardial infarction by use of multiple-risk-factor assessment equations: GISSI-Prevenzione mortality risk chart. *European Heart Journal.* 2001;22:2085-2103.

27. Elhendy A, Mahoney DW, McCully RB, Seward JB, Burger KN, Pellikka PA. Use of a scoring model combining clinical, exercise test, and echocardiographic data to predict mortality in patients with known or suspected coronary artery disease. *American Journal of Cardiology*. 2004;93:1223-1228.

28. Cortigiani L, Bigi R, Gregori D, Sicari R, Picano E. Prognostic value of a multiparametric risk score in patients undergoing dipyridamole stress echocardiography. *American Journal of Cardiology*. 2005;96:529-532.

29. Clayton TC, Lubsen J, Pocock SJ, Voko Z, Kirwan BA, Fox KA, Poole-Wilson PA. Risk score for predicting death, myocardial infarction, and stroke in patients with stable angina, based on a large randomised trial cohort of patients. *BMJ*. 2005;331:869.

30. Rexius H, Brandrup-Wognsen G, Nilsson J, Oden A, Jeppsson A. A simple score to assess mortality risk in patients waiting for coronary artery bypass grafting. *Annals of Thoracic Surgery*. 2006;81:577-582.

31. Anderson JL, Ronnow BS, Horne BD, Carlquist JF, May HT, Bair TL, Jensen KR, Muhlestein JB, Intermountain Heart Collaborative Study Group. Usefulness of a complete blood count-derived risk score to predict incident mortality in patients with suspected cardiovascular disease. *American Journal of Cardiology*. 2007;99:169-174.

32. Yap YG, Duong T, Bland M, Malik M, Torp-Pedersen C, Kober L, Connolly SJ, Gallagher MM, Camm AJ. Potential demographic and baselines variables for risk stratification of high-risk post-myocardial infarction patients in the era of implantable cardioverter-defibrillator--a prognostic indicator. *International Journal of Cardiology*. 2008;126:101-107.

33. Singh M, Rihal CS, Lennon RJ, Spertus J, Rumsfeld JS, Holmes DR, Jr. Bedside estimation of risk from percutaneous coronary intervention: the new Mayo Clinic risk scores. *Mayo Clinic Proceedings*. 2007;82:701-708.

34. Shahian DM, O'Brien SM, Filardo G, Ferraris VA, Haan CK, Rich JB, Normand SL, DeLong ER, Shewan CM, Dokholyan RS, Peterson ED, Edwards FH, Anderson RP, Society of Thoracic Surgeons Quality Measurement Task Force. The Society of Thoracic Surgeons 2008 cardiac surgery risk models: part 3--valve plus coronary artery bypass grafting surgery. *Annals of Thoracic Surgery*. 2009;88:S43-62.

35. Singh M, Holmes DR, Lennon RJ, Rihal CS. Development and validation of risk adjustment models for long-term mortality and myocardial infarction following percutaneous coronary interventions. *Circulation: Cardiovascular Interventions*. 2010;3:423-430.

36. Hubbard BL, Gibbons RJ, Lapeyre AC, 3rd, Zinsmeister AR, Clements IP. Identification of severe coronary artery disease using simple clinical parameters. *Archives of Internal Medicine*. 1992;152:309-312.

37. Morise AP, Haddad WJ, Beckner D. Development and validation of a clinical score to estimate the probability of coronary artery disease in men and women presenting with suspected coronary disease. *American Journal of Medicine*. 1997;102:350-356.

38. Selker HP, Griffith JL, Beshansky JR, Schmid CH, Califf RM, D'Agostino RB, Laks MM, Lee KL, Maynard C, Selvester RH, Wagner GS, Weaver WD. Patient-specific predictions of

outcomes in myocardial infarction for real-time emergency use: a thrombolytic predictive instrument. *Annals of Internal Medicine*. 1997;127:538-556.

39. West MJ, White HD, Simes RJ, Kirby A, Watson JD, Anderson NE, Hankey GJ, Wonders S, Hunt D, Tonkin AM. Risk factors for non-haemorrhagic stroke in patients with coronary heart disease and the effect of lipid-modifying therapy with pravastatin. *Journal of Hypertension*. 2002;20:2513-2517.

40. Charlesworth DC, Likosky DS, Marrin CA, Maloney CT, Quinton HB, Morton JR, Leavitt BJ, Clough RA, O'Connor GT, Northern New England Cardiovascular Disease Study Group. Development and validation of a prediction model for strokes after coronary artery bypass grafting. *Annals of Thoracic Surgery*. 2003;76:436-443.

41. Sadanandan S, Cannon CP, Gibson CM, Murphy SA, DiBattiste PM, Braunwald E, TIMI Study Group. A risk score to estimate the likelihood of coronary artery bypass surgery during the index hospitalization among patients with unstable angina and non-ST-segment elevation myocardial infarction. *Journal of the American College of Cardiology*. 2004;44:799-803.

42. Fowler VG, Jr., O'Brien SM, Muhlbaier LH, Corey GR, Ferguson TB, Peterson ED. Clinical predictors of major infections after cardiac surgery. *Circulation*. 2005;112:358-365.

43. Antunes PE, de Oliveira JF, Antunes MJ. Risk-prediction for postoperative major morbidity in coronary surgery. *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*. 2009;35:760-767.

44. Subherwal S, Bach RG, Chen AY, Gage BF, Rao SV, Newby LK, Wang TY, Gibler WB, Ohman EM, Roe MT, Pollack CV Jr, Peterson ED, Alexander KP. Baseline risk of major bleeding in non-ST-segment-elevation myocardial infarction: the CRUSADE (Can Rapid risk stratification of Unstable angina patients Suppress ADverse outcomes with Early implementation of the ACC/AHA Guidelines) Bleeding Score. *Circulation*. 2009;119:1873-1882.

45. Mehta RH, Sheng S, O'Brien SM, Grover FL, Gammie JS, Ferguson TB, Peterson ED, Society of Thoracic Surgeons National Cardiac Surgery Database Investigators. Reoperation for bleeding in patients undergoing coronary artery bypass surgery: incidence, risk factors, time trends, and outcomes. *Circulation: Cardiovascular Quality and Outcomes*. 2009;2:583-590.

46. Mehran R, Pocock S, Nikolsky E, Dangas GD, Clayton T, Claessen BE, Caixeta A, Feit F, Manoukian SV, White H, Bertrand M, Ohman EM, Parise H, Lansky AJ, Lincoff AM, Stone GW. Impact of bleeding on mortality after percutaneous coronary intervention results from a patient-level pooled analysis of the REPLACE-2 (randomized evaluation of PCI linking angiomax to reduced clinical events), ACUITY (acute catheterization and urgent intervention triage strategy), and HORIZONS-AMI (harmonizing outcomes with revascularization and stents in acute myocardial infarction) trials. *JACC: Cardiovascular Interventions*. 2011;4:654-664.

47. Podolecki TS, Lenarczyk RK, Kowalczyk JP, Mazurek MH, Swiatkowski AM, Chodor PK, Pruszkowska-Skrzep PI, Sedkowska AA, Polonski L, Kalarus ZF. The risk of stroke in patients with acute myocardial infarction treated invasively. *Coronary Artery Disease*. 2012;23:9-15.

48. Magovern JA, Sakert T, Magovern GJ, Benckart DH, Burkholder JA, Liebler GA, Magovern GJ Sr. A model that predicts morbidity and mortality after coronary artery bypass graft surgery. *Journal of the American College of Cardiology*. 1996;28:1147-1153.

49. Fortescue EB, Kahn K, Bates DW. Development and validation of a clinical prediction rule for major adverse outcomes in coronary bypass grafting. *American Journal of Cardiology*. 2001;88:1251-1258.

50. Grayson AD, Moore RK, Jackson M, Rathore S, Sastry S, Gray TP, Schofield I, Chauhan A, Ordoubadi FF, Prendergast B, Stables RH, North West Quality Improvement Programme in Cardiac Interventions. Multivariate prediction of major adverse cardiac events after 9914 percutaneous coronary interventions in the north west of England. *Heart*. 2006;92:658-663.

51. Zhang M, Li J, Cai YM, Ma H, Xiao JM, Liu J, Zhao L, Guo T, Han MH. A risk-predictive score for cardiogenic shock after acute myocardial infarction in Chinese patients. *Clinical Cardiology*. 2007;30:171-176.

52. Santos ES, Timerman A, Baltar VT, Castillo MT, Pereira MP, Minuzzo L, Piegas LS. Dante Pazzanese risk score for non-st-segment elevation acute coronary syndrome. *Arquivos Brasileiros de Cardiologia*. 2009;93:343-351, 336-344.

53. Chen SL, Chen JP, Mintz G, Xu B, Kan J, Ye F, Zhang J, Sun X, Xu Y, Jiang Q, Zhang A, Stone GW. Comparison between the NERS (New Risk Stratification) score and the SYNTAX (Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery) score in outcome prediction for unprotected left main stenting. *JACC: Cardiovascular Interventions*. 2010;3:632-641.

54. Anderson KM, Odell PM, Wilson PW, Kannel WB. Cardiovascular disease risk profiles. *American Heart Journal*. 1991;121:293-298.

55. Wolf PA, D'Agostino RB, Belanger AJ, Kannel WB. Probability of stroke: a risk profile from the Framingham Study. *Stroke*. 1991;22:312-318.

56. D'Agostino RB, Wolf PA, Belanger AJ, Kannel WB. Stroke risk profile: adjustment for antihypertensive medication. The Framingham Study. *Stroke*. 1994;25:40-43.

57. Wilson PW, D'Agostino RB, Levy D, Belanger AM, Silbershatz H, Kannel WB. Prediction of coronary heart disease using risk factor categories. *Circulation*. 1998;97:1837-1847.

58. Kannel WB, D'Agostino RB, Silbershatz H, Belanger AJ, Wilson PW, Levy D. Profile for estimating risk of heart failure. *Archives of Internal Medicine*. 1999;159:1197-1204.

59. Qureshi AI, Janardhan V, Bennett SE, Luft AR, Hopkins LN, Guterman LR. Who should be screened for asymptomatic carotid artery stenosis? Experience from the Western New York Stroke Screening Program. *Journal of Neuroimaging: Official Journal of the American Society of Neuroimaging*. 2001;11:105-111.

60. Lumley T, Kronmal RA, Cushman M, Manolio TA, Goldstein S. A stroke prediction score in the elderly: validation and Web-based application. Journal of Clinical Epidemiology. 2002;55:129-136.

61. Russell MW, Taylor DC, Cummins G, Huse DM. Use of managed care claims data in the risk assessment of venous thromboembolism in outpatients. *American Journal of Managed Care*. 2002;8:S3-9.

62. Ciampi A, Courteau J, Niyonsenga T, Xhignesse M, Lussier-Cacan S, Roy M. Family history and the risk of coronary heart disease: comparing predictive models. *European Journal of Epidemiology*. 2001;17:609-620.

63. Jee SH, Park JW, Lee SY, Nam BH, Ryu HG, Kim SY, Kim YN, Lee JK, Choi SM, Yun JE. Stroke risk prediction model: a risk profile from the Korean study. *Atherosclerosis*. 2008;197:318-325.

64. Assmann G, Schulte H, Cullen P, Seedorf U. Assessing risk of myocardial infarction and stroke: new data from the Prospective Cardiovascular Munster (PROCAM) study. *European Journal of Clinical Investigation*. 2007;37:925-932.

65. Yang X, Ma RC, So WY, Kong AP, Ko GT, Ho CS, Lam CW, Cockram CS, Tong PC, Chan JC. Development and validation of a risk score for hospitalization for heart failure in patients with Type 2 diabetes mellitus. *Cardiovascular Diabetology*. 2008;7:9.

66. Schnabel RB, Sullivan LM, Levy D, Pencina MJ, Massaro JM, D'Agostino RB Sr, Newton-Cheh C, Yamamoto JF, Magnani JW, Tadros TM, Kannel WB, Wang TJ, Ellinor PT, Wolf PA, Vasan RS, Benjamin EJ. Development of a risk score for atrial fibrillation (Framingham Heart Study): a community-based cohort study. *Lancet*. 2009;373:739-745.

67. Kjeldsen SE, Devereux RB, Hille DA, Lyle PA, Dahlof B, Julius S, Edelman JM, Snapinn SM, de Faire U, Fyhrquist F, Ibsen H, Lederballe-Pedersen O, Lindholm LH, Nieminen MS, Omvik P, Oparil S, Wedel H. Predictors of cardiovascular events in patients with hypertension and left ventricular hypertrophy: the Losartan Intervention for Endpoint reduction in hypertension study. *Blood Pressure*. 2009;18:348-361.

68. Wu Y, Zhang L, Yuan X, Wu Y, Yi D. Quantifying links between stroke and risk factors: a study on individual health risk appraisal of stroke in a community of Chongqing. *Neurological Sciences: Official Journal of the Italian Neurological Society and of the Italian Society of Clinical Neurophysiology*. 2011;32:211-219.

69. Chien KL, Su TC, Hsu HC, Chang WT, Chen PC, Sung FC, Chen MF, Lee YT. Constructing the prediction model for the risk of stroke in a Chinese population: report from a cohort study in Taiwan. *Stroke*. 2010;41:1858-1864.

70. Ramos R, Baena-Diez JM, Quesada M, Solanas P, Subirana I, Sala J, Alzamora M, Fores R, Masia R, Elosua R, Grau M, Cordon F, Pera G, Rigo F, Marti R, Ponjoan A, Cerezo C, Brugada R, Marrugat J. Derivation and validation of REASON: a risk score identifying candidates to screen for peripheral arterial disease using ankle brachial index. *Atherosclerosis*. 2011;214:474-479.

71. McGorrian C, Yusuf S, Islam S, Jung H, Rangarajan S, Avezum A, Prabhakaran D, Almahmeed W, Rumboldt Z, Budaj A, Dans AL, Gerstein HC, Teo K, Anand SS, Interheart Investigators. Estimating modifiable coronary heart disease risk in multiple regions of the world: the INTERHEART Modifiable Risk Score. *European Heart Journal*. 2011;32:581-589.

72. Stevens RJ, Kothari V, Adler AI, Stratton IM, United Kingdom Prospective Diabetes Study G. The UKPDS risk engine: a model for the risk of coronary heart disease in Type II diabetes (UKPDS 56). *Clinical Science*. 2001;101:671-679.

73. Folsom AR, Chambless LE, Duncan BB, Gilbert AC, Pankow JS, Atherosclerosis Risk in Communities Study I. Prediction of coronary heart disease in middle-aged adults with diabetes. *Diabetes Care*. 2003;26:2777-2784.

74. Liu J, Hong Y, D'Agostino RB, Sr., Wu Z, Wang W, Sun J, Wilson PW, Kannel WB, Zhao D. Predictive value for the Chinese population of the Framingham CHD risk assessment tool compared with the Chinese Multi-Provincial Cohort Study. *JAMA*. 2004;291:2591-2599.

75. Donnan PT, Donnelly L, New JP, Morris AD. Derivation and validation of a prediction score for major coronary heart disease events in a U.K. type 2 diabetic population. *Diabetes Care*. 2006;29:1231-1236.

76. Woodward M, Brindle P, Tunstall-Pedoe H, SIGN Group on Risk Estimation. Adding social deprivation and family history to cardiovascular risk assessment: the ASSIGN score from the Scottish Heart Health Extended Cohort (SHHEC). *Heart*. 2007;93:172-176.

77. Mainous AG, 3rd, Koopman RJ, Diaz VA, Everett CJ, Wilson PW, Tilley BC. A coronary heart disease risk score based on patient-reported information. *American Journal of Cardiology*. 2007;99:1236-1241.

78. Hippisley-Cox J, Coupland C, Vinogradova Y, Robson J, May M, Brindle P. Derivation and validation of QRISK, a new cardiovascular disease risk score for the United Kingdom: prospective open cohort study. *BMJ*. 2007;335:136.

79. D'Agostino RB, Sr., Vasan RS, Pencina MJ, Wolf PA, Cobain M, Massaro JM, Kannel WB. General cardiovascular risk profile for use in primary care: the Framingham Heart Study. *Circulation*. 2008;117:743-753.

80. Cederholm J, Eeg-Olofsson K, Eliasson B, Zethelius B, Nilsson PM, Gudbjornsdottir S. Risk prediction of cardiovascular disease in type 2 diabetes: a risk equation from the Swedish National Diabetes Register. *Diabetes Care*. 2008;31:2038-2043.

81. Wilson PW, Bozeman SR, Burton TM, Hoaglin DC, Ben-Joseph R, Pashos CL. Prediction of first events of coronary heart disease and stroke with consideration of adiposity. *Circulation*. 2008;118:124-130.

82. Teramoto T, Ohashi Y, Nakaya N, Yokoyama S, Mizuno K, Nakamura H, MEGA Study Group. Practical risk prediction tools for coronary heart disease in mild to moderate hypercholesterolemia in Japan: originated from the MEGA study data. *Circulation Journal: Official Journal of the Japanese Circulation Society*. 2008;72:1569-1575.

83. Maracy MR, Hosseini SM, Amini M. Risk scores in ischaemic heart disease patients with type 2 diabetes, Isfahan, Iran. *Acta Cardiologica*. 2008;63:729-734.

84. Arima H, Yonemoto K, Doi Y, Ninomiya T, Hata J, Tanizaki Y, Fukuhara M, Matsumura K, Iida M, Kiyohara Y. Development and validation of a cardiovascular risk prediction model for Japanese: the Hisayama study. *Hypertension Research: Official Journal of the Japanese Society of Hypertension*. 2009;32:1119-1122.

85. Sacco RL, Khatri M, Rundek T, Xu Q, Gardener H, Boden-Albala B, Di Tullio MR, Homma S, Elkind MS, Paik MC. Improving global vascular risk prediction with behavioral and anthropometric factors. The multiethnic NOMAS (Northern Manhattan Cohort Study). *Journal of the American College of Cardiology*. 2009;54:2303-2311.

86. Zgibor JC, Ruppert K, Orchard TJ, Soedamah-Muthu SS, Fuller J, Chaturvedi N, Roberts MS. Development of a coronary heart disease risk prediction model for type 1 diabetes: the Pittsburgh CHD in Type 1 Diabetes Risk Model. *Diabetes Research and Clinical Practice*. 2010;88:314-321.

87. Zethelius B, Eliasson B, Eeg-Olofsson K, Svensson AM, Gudbjornsdottir S, Cederholm J. A new model for 5-year risk of cardiovascular disease in type 2 diabetes, from the Swedish National Diabetes Register (NDR). *Diabetes Research and Clinical Practice*. 2011;93:276-284.

88. Kang GD, Guo L, Guo ZR, Hu XS, Wu M, Yang HT. Continuous metabolic syndrome risk score for predicting cardiovascular disease in the Chinese population. *Asia Pacific Journal of Clinical Nutrition*. 2012;21:88-96.

89. Tu JV, Jaglal SB, Naylor CD. Multicenter validation of a risk index for mortality, intensive care unit stay, and overall hospital length of stay after cardiac surgery. Steering Committee of the Provincial Adult Cardiac Care Network of Ontario. *Circulation*. 1995;91:677-684.

90. Nashef SA, Roques F, Michel P, Gauducheau E, Lemeshow S, Salamon R. European system for cardiac operative risk evaluation (EuroSCORE). *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*. 1999;16:9-13.

91. Bernstein AD, Parsonnet V. Bedside estimation of risk as an aid for decision-making in cardiac surgery. *Annals of Thoracic Surgery*. 2000;69:823-828.

92. Huijskes RV, Rosseel PM, Tijssen JG. Outcome prediction in coronary artery bypass grafting and valve surgery in the Netherlands: development of the Amphiascore and its comparison with the Euroscore. *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*. 2003;24:741-749.

93. Nowicki ER, Birkmeyer NJ, Weintraub RW, Leavitt BJ, Sanders JH, Dacey LJ, Clough RA, Quinn RD, Charlesworth DC, Sisto DA, Uhlig PN, Olmstead EM, O'Connor GT, Northern New England Cardiovascular Disease Study Group. Multivariable prediction of in-hospital mortality associated with aortic and mitral valve surgery in Northern New England. *Annals of Thoracic Surgery*. 2004;77:1966-1977.

94. Ambler G, Omar RZ, Royston P, Kinsman R, Keogh BE, Taylor KM. Generic, simple risk stratification model for heart valve surgery. *Circulation*. 2005;112:224-231.

95. Jin R, Grunkemeier GL, Starr A, Providence Health System Cardiovascular Study G. Validation and refinement of mortality risk models for heart valve surgery. *Annals of Thoracic Surgery*. 2005;80:471-479.

96. Hannan EL, Wu C, Bennett EV, Carlson RE, Culliford AT, Gold JP, Higgins RS, Smith CR, Jones RH. Risk index for predicting in-hospital mortality for cardiac valve surgery. *Annals of Thoracic Surgery*. 2007;83:921-929.

97. Nissinen J, Biancari F, Wistbacka JO, Loponen P, Teittinen K, Tarkiainen P, Koivisto SP, Tarkka M. Is it possible to improve the accuracy of EuroSCORE? *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*. 2009;36:799-804.

98. O'Brien SM, Shahian DM, Filardo G, Ferraris VA, Haan CK, Rich JB, Normand SL, DeLong ER, Shewan CM, Dokholyan RS, Peterson ED, Edwards FH, Anderson RP, Society of Thoracic Surgeons Quality Measurement TAsk Force. The Society of Thoracic Surgeons 2008 cardiac surgery risk models: part 2--isolated valve surgery. *Annals of Thoracic Surgery*. 2009;88:S23-42.

99. Hankey GJ, Slattery JM, Warlow CP. Transient ischaemic attacks: which patients are at high (and low) risk of serious vascular events? *Journal of Neurology, Neurosurgery, and Psychiatry*. 1992;55:640-652.

100. Lisk DR, Pasteur W, Rhoades H, Putnam RD, Grotta JC. Early presentation of hemispheric intracerebral hemorrhage: prediction of outcome and guidelines for treatment allocation. *Neurology*. 1994;44:133-139.

101. Rothwell PM, Warlow CP. Prediction of benefit from carotid endarterectomy in individual patients: a risk-modelling study. European Carotid Surgery Trialists' Collaborative Group. *Lancet*. 1999;353:2105-2110.

102. Kent DM, Selker HP, Ruthazer R, Bluhmki E, Hacke W. The stroke-thrombolytic predictive instrument: a predictive instrument for intravenous thrombolysis in acute ischemic stroke. *Stroke*. 2006;37:2957-2962.

103. Koopman K, Uyttenboogaart M, Vroomen PC, van der Meer J, De Keyser J, Luijckx GJ. Development and validation of a predictive outcome score of cerebral venous thrombosis. *Journal of the Neurological Sciences*. 2009;276:66-68.

104. Ferro JM, Bacelar-Nicolau H, Rodrigues T, Bacelar-Nicolau L, Canhao P, Crassard I, Bousser MG, Dutra AP, Massaro A, Mackowiack-Cordiolani MA, Leys D, Fontes J, Stam J, Barinagarrementeria F. Risk score to predict the outcome of patients with cerebral vein and dural sinus thrombosis. *Cerebrovascular Diseases*. 2009;28:39-44.

105. Arboix A, Garcia-Eroles L, Massons J, Oliveres M. Predictive clinical factors of in-hospital mortality in 231 consecutive patients with cardioembolic cerebral infarction. *Cerebrovascular Diseases*. 1998;8:8-13.

106. Roquer J, Ois A, Rodriguez Campello A, Gomis M, Munteis E, Jimenez Conde J, Martinez-Rodriguez JE. Clustering of vascular risk factors and in-hospital death after acute ischemic stroke. *Journal of Neurology*. 2007;254:1636-1641.

107. Saposnik G, Kapral MK, Liu Y, Hall R, O'Donnell M, Raptis S, Tu JV, Mamdani M, Austin PC, Investigators of the Registry of the Canadian Stroke Network, Stroke Outcomes Research Canada Working Group. IScore: a risk score to predict death early after hospitalization for an acute ischemic stroke. *Circulation*. 2011;123:739-749.

108. Kuijer PM, Hutten BA, Prins MH, Buller HR. Prediction of the risk of bleeding during anticoagulant treatment for venous thromboembolism. *Archives of Internal Medicine*. 1999;159:457-460.

109. Kahn SR, Joseph L, Abenhaim L, Leclerc JR. Clinical prediction of deep vein thrombosis in patients with leg symptoms. *Thrombosis and Haemostasis*. 1999;81:353-357.

110. Miniati M, Monti S, Bottai M. A structured clinical model for predicting the probability of pulmonary embolism. *American Journal of Medicine*. 2003;114:173-179.

111. Constans J, Boutinet C, Salmi LR, Saby JC, Nelzy ML, Baudouin P, Sampoux F, Marchand JM, Boutami C, Dehant V, Pulci S, Gauthier JP, Cacareigt-Bourdenx V, Barcat D, Conri C. Comparison of four clinical prediction scores for the diagnosis of lower limb deep venous thrombosis in outpatients. *American Journal of Medicine*. 2003;115:436-440.

112. Chen JY, Chao TH, Guo YL, Hsu CH, Huang YY, Chen JH, Lin LJ. A simplified clinical model to predict pulmonary embolism in patients with acute dyspnea. *International Heart Journal*. 2006;47:259-271.

113. Miniati M, Bottai M, Monti S, Salvadori M, Serasini L, Passera M. Simple and accurate prediction of the clinical probability of pulmonary embolism. *American Journal of Respiratory and Critical Care Medicine*. 2008;178:290-294.

114. Urbonavicius S, Vorum H, Urbonaviciene G, Trumpickas M, Pavalkis D, Honore B. Predictors of post-operative mortality following treatment for non-ruptured abdominal aortic aneurysm. *Current Controlled Trials in Cardiovascular Medicine*. 2005;6:14.

115. Giles KA, Schermerhorn ML, O'Malley AJ, Cotterill P, Jhaveri A, Pomposelli FB, Landon BE. Risk prediction for perioperative mortality of endovascular vs open repair of abdominal aortic aneurysms using the Medicare population. *Journal of Vascular Surgery*. 2009;50:256-262.

116. Egorova N, Giacovelli JK, Gelijns A, Greco G, Moskowitz A, McKinsey J, Kent KC. Defining high-risk patients for endovascular aneurysm repair. *Journal of Vascular Surgery*. 2009;50:1271-1279.

117. Grant SW, Grayson AD, Purkayastha D, Wilson SD, McCollum C, Participants in the Vascular Governance North West P. Logistic risk model for mortality following elective abdominal aortic aneurysm repair. *British Journal of Surgery*. 2011;98:652-658.

118. Knuiman MW, Vu HT. Prediction of coronary heart disease mortality in Busselton, Western Australia: an evaluation of the Framingham, national health epidemiologic follow up study, and WHO ERICA risk scores. *Journal of Epidemiology and Community Health*. 1997;51:515-519.

119. Kornitzer M, Koyunco R. Multifactorial approach to the prevention of coronary heart disease: from computer to paper and pencil? *Journal of Cardiovascular Risk*. 2000;7:201-207.

120. Pocock SJ, McCormack V, Gueyffier F, Boutitie F, Fagard RH, Boissel JP. A score for predicting risk of death from cardiovascular disease in adults with raised blood pressure, based on individual patient data from randomised controlled trials. *BMJ*. 2001;323:75-81.

121. Conroy RM, Pyorala K, Fitzgerald AP, Sans S, Menotti A, De Backer G, De Bacquer D, Ducimetiere P, Jousilahti P, Keil U, Njolstad I, Oganov RG, Thomsen T, Tunstall-Pedoe H, Tverdal A, Wedel H, Whincup P, Wilhelmsen L, Graham IM, SCORE Project Group. Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. *European Heart Journal*. 2003;24:987-1003.

122. Balkau B, Hu G, Qiao Q, Tuomilehto J, Borch-Johnsen K, Pyorala K, DECODE Study Group, European Diabetes Epidemiology Group. Prediction of the risk of cardiovascular mortality using a score that includes glucose as a risk factor. The DECODE Study. *Diabetologia*. 2004;47:2118-2128.

123. Porock D, Oliver DP, Zweig S, Rantz M, Mehr D, Madsen R, Petroski G. Predicting death in the nursing home: development and validation of the 6-month Minimum Data Set mortality risk index. *Journals of Gerontology Series A, Biological Sciences and Medical Sciences*. 2005;60:491-498.

124. Cabin HS, Clubb KS, Hall C, Perlmutter RA, Feinstein AR. Risk for systemic embolization of atrial fibrillation without mitral stenosis. *American Journal of Cardiology*. 1990;65:1112-1116.

125. Hart RG, Pearce LA, McBride R, Rothbart RM, Asinger RW. Factors associated with ischemic stroke during aspirin therapy in atrial fibrillation: analysis of 2012 participants in the SPAF I-III clinical trials. The Stroke Prevention in Atrial Fibrillation (SPAF) Investigators. *Stroke*. 1999;30:1223-1229.

126. Wang TJ, Massaro JM, Levy D, Vasan RS, Wolf PA, D'Agostino RB, Larson MG, Kannel WB, Benjamin EJ. A risk score for predicting stroke or death in individuals with new-onset atrial fibrillation in the community: the Framingham Heart Study. *JAMA*. 2003;290:1049-1056.

127. Shireman TI, Mahnken JD, Howard PA, Kresowik TF, Hou Q, Ellerbeck EF. Development of a contemporary bleeding risk model for elderly warfarin recipients. *Chest*. 2006;130:1390-1396.

128. Lip GY, Nieuwlaat R, Pisters R, Lane DA, Crijns HJ. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the euro heart survey on atrial fibrillation. *Chest.* 2010;137:263-272.

129. Mathews R, Peterson ED, Chen AY, Wang TY, Chin CT, Fonarow GC, Cannon CP, Rumsfeld JS, Roe MT, Alexander KP. In-hospital major bleeding during ST-elevation and non-ST-elevation myocardial infarction care: derivation and validation of a model from the ACTION Registry(R)-GWTG. *American Journal of Cardiology*. 2011;107:1136-1143.

130. Tuman KJ, McCarthy RJ, March RJ, Najafi H, Ivankovich AD. Morbidity and duration of ICU stay after cardiac surgery. A model for preoperative risk assessment. *Chest*. 1992;102:36-44.

131. Lim E, Ali ZA, Barlow CW, Jackson CH, Hosseinpour AR, Halstead JC, Barlow JB, Wells FC. A simple model to predict coronary disease in patients undergoing operation for mitral regurgitation. *Annals of Thoracic Surgery*. 2003;75:1820-1825.

132. Selker HP, Griffith JL, D'Agostino RB. A tool for judging coronary care unit admission appropriateness, valid for both real-time and retrospective use. A time-insensitive predictive instrument (TIPI) for acute cardiac ischemia: a multicenter study. *Medical Care*. 1991;29:610-627.

133. Ngako A, Santin A, Hemery F, Salloum M, Calmettes MJ, Herve J, Grego JC, Roupie E, Maison P, Renaud B. Prediction of myocardial infarction risk in older patients with acute coronary syndrome. *American Journal of Emergency Medicine*. 2009;27:675-682.

134. Gencer B, Vaucher P, Herzig L, Verdon F, Ruffieux C, Bosner S, Burnand B, Bischoff T, Donner-Banzhoff N, Favrat B. Ruling out coronary heart disease in primary care patients with chest pain: a clinical prediction score. *BMC Medicine*. 2010;8:9.

135. Bosner S, Haasenritter J, Becker A, Karatolios K, Vaucher P, Gencer B, Herzig L, Heinzel-Gutenbrunner M, Schaefer JR, Abu Hani M, Keller H, Sonnichsen AC, Baum E, Donner-Banzhoff N. Ruling out coronary artery disease in primary care: development and validation of a simple prediction rule. *CMAJ: Canadian Medical Association Journal*. 2010;182:1295-1300.

136. Anyanwu AC, Rogers CA, Murday AJ. A simple approach to risk stratification in adult heart transplantation. *European Journal of Cardio-thoracic Surgery: Official Journal of the European Association for Cardio-thoracic Surgery*. 1999;16:424-428.

137. Haines DE, Wang Y, Curtis J. Implantable cardioverter-defibrillator registry risk score models for acute procedural complications or death after implantable cardioverter-defibrillator implantation. *Circulation*. 2011;123:2069-2076.

138. Bouleti C, Iung B, Laouenan C, Himbert D, Brochet E, Messika-Zeitoun D, Detaint D, Garbarz E, Cormier B, Michel PL, Mentre F, Vahanian A. Late results of percutaneous mitral commissurotomy up to 20 years: development and validation of a risk score predicting late functional results from a series of 912 patients. *Circulation*. 2012;125:2119-2127.

139. Holme I, Pedersen TR, Boman K, Egstrup K, Gerdts E, Kesaniemi YA, Malbecq W, Ray S, Rossebo AB, Wachtell K, Willenheimer R, Gohlke-Barwolf C. A risk score for predicting mortality in patients with asymptomatic mild to moderate aortic stenosis. *Heart*. 2012;98:377-383.

140. Weiss ES, Allen JG, Arnaoutakis GJ, George TJ, Russell SD, Shah AS, Conte JV. Creation of a quantitative recipient risk index for mortality prediction after cardiac transplantation (IMPACT). *Annals of Thoracic Surgery*. 2011;92:914-921.

141. Passman RS, Gingold DS, Amar D, Lloyd-Jones D, Bennett CL, Zhang H, Rusch VW. Prediction rule for atrial fibrillation after major noncardiac thoracic surgery. *Annals of Thoracic Surgery*. 2005;79:1698-1703.

142. Rogers SO, Jr., Kilaru RK, Hosokawa P, Henderson WG, Zinner MJ, Khuri SF. Multivariable predictors of postoperative venous thromboembolic events after general and vascular surgery: results from the patient safety in surgery study. *Journal of the American College of Surgeons*. 2007;204:1211-1221.

143. Decousus H, Tapson VF, Bergmann JF, Chong BH, Froehlich JB, Kakkar AK, Merli GJ, Monreal M, Nakamura M, Pavanello R, Pini M, Piovella F, Spencer FA, Spyropoulos AC, Turpie AG, Zotz RB, Fitzgerald G, Anderson FA, IMPROVE Investigators. Factors at admission associated with bleeding risk in medical patients: findings from the IMPROVE investigators. *Chest*. 2011;139:69-79.

144. Cook A, Osler T, Gaudet M, Berne J, Norwood S. Blunt cerebrovascular injury is poorly predicted by modeling with other injuries: analysis of NTDB data. *Journal of Trauma*. 2011;71:114-119.

145. Rohrig R, Junger A, Hartmann B, Klasen J, Quinzio L, Jost A, Benson M, Hempelmann G. The incidence and prediction of automatically detected intraoperative cardiovascular events in noncardiac surgery. *Anesthesia and Analgesia*. 2004;98:569-577.

146. Davenport DL, Ferraris VA, Hosokawa P, Henderson WG, Khuri SF, Mentzer RM, Jr. Multivariable predictors of postoperative cardiac adverse events after general and vascular surgery: results from the patient safety in surgery study. *Journal of the American College of Surgeons*. 2007;204:1199-1210.

147. Verheugt CL, Uiterwaal CS, van der Velde ET, Meijboom FJ, Pieper PG, Veen G, Stappers JL, Grobbee DE, Mulder BJ. Turning 18 with congenital heart disease: prediction of infective endocarditis based on a large population. *European Heart Journal*. 2011;32:1926-1934.

148. Calvillo-King L, Xuan L, Zhang S, Tuhrim S, Halm EA. Predicting risk of perioperative death and stroke after carotid endarterectomy in asymptomatic patients: derivation and validation of a clinical risk score. *Stroke*. 2010;41:2786-2794.

149. Barrett TW, Martin AR, Storrow AB, Jenkins CA, Harrell FE Jr, Russ S, Roden DM, Darbar D. A clinical prediction model to estimate risk for 30-day adverse events in emergency department patients with symptomatic atrial fibrillation. *Annals of Emergency Medicine*. 2011;57:1-12.

150. Eichinger S, Heinze G, Jandeck LM, Kyrle PA. Risk assessment of recurrence in patients with unprovoked deep vein thrombosis or pulmonary embolism: the Vienna prediction model. *Circulation*. 2010;121:1630-1636.

151. Yamaki T, Nozaki M, Sakurai H, Takeuchi M, Soejima K, Kono T. Presence of lower limb deep vein thrombosis and prognosis in patients with symptomatic pulmonary embolism: preliminary report. *European Journal of Vascular and Endovascular Surgery: The Official Journal of the European Society for Vascular Surgery*. 2009;37:225-231.

152. Sun BC, Derose SF, Liang LJ, Gabayan GZ, Hoffman JR, Moore AA, Mower WR, Mangione CM. Predictors of 30-day serious events in older patients with syncope. *Annals of Emergency Medicine*. 2009;54:769-778.

153. Cruz-Gonzalez I, Sanchez-Ledesma M, Sanchez PL, Martin-Moreiras J, Jneid H, Rengifo-Moreno P, Inglessis-Azuaje I, Maree AO, Palacios IF. Predicting success and long-term outcomes of percutaneous mitral valvuloplasty: a multifactorial score. *American Journal of Medicine*. 2009;122:581.

154. Monin JL, Lancellotti P, Monchi M, Lim P, Weiss E, Pierard L, Gueret P. Risk score for predicting outcome in patients with asymptomatic aortic stenosis. *Circulation*. 2009;120:69-75.

155. Nishiuchi T, Hayashino Y, Fukuhara S, Iwami T, Hayashi Y, Hiraide A, Ikeuchi H, Yukioka H, Matsuoka T. Survival rate and factors associated with 1-month survival of witnessed out-of-hospital cardiac arrest of cardiac origin with ventricular fibrillation and pulseless ventricular tachycardia: the Utstein Osaka project. *Resuscitation*. 2008;78:307-313.

156. Kim H, Lee JH, Choi SJ, Lee JH, Seol M, Lee YS, Kim WK, Lee JS, Lee KH. Risk score model for fatal intracranial hemorrhage in acute leukemia. *Leukemia*. 2006;20:770-776.

157. Ivanov J, Borger MA, Rao V, David TE. The Toronto Risk Score for adverse events following cardiac surgery. *Canadian Journal of Cardiology*. 2006;22:221-227.

158. Yuan BC, Tzeng HM. Developing a predictive model for vertigo using demographic and laboratory data: An evidence-based medicine approach. *Acta Oto-laryngologica*. 2006;126:20-24.

159. Aujesky D, Obrosky DS, Stone RA, Auble TE, Perrier A, Cornuz J, Roy PM, Fine MJ. Derivation and validation of a prognostic model for pulmonary embolism. *American Journal of Respiratory and Critical Care Medicine*. 2005;172:1041-1046.

160. Karlson BW, Herlitz J, Strombom U, Lindqvist J, Oden A, Hjalmarson A. Improvement of ED prediction of cardiac mortality among patients with symptoms suggestive of acute myocardial infarction. *American Journal of Emergency Medicine*. 1997;15:1-7.

161. McDonald MA, Holroyd B, Comeau A, Hervas-Malo M, Welsh RC. Clinical risk scoring beyond initial troponin values: results from a large, prospective, unselected acute chest pain population. *Canadian Journal of Cardiology*. 2007;23:287-292.