# THE LANCET

## Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Rapsomaniki E, Timmis A, George J, et al. Blood pressure and incidence of twelve cardiovascular diseases: lifetime risks, healthy life-years lost, and age-specific associations in 1.25 million people. *Lancet* 2014; **383**: 1899–911.

Table S 1 Overview of codes used to define each cardiovascular endpoints and data sources. Details of how these codes are combined are given in the CALIBER data portal

Endpoint	CPRD – Read codes	MINAP – specific disease registry	HES – OPCS 4 hospital procedures	HES – ICD 10 hospital diagnoses†	ONS – ICD 10 causes of death‡
Stable angina	<ul> <li>G3300: Stable Angina</li> <li>G33z.00: Angina pectoris NOS + 19 other Read codes for diagnosis of stable angina pectoris.</li> <li>G33z400: Ischaemic chest pain</li> <li>Coded test results associated with 33 Read codes for coronary angiography or</li> <li>139 Read codes for myocardial ischaemia tests (resting ECG, exercise ECG, stress echo, radioisotope scan)</li> <li>57 Read codes for coronary artery bypass graft</li> <li>28 Read codes for percutaneous coronary intervention</li> <li>Two or more successive prescriptions for antianginals.</li> </ul>	nu	K40-K46: Coronary artery bypass graft. K49, K50 and K75: Percutaneous coronary intervention	I20.1: Angina pectoris with documented spasm I20.8: Other forms of angina pectoris I20.9: Angina pectoris, unspecified	nu
Unstable angina	G311500: Acute coronary syndrome G311100: Unstable angina + 10 other Read codes for unstable angina	Discharge diagnosis of acute coronary syndrome without raised troponin	Lack of coronary artery bypass graft or percutaneous coronary intervention record in the same hospital spell as 120.9 implies admission for unstable angina	<ul> <li>I20.0: Unstable angina.</li> <li>I24.0: Coronary thrombosis not resulting in MI.</li> <li>I24.8: Other forms of ischaemic heart disease.</li> <li>I24.9: Acute ischaemic heart disease, unspecified.</li> <li>'I20.9: Angina pectoris, unspecified' without coronary artery bypass graft or percutaneous coronary intervention in the same hospital spell</li> </ul>	nu
Coronary heart disease not otherwise specified	G300: Ischaemic heart disease + 29 other Read codes	nu	nu	I25 (CHD NOS, chronic ischaemic heart disease, silent MI) except 'I25.2: Old MI'	nu

Non-fatal acute Myocardial Infarction (MI)	<ul> <li>G30X000: Acute ST segment elevation myocardial infarction.</li> <li>G307100: Acute non-ST segment elevation myocardial infarction.</li> <li>G3015: MI Acute myocardial infarction + 53 other Read codes</li> <li>7929100: Percut transluminal coronary thrombolysis with streptokinase + 3 other Read codes for coronary thrombolysis</li> <li>Elevated cardiac markers, troponin or CKMB results associated with 16 Read codes</li> </ul>	MI with or without ST elevation based on initial ECG findings, raised troponins and clinical diagnosis.	K50.2: Percutaneous transluminal coronary thrombolysis using streptokinase K50.3: Percutaneous transluminal injection of therapeutic substance into coronary artery NEC	I21: Acute MI. I22: Subsequent MI	nu
Unheralded coronary death	Any CVD excluded.	Any CVD excluded.	Any CVD excluded.	Any CVD excluded.	120-125: Ischaemic heart disease
Heart failure	G5800: Heart Failure + 40 other Read codes for heart failure 585f.00: Echocardiogram shows left ventricular systolic dysfunction 585g.00: Echocardiogram shows left ventricular diastolic dysfunction	nu	nu	<ul> <li>I11.0: Hypertensive heart disease with (congestive) heart failure</li> <li>I13.0: Hypertensive heart and renal disease with (congestive) heart failure</li> <li>I13.2: Hypertensive heart and renal disease with both (congestive) heart failure and renal disease</li> <li>I50: Heart failure</li> </ul>	<ul> <li>111.0 Hypertensive heart disease with (congestive) heart failure</li> <li>113.0: Hypertensive heart and renal disease with (congestive) heart failure</li> <li>113.2: Hypertensive heart and renal disease with both (congestive) heart failure and renal disease</li> <li>150 Heart failure</li> </ul>
Ventricular arrhythmias, cardioversion, cardiac arrest and sudden cardiac death	G757.00: Cardiac arrest + 30 other Read codes for ventricular fibrillation, asystole, cardiac arrest, cardiac resuscitation G575100: Sudden cardiac death, so described	nu	X50: External resuscitation. K59: Cardioverter defibrillator introduced through the vein	I46.0: Cardiac arrest with successful resuscitationI46.1: Sudden cardiac death, so describedI46.9: Cardiac arrest, unspecifiedI47.0: Re-entry ventricular arrhythmiaI47.2: Ventricular tachycardiaI49.0: Ventricular fibrillation and flutter	<ul> <li>146.0: Cardiac arrest with successful resuscitation</li> <li>146.1: Sudden cardiac death, so described</li> <li>146.9: Cardiac arrest, unspecified</li> <li>147.0: Re-entry ventricular arrhythmia</li> <li>147.2: Ventricular tachycardia</li> <li>149.0: Ventricular fibrillation and flutter</li> </ul>

Transient ischaemic attack	G6512: Transient ischaemic attack + 5 other Read codes	nu	nu	G45.8-G45.9: Transient cerebral ischaemic attack	nu
Ischaemic stroke	<ul> <li>G6411: CVA – cerebral artery occlusion + 9 other Read codes</li> <li>7A20311: Carotid endarterectomy and patch + 4 other Read codes for carotid endarterectomy within 90 days of stroke not otherwise specified denote ischaemic stroke</li> </ul>	nu	L29.5: Endarterectomy of carotid artery NEC + 3 other codes for carotid endarterectomy or stenting within 90 days of stroke not otherwise specified denote ischaemic stroke	I63: Cerebral infarction.	I63: Cerebral infarction.
Stroke not otherwise specified	G6600: Stroke and cerebrovascular accident unspecified + 14 other Read codes	nu	U54.3 Delivery of rehabilitation for stroke	I64: Stroke, not specified as haemorrhage or infarction G46.3-G46.7: Stroke syndromes	<ul><li>I64: Stroke, not specified as haemorrhage or infarction</li><li>I67.2: Cerebral atherosclerosis</li><li>I67.9: Cerebrovascular disease, unspecified</li></ul>
Subarachnoid haemorrhage	G60X.00: Subarachnoid haemorrh from intracranial artery, unspecif + 2 other Read codes for subarachnoid haemorrhage	nu	Nu	I60: Subarachnoid haemorrhage.	I60: Subarachnoid haemorrhage.
Intracerebral haemorrhage	G6100: Intracerebral haemorrhage + 16 other Read codes for intracerebral haemorrhage.	nu	nu	I61: Intracerebral haemorrhage.	I61: Intracerebral haemorrhage.
Peripheral arterial disease	<ul> <li>63 codes for Lower limb peripheral arterial disease diagnosis (including diabetic PAD, gangrene and intermittent claudication).</li> <li>136 Read codes for peripheral arterial disease procedures</li> <li>2 Read codes for abnormal lower limb angiogram</li> </ul>	nu	L50-L54: Bypass, reconstruction and other open operations on iliac artery. L58-L60, L62: Bypass, reconstruction, transluminal operations or other open operations of femoral artery. L65: Revision of reconstruction of artery.	<ul> <li>I73.1: Thromboangiitis obliterans</li> <li>I73.8: Other specified peripheral vascular diseases</li> <li>I73.9: Peripheral vascular disease, unspecified</li> <li>I74.3: Embolism and thrombosis of arteries of lower extremities</li> <li>I74.4: Embolism and thrombosis of arteries of extremities, unspecified</li> <li>I74.5: Embolism and thrombosis of iliac artery</li> </ul>	<ul> <li>I73.1: Thromboangiitis obliterans</li> <li>I73.8: Other specified peripheral vascular diseases</li> <li>I73.9: Peripheral vascular disease, unspecified</li> <li>I74.3: Embolism and thrombosis of arteries of lower extremities</li> <li>I74.4: Embolism and thrombosis of arteries of extremities, unspecified</li> <li>I74.5: Embolism and thrombosis of iliac artery</li> </ul>

Abdominal aortic	G714.00: Abdominal aortic aneurysm without	nu	L18: Emergency replacement	I71.3: Abdominal aortic aneurysm, ruptured	I71.3: Abdominal aortic aneurysm,
aneurysm	mention of rupture + 12 other Read codes		of aneurysmal segment of aorta L19: Other replacement of aneurysmal segment of aorta L20: Other emergency bypass of segment of aorta L254: Operations on aneurysm of aorta NEC L27: Transluminal insertion of stent graft for aneurysmal segment of aorta L28: Transluminal operations on aneurysmal segment of aorta	<ul> <li>I71.4: Abdominal aortic aneurysm, without mention of rupture</li> <li>I71.5: Thoracoabdominal aortic aneurysm, ruptured</li> <li>I71.6: Thoracoabdominal aortic aneurysm, without mention of rupture</li> <li>I71.8: Aortic aneurysm of unspecified site, ruptured</li> <li>I71.9: Aortic aneurysm of unspecified site, without mention of rupture</li> </ul>	ruptured I71.4: Abdominal aortic aneurysm, without mention of rupture I71.5: Thoracoabdominal aortic aneurysm, ruptured I71.6: Thoracoabdominal aortic aneurysm, without mention of rupture I71.8: Aortic aneurysm of unspecified site, ruptured I71.9: Aortic aneurysm of unspecified site, without mention of rupture

Note: AAA, aortic abdominal aneurysm; MI, myocardial infarction; nu = not used in definition.

†Primary cause of admission.

‡Underlying cause of death.

#### Table S 2 Cohort summary characteristics<sup>1,2,3</sup>.

	SBP <115 & DBP <75 mmHg	SBP 115-139 or DBP 75-89 mmHg	SBP 140-159 or DBP 90-99 mmHg	SBP >160 or >100 mmHg
N patients	202,435	638,658	313,748	103,165
Age, years	38.7 (10.0)	44.9 (13.6)	56.4 (15.0)	63.9 (14.5)
Female sex	155,617 (76.9%)	362,678 (56.8%)	156,672 (49.9%)	57,690 (55.9%)
White ethnicity	99,397 (84.4%)	322,704 (88.9%)	173,824 (93.1%)	60,237 (95.2%)
Most deprived quintile	42,342 (20.9%)	127,486 (20.0%)	60,446 (19.3%)	21,164 (20.5%)
Smoking status <sup>4</sup>				
Ex-smoker	26,524 (15.1%)	92,996 (16.9%)	51,381 (19.8%)	14,266 (17.9%)
Current smoker	43,814 (24.9%)	129,724 (23.6%)	47,217 (18.2%)	12,053 (15.1%)
Medical history				
Diabetes	1,907 (0.9%)	20,198 (3.2%)	17,685 (5.6%)	5,912 (5.7%)
Kidney disease	1,593 (0.8%)	7,215 (1.1%)	4,679 (1.5%)	1,280 (1.2%)
COPD	1,773 (0.9%)	9,436 (1.5%)	7,847 (2.5%)	3,121 (3.0%)
Measurements <sup>4</sup>				,
Body mass index, kg/m <sup>2</sup>	23.1 (21.1-25.7)	25.6 (22.9-28.8)	27.3 (24.4-30.9)	27.5 (24.4-31.2)
Total cholesterol, mmol/L	5.0 (4.3-5.7)	5.2 (4.5-6.0)	5.4 (4.7-6.2)	5.7 (4.9-6.4)
HDL cholesterol, mmol/L	1.4 (1.2-1.7)	1.3 (1.1-1.6)	1.3 (1.1-1.6)	1.3 (1.1-1.6)
Systolic blood pressure, mmHg	106.7 (5.9)	125.1 (7.7)	146.2 (6.6)	167.2 (11.5)
Diastolic blood pressure, mmHg	66.7 (5.1)	77.6 (6.3)	85.5 (7.0)	91.6 (9.3)
Isolated systolic hypertension	0 (0.0%)	0 (0.0%)	208,081 (66.3%)	41,405 (40.1%)
Isolated diastolic hypertension	355 (0.2%)	14,395 (2.3%)	18,670 (6.0%)	1,004 (1.0%)
Statins	1,570 (0.8%)	21,526 (3.4%)	19,798 (6.3%)	4,010 (3.9%)
Blood pressure lowering treatments	21,643 (10.7%)	113,436 (17.8%)	139,753 (44.5%)	66,086 (64.1%)
Thiazide diuretics	746 (0.4%)	16,593 (2.6%)	42,662 (13.6%)	22,964 (22.3%)
Beta-blockers	3,443 (1.7%)	25,632 (4.0%)	36,367 (11.6%)	17,565 (17.0%)
ACEI/ARBs	1,572 (0.8%)	25,491 (4.0%)	43,784 (14.0%)	19,760 (19.2%)
Calcium-channel blockers	454 (0.2%)	11,826 (1.9%)	28,232 (9.0%)	14,419 (14.0%)
Number of baseline BP measurements	2 (1-3)	2 (1-3)	3 (1-7)	4 (1-9)

<sup>1</sup> Patients are classified to the highest category based on their SBP or DBP.

<sup>2</sup>Continuous variables are summarized as median (inter-quartile range), except for systolic and diastolic blood pressure, summarized as mean (standard deviation). Categorical variables are summarized as number (% in the corresponding blood pressure category).

<sup>3</sup> Patients with missing baseline blood pressure measurements (N=679,354) were excluded.

<sup>4</sup> Missing data (%): Smoking status, 15%; Body mass index, 56%; Total cholesterol, 80%; HDL cholesterol, 84%. Abbreviations: ACEI, Angiotensin-converting enzyme inhibitors; ARBs, Alpha-adrenoreceptor blocking drugs; COPD, chronic obstructive pulmonary disease; HDL, high-density lipoprotein cholesterol.

Table S 3 Summary characteristics of people with recorded (main analysis dataset) and missing blood pressure among eligible
patients (N=1,937,360).

	Baseline BP recorded (N=1,258,006)	Baseline BP missing (N=679,354)	P-value for difference*
Age, years	45.0 (34.9-58.9)	40.6 (32.0-52.5)	P<0.0001
Female sex	732,657 (58.2%)	238,561 (35.9%)	P<0.0001
White ethnicity	656,162 (89.8%)	254,958 (92.2%)	P<0.0001
Most deprived quintile	251,438 (20.0%)	136,206 (20.5%)	P<0.0001
Smoking status			
Ex-smoker	185,167 (17.4%)	41,728 (12.4%)	P<0.0001
Current smoker	232,808 (21.8%)	52,550 (15.6%)	P<0.0001
Medical history			
Diabetes	45,702 (3.6%)	3,064 (0.5%)	P<0.0001
Kidney disease	14,767 (1.2%)	2,728 (0.4%)	P<0.0001
COPD	22,177 (1.8%)	7,308 (1.1%)	P<0.0001
Measurements			
Body mass index, kg/m <sup>2</sup>	25.6 (22.8-29.0)	24.9 (22.3-28.3)	P<0.0001
Total cholesterol, mmol/L	5.3 (4.6-6.1)	5.3 (4.6-6.1)	P=0.10
HDL cholesterol, mmol/L	1.3 (1.1-1.6)	1.3 (1.1-1.6)	P=0.03
Medication use			
Thiazide diuretics	82,965 (6.6%)	6,451 (1.0%)	P<0.0001
Beta-blockers	83,007 (6.6%)	9,320 (1.4%)	P<0.0001
ACEI/ARBs	90,607 (7.2%)	5,449 (0.8%)	P<0.0001
Calcium-channel blockers	54,931 (4.4%)	3,203 (0.5%)	P<0.0001
Statins	46,904 (3.7%)	1,568 (0.2%)	P<0.0001

\*Two-sided, with Bonferroni correction for multiple comparisons.

Continuous variables are summarised as median (IQR) and categorical as N (%).

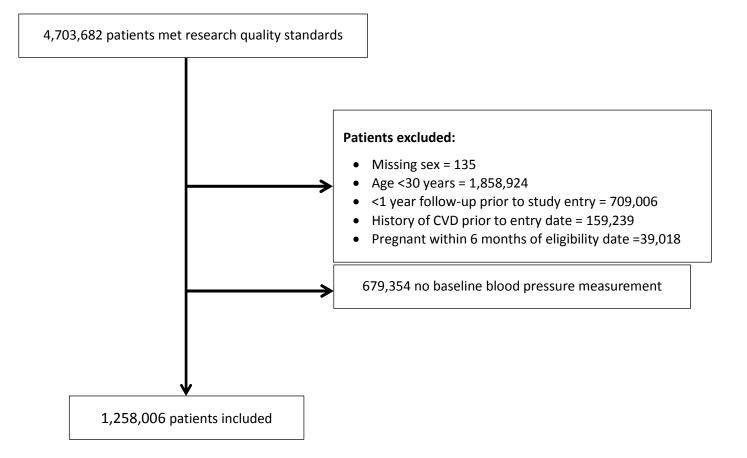
Abbreviations: ACEI, Angiotensin-converting enzyme inhibitors; ARBs, Alpha-adrenoreceptor blocking drugs; COPD, chronic obstructive pulmonary disease; HDL, high-density lipoprotein cholesterol.

## Table S 4 Estimates of lifetime risks and life-years lost to CVD associated with hypertension at different index ages (30, 60, 80) up to age 95.

EVENTS		Lifetin	ne risks	Life-years lost to CVD			
	Normotensives	Hypertensives	Lifetime risk difference	Lifetime risk ratio	All hypertensives	Isolated systolic hypertension	Isolated diastolic hypertension
Index age 30							
Stable angina	4.9 (4.7-5.2)	8.9 (8.7-9.2)	4.0 (3.7, 4.3)	1.82 (1.76-1.87)	1.11 (1.03,1.19)	0.3 (0.26,0.33)	0.02 (-0.01,0.04)
Unstable angina	6.7 (6.4-7.0)	10.1 (9.8-10.3)	3.4 (3.0, 3.7)	1.5 (1.46-1.55)	1.04 (0.95,1.13)	0.21 (0.17,0.25)	0.01 (-0.01,0.04)
Myocardial infarction	5.5 (5.3-5.8)	8.0 (7.8-8.3)	2.5 (2.2, 2.8)	1.45 (1.41-1.49)	0.75 (0.67,0.83)	0.21 (0.17,0.25)	0.06 (0.03,0.08)
Unheralded CHD death	1.9 (1.8-2.1)	2.5 (2.4-2.6)	0.6 (0.3, 0.8)	1.29 (1.22-1.36)	0.15 (0.11,0.2)	0.04 (0.02,0.05)	0.03 (0.01,0.05)
Heart failure	5.2 (4.9-5.6)	7.8 (7.6-8.1)	2.6 (2.2, 3.0)	1.5 (1.44-1.55)	0.58 (0.51,0.64)	0.1 (0.07,0.13)	0.04 (0.02,0.07)
Cardiac arrest/SCD	1.8 (1.7-2.0)	2.3 (2.2-2.4)	0.5 (0.3, 0.7)	1.26 (1.17-1.34)	0.16 (0.11,0.2)	0.01 (-0.01,0.03)	0.03 (0.00,0.05)
Transient ischaemic attack	5.9 (5.6-6.2)	6.5 (6.3-6.7)	0.6 (0.3, 1.0)	1.11 (1.07-1.14)	0.26 (0.18,0.33)	0.06 (0.03,0.09)	0.02 (0.00,0.05)
Ischaemic stroke	6.5 (6.2-6.9)	7.6 (7.3-7.8)	1.0 (0.7, 1.4)	1.16 (1.12-1.2)	0.35 (0.27,0.42)	0.06 (0.03,0.09)	0.00 (-0.03,0.03)
Subarachnoid haemorrhage	0.6 (0.5-0.7)	0.9 (0.7-1.0)	0.3 (0.2, 0.4)	1.48 (1.27-1.68)	0.09 (0.06,0.12)	0.04 (0.02,0.05)	0.00 (-0.01,0.01)
Intracerebral haemorrhage	0.9 (0.8-1.0)	1.3 (1.2-1.4)	0.4 (0.2, 0.5)	1.4 (1.29-1.51)	0.1 (0.07,0.14)	0.03 (0.02,0.04)	0.00 (-0.01,0.02)
Peripheral arterial disease	4.5 (4.2-4.7)	5.8 (5.6-6.0)	1.3 (1.0, 1.6)	1.3 (1.25-1.34)	0.4 (0.33,0.46)	0.14 (0.11,0.17)	-0.01 (-0.03,0.01)
Abdominal aortic aneurysm	1.5 (1.4-1.7)	1.6 (1.5-1.7)	0.1 (-0.1, 0.3)	1.05 (0.97-1.13)	0.04 (0,0.07)	-0.01 (-0.02,0)	0.01 (0.00,0.03)
Total CVD	46.1 (45.5-46.8)	63.3 (62.9-63.8)	17.2 (13.9, 20.5)	1.37 (1.36-1.39)	5.02 (4.84,5.19)	1.18 (1.1,1.26)	0.23 (0.16,0.29)
• • • •							
Index age 60	4.5 (4.3-4.7)	8.1 (7.9-8.4)	3.6 (3.3, 3.9)	1.81 (1.75-1.87)	0.76 (0.71,0.81)	0.36 (0.32,0.4)	0.00 (0.00,0.00)
Stable angina	5.9 (5.6-6.2)	8.6 (8.3-8.9)		1.45 (1.41-1.5)	0.61 (0.55,0.67)	0.24 (0.19,0.28)	0.00 (0.00,0.00)
Unstable angina	5.0 (4.8-5.2)	7.1 (6.9-7.4)	2.7 (2.4, 3.0)	1.43 (1.38-1.48)	0.46 (0.41,0.52)	0.24 (0.19,0.28)	0.00 (0.00,0.00)
Myocardial infarction			2.1 (1.8, 2.4)				
Unheralded CHD death	1.9 (1.8-2.1)	2.4 (2.3-2.6)	0.5 (0.3, 0.7)	1.25 (1.18-1.32)	0.11 (0.07,0.14)	0.05 (0.03,0.08)	0.00 (0.00,0.01)
Heart failure	5.5 (5.2-5.9)	8.0 (7.7-8.3)	2.5 (2.1, 2.9)	1.45 (1.39-1.5)	0.47 (0.41,0.53)	0.17 (0.13,0.21)	0.01 (0.00,0.01)
Cardiac arrest/SCD	1.7 (1.6-1.9)	2.0 (1.9-2.2)	0.3 (0.1, 0.5)	1.16 (1.08-1.24)	0.08 (0.05,0.11)	0.01 (-0.01,0.04)	0.00 (0.00,0.00)
Transient ischaemic attack	5.9 (5.6-6.3)	6.6 (6.4-6.8)	0.6 (0.3, 1.0)	1.11 (1.07-1.15)	0.2 (0.13,0.26)	0.08 (0.04,0.13)	0.00 (0.00,0.00)
Ischaemic stroke	6.6 (6.3-7.0)	7.7 (7.5-8.0)	1.1 (0.7, 1.5)	1.16 (1.12-1.21)	0.27 (0.21,0.34)	0.1 (0.05,0.14)	0.00 (0.00,0.00)
Subarachnoid haemorrhage	0.5 (0.4-0.6)	0.7 (0.6-0.9)	0.3 (0.1, 0.4)	1.52 (1.27-1.77)	0.05 (0.03,0.07)	0.03 (0.02,0.05)	0.00 (0.00,0.00)
Intracerebral haemorrhage	0.9 (0.8-1.0)	1.3 (1.2-1.4)	0.4 (0.2, 0.5)	1.41 (1.3-1.53)	0.08 (0.05,0.1)	0.04 (0.02,0.06)	0.00 (0.00,0.00)
Peripheral arterial disease	4.4 (4.1-4.6)	5.9 (5.7-6.1)	1.5 (1.2, 1.8)	1.35 (1.3-1.4)	0.34 (0.29,0.39)	0.19 (0.15,0.23)	0.00 (0.00,0.00)
Abdominal aortic aneurysm	1.7 (1.5-1.9)	1.7 (1.5-1.8)	0.0 (-0.2, 0.2)	0.99 (0.92-1.06)	0.02 (-0.02,0.05)	-0.01 (-0.04,0.01)	0.00 (0.00,0.00)
Total CVD	44.6 (43.9-45.3)	60.2 (59.6-60.7)	15.6 (12.4-18.8)	1.35 (1.33-1.37)	3.44 (3.3,3.58)	1.5 (1.4,1.61)	0.03 (0.02,0.03)
Index age 80							
Stable angina	3.6 (3.4-3.8)	6.6 (6.3-6.8)	3 (2.7, 3.2)	1.84 (1.77-1.9)	0.31 (0.28,0.33)	0.16 (0.14,0.18)	0.00 (0.00,0.00)
Unstable angina	4.7 (4.5-5.0)	6.9 (6.6-7.2)	2.2 (1.9, 2.5)	1.46 (1.4-1.53)	0.23 (0.2,0.26)	0.1 (0.08,0.12)	0.00 (0.00,0.00)
Myocardial infarction	4.0 (3.8-4.2)	5.9 (5.6-6.1)	1.8 (1.6, 2.1)	1.45 (1.4-1.51)	0.19 (0.17,0.22)	0.11 (0.09,0.13)	0.00 (0.00,0.00)
Unheralded CHD death	1.8 (1.6-2.0)	2.3 (2.1-2.5)	0.5 (0.4, 0.7)	1.31 (1.21-1.41)	0.06 (0.05,0.08)	0.03 (0.02,0.05)	0.00 (0.00,0.00)
Heart failure	5.3 (4.9-5.7)	8.0 (7.6-8.4)	2.8 (2.4, 3.2)	1.53 (1.44-1.61)	0.31 (0.27,0.34)	0.12 (0.09,0.15)	0.00 (0.00,0.00)
Cardiac arrest/SCD	1.4 (1.2-1.5)	1.6 (1.5-1.7)	0.2 (0.1, 0.4)	1.17 (1.08-1.25)	0.03 (0.02,0.04)	0.01 (0,0.02)	0.00 (0.00,0.00)
	4.8 (4.5-5.1)	5.5 (5.3-5.7)	0.7 (0.4, 1.0)	1.14 (1.09-1.19)	0.09 (0.06,0.12)	0.04 (0.02,0.06)	0.00 (0.00,0.00)
Transient ischaemic attack	5.8 (5.5-6.2)	7.1 (6.8-7.4)	1.3 (0.9, 1.6)	1.22 (1.16-1.27)	0.16 (0.12,0.19)	0.06 (0.04,0.09)	0.00 (0.00,0.00)
Ischaemic stroke	0.4 (0.4-0.5)	0.7 (0.6-0.8)	0.2 (0.1, 0.3)	1.6 (1.34-1.85)	0.03 (0.02,0.04)	0.02 (0.01,0.03)	0.00 (0.00,0.00)
Subarachnoid haemorrhage	0.4 (0.4-0.3)	1.1 (1.0-1.2)		1.46 (1.31-1.61)	0.03 (0.02,0.04)	0.02 (0.01,0.03)	0.00 (0.00,0.00)
Intracerebral haemorrhage			0.3 (0.2, 0.5)				
Peripheral arterial disease	3.4 (3.2-3.6)	4.6 (4.4-4.8)	1.3 (1.0, 1.5)	1.38 (1.32-1.44)	0.14 (0.12,0.16)	0.08 (0.07,0.1)	0.00 (0.00,0.00)
Abdominal aortic aneurysm	1.4 (1.2-1.6)	1.5 (1.3-1.6)	0.0 (-0.1, 0.2)	1.03 (0.93-1.12)	0.01 (-0.01,0.03)	-0.01 (-0.02,0.01)	0.00 (0.00,0.00)
Total CVD	37.3 (36.6-38.0)	51.7 (51.1-52.4)	14.4 (11.6-17.2)	1.39 (1.36-1.41)	1.59 (1.52,1.66)	0.75 (0.69,0.8)	0.00 (0.00,0.00)

Event	HR	Lower 95% Cl	Upper 95% Cl
Stable angina	1.19	1.18	1.20
Unstable angina	1.13	1.11	1.15
Myocardial infarction	1.15	1.14	1.16
Unheralded CHD death	1.12	1.10	1.15
Heart failure	1.12	1.11	1.14
Cardiac arrest/SCD	1.10	1.07	1.12
Transient ischaemic attack	1.07	1.06	1.08
Ischaemic stroke	1.16	1.14	1.18
Intracerebral haemorrhage	1.20	1.17	1.23
Subarachnoid haemorrhage	1.18	1.13	1.23
Peripheral arterial disease	1.16	1.15	1.18
Abdominal aortic aneurysm	1.02	1.00	1.05

Table S 5 Hazard ratios (95% CIs) for 10 mmHg higher systolic blood pressure adjusted for age and sex.



### Figure S 2 The distribution of demographic characteristics among primary care practices contributing to the main analysis.

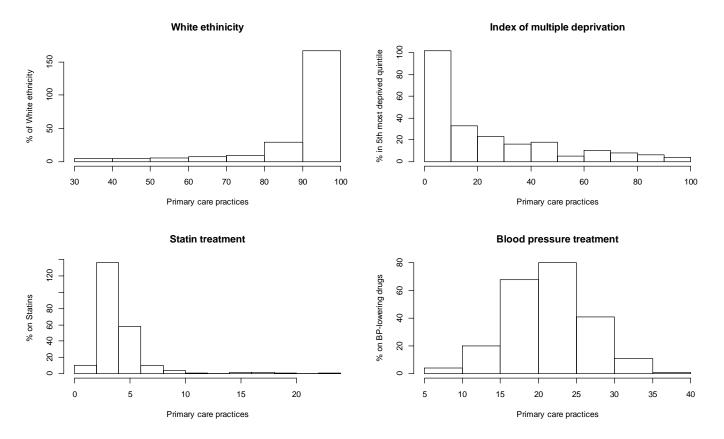


Figure S 3 Hazard ratios (95% CIs) per 10 mmHg higher mid blood pressure (mid-BP), mean arterial blood pressure (MAP) and pulse pressure (PP) adjusted for age and sex.\*

		HR 95% CI
Stable angina (n=10349) Mid-BP MAP PP	<b>+</b>	1.28 [1.25; 1.31] 1.14 [1.10; 1.18] 1.21 [1.18; 1.24]
<b>Unstable angina (n=12349)</b> Mid-BP MAP PP	+	1.18 [1.13; 1.23] 1.14 [1.10; 1.18] 1.14 [1.11; 1.17]
<b>Myocardial infarction (n=11029)</b> Mid-BP MAP PP	<b>:</b>	1.20 [1.17; 1.24] 1.13 [1.08; 1.17] 1.15 [1.12; 1.18]
<b>Unheralded CHD death (n=3661)</b> Mid-BP MAP PP	-	1.19 [1.14; 1.25] 1.12 [1.05; 1.19] 1.13 [1.08; 1.18]
Heart failure (n=10437) Mid-BP MAP PP	<b>.</b>	1.21 [1.17; 1.24] 1.15 [1.10; 1.19] 1.12 [1.09; 1.15]
Cardiac arrest/SCD (n=2355) Mid-BP MAP PP		1.15 [1.09; 1.22] 1.18 [1.09; 1.28] 1.06 [0.99; 1.12]
Transient ischaemic attack (n=8767) Mid-BP MAP PP	÷	1.12 [1.09; 1.15] 1.11 [1.07; 1.16] 1.08 [1.05; 1.11]
<b>Ischaemic stroke (n=4329)</b> Mid-BP MAP PP	<b>.</b>	1.26 [1.21; 1.32] 1.18 [1.12; 1.26] 1.14 [1.09; 1.19]
<b>Subarachnoid haemorrhage (n=830)</b> Mid-BP MAP PP		1.32 [1.20; 1.45] 1.37 [1.19; 1.56] 1.17 [1.05; 1.29]
<b>Intracerebral haemorrhage (n=1639)</b> Mid-BP MAP PP	- <b>-</b>	1.36 [1.27; 1.45] 1.39 [1.27; 1.54] 1.16 [1.08; 1.24]
<b>Peripheral arterial disease (n=8414)</b> Mid-BP MAP PP	•	1.19 [1.16; 1.23] 0.90 [0.86; 0.94] 1.23 [1.20; 1.27]
<b>Abdominal aortic aneurysm (n=2261)</b> Mid-BP MAP PP	• · ·	1.15 [1.08; 1.22] 
Total CVD (n=83098) Mid-BP MAP PP	0.8 1 1.2 1.4 1.6 Hazard ratio	1.19 [1.18; 1.20] 1.14 [1.12; 1.15] 1.13 [1.12; 1.15] 1.8

\*Adjustments include age, quadratic age, and stratification by sex and primary care practice. Confidence intervals are Bonferronicorrected (3 variables X 12 endpoints = 36 tests in total).

#### Figure S 4 Hazard ratios (95% CIs) by sex per 20/10 mmHg higher systolic or diastolic blood pressure adjusted for age.\*

Systolic blood pressure					-	Diastolic blood pressure			
	Events		HR	95% CI		Events		HR	95% CI
Stable angina Men	5179	-	1 20	[1.32; 1.46]	Stable angina Men	5179		1.06	[1.20; 1.32]
Women	5170	-		[1.36; 1.50]	Women	5179	-		[1.25; 1.38]
Unstable angina					Unstable angina				
Men	2000			[1.16; 1.38]	Men	2000			[1.13; 1.31]
Women	2139	-8-	1.23	[1.13; 1.33]	Women	2139	-8-	1.21	[1.11; 1.30]
Myocardial infarction Men	6769	-	1.06	[1 00: 1 01]	Myocardial infarction	6760	-	1.00	14 45: 4 051
Women	4260	-		[1.20; 1.31] [1.28; 1.42]	Men Women	6769 4260	-		[1.15; 1.25] [1.18; 1.32]
						.200	_		[]
Unheralded CHD death Men	2031		1 20	[1.19; 1.41]	Unheralded CHD death Men	2031		1.01	[1.12; 1.31]
Women	1630			[1.12; 1.34]	Women	1630			[1.12, 1.31]
Heart failure					Heart failure				
Men	4377		1 30	[1.23; 1.37]	Men	4377	-=-	1 25	[1.18; 1.32]
Women	6060	-		[1.20; 1.31]	Women	6060	-		[1.17; 1.28]
Cardiac arrest/SCD					Cardiac arrest/SCD				
Men	1366		1.14	[1.03; 1.26]	Men	1366		1.20	[1.09; 1.31]
Women	989		1.26	[1.13; 1.42]	Women	989			[1.08; 1.36]
Transient ischaemic attack					Transient ischaemic attack				
Men	3707	 _₽		[1.07; 1.21]	Men	3707	*		[1.08; 1.21]
Women	5060	-	1.10	[1.10; 1.22]	Women	5060	-	1.15	[1.10; 1.22]
Ischaemic stroke Men	1835		1 40	[4:00:4:50]	Ischaemic stroke	4005	_	4.24	14.00: 4.451
Women	2494			[1.28; 1.52] [1.23; 1.41]	Men Women	1835 2494			[1.23; 1.45] [1.19; 1.38]
				[]		2101	_	1.20	[1.10, 1.00]
Subarachnoid haemorrhage Men	256		1.52	[1.22; 1.92]	Subarachnoid haemorrhage Men	256		1 40	14 45: 4 751
Women	574	<b>_</b> _		[1.22, 1.92]	Women	200 574			[1.15; 1.75] [1.22; 1.64]
Introcorobral beemerrhage									
Intracerebral haemorrhage Men	697	<b></b>	1.57	[1.37; 1.80]	Intracerebral haemorrhage Men	697	<b></b>	1.63	[1.43; 1.86]
Women	942	<b></b>		[1.21; 1.52]	Women	942	_ <b>_</b> _		[1.25; 1.58]
Peripheral arterial disease					Peripheral arterial disease				
Men	4233			[1.30; 1.45]	Men	4233	₩-		[1.00; 1.11]
Women	4181		1.33	[1.26; 1.40]	Women	4181	-∎-	1.08	[1.02; 1.14]
Abdominal aortic aneurysm	4.405	_		14 04 4 000	Abdominal aortic aneurysm		_		
Men Women	1495 766 —			[1.01; 1.22] [0.90; 1.16]	Men	1495 766			[1.33; 1.60]
women	100	Firi		[0.80, 1.10]	Women	/00		1.43	[1.25; 1.63]
	1		2			1	1.2 1.4 1.6 1.8	2	
		Hazard ratio					Hazard ratio		

\*Models were fitted separately for men and women and included continuous age, quadratic age, with stratification by primary care practice. Confidence intervals are Bonferroni-corrected (2 sexes X 12 endpoints=24 tests).

#### Figure S 5 Adjusted hazard ratios (95% CIs) per 20/10 mmHg higher systolic or diastolic blood pressure.\*

#### Systolic blood pressure

#### Diastolic blood pressure

	HR	8 95% CI		1	HR 95% CI
Stable angina (n=10349)		[4 26: 4 46]	Stable angina (n=10349)		1.00 [1.04: 1.00]
Age & sex + smoking, diabetes, lipids		[1.36; 1.46] 3 [1.33; 1.43]	Age & sex + smoking, diabetes, lipids	-	1.28 [1.24; 1.33] 1.26 [1.21; 1.31]
+ BMI	1.37	[1.32; 1.43]	+ BMI		1.25 [1.20; 1.30]
+ BP meds	1.25	5 [1.20; 1.30]	+ BP meds	-	1.15 [1.11; 1.20]
Unstable angina (n=4139)			Unstable angina (n=4139)		
Age & sex + smoking, diabetes, lipids		5 [1.17; 1.32] 3 [1.16; 1.31]	Age & sex + smoking, diabetes, lipids		1.21 [1.14; 1.28] 1.21 [1.14; 1.28]
+ BMI		) [1.13; 1.28]	+ BMI	-	1.18 [1.11; 1.25]
+ BP meds	1.10	) [1.03; 1.18]	+ BP meds		1.10 [1.03; 1.17]
Myocardial infarction (n=11029)			Myocardial infarction (n=11029)		
Age & sex		[1.24; 1.34]	Age & sex	<del>∎</del>   <b>≖</b>	1.21 [1.17; 1.26]
+ smoking, diabetes, lipids + BMI		3 [1.23; 1.33] 7 [1.23; 1.32]	+ smoking, diabetes, lipids + BMI		1.21 [1.17; 1.26] 1.21 [1.16; 1.25]
+ BP meds		3 [1.14; 1.23]	+ BP meds	-	1.14 [1.09; 1.18]
Unheralded CHD death (n=3661)			Unheralded CHD death (n=3661)		
Age & sex		[1.18; 1.35]	Age & sex		1.21 [1.14; 1.29]
+ smoking, diabetes, lipids		(1.19; 1.35)	+ smoking, diabetes, lipids		1.23 [1.16; 1.32]
+ BMI + BP meds		7 [1.19; 1.35] F [1.16; 1.32]	+ BMI + BP meds		1.23 [1.15; 1.32] 1.21 [1.13; 1.29]
Heart failure (n=10437) Age & sex	<b>–</b> 127	[1.23; 1.32]	Heart failure (n=10437) Age & sex	-	1.23 [1.19; 1.28]
+ smoking, diabetes, lipids		[1.25; 1.34]	+ smoking, diabetes, lipids	-	1.27 [1.23; 1.32]
+ BMI + BP meds		5 [1.20; 1.29]	+ BMI		1.21 [1.17; 1.26]
+ BP meas	1.10	3 [1.13; 1.22]	+ BP meds	-	1.16 [1.12; 1.21]
Cardiac arrest/SCD (n=2355)	_		Cardiac arrest/SCD (n=2355)		
Age & sex + smoking, diabetes, lipids		) [1.10; 1.29] I [1.12; 1.32]	Age & sex + smoking, diabetes, lipids		1.20 [1.11; 1.30] 1.23 [1.14; 1.33]
+ BMI		[1.07; 1.27]	+ BMI		1.18 [1.09; 1.28]
+ BP meds	1.08	3 [0.99; 1.18]	+ BP meds		1.11 [1.03; 1.21]
Transient ischaemic attack (n=8767)			Transient ischaemic attack (n=8767)		
Age & sex		5 [1.10; 1.20]	Age & sex	<del>∎</del>	1.15 [1.10; 1.20]
+ smoking, diabetes, lipids + BMI		[1.10; 1.19] [1.10; 1.20]	+ smoking, diabetes, lipids + BMI		1.15 [1.10; 1.20] 1.16 [1.11; 1.21]
+ BP meds		[1.06; 1.16]	+ BP meds	-	1.13 [1.08; 1.18]
Ischaemic stroke (n=4329)			Ischaemic stroke (n=4329)		
Age & sex		5 [1.27; 1.43]	Age & sex		1.30 [1.23; 1.38]
+ smoking, diabetes, lipids		[1.27; 1.42]	+ smoking, diabetes, lipids		1.31 [1.24; 1.39]
+ BMI + BP meds	1.04	[1.27; 1.42] [1.23; 1.38]	+ BMI + BP meds		1.32 [1.24; 1.40] 1.28 [1.21; 1.36]
Subarachnoid haemorrhage (n=830) Age & sex	1.43	3 [1.24; 1.64]	Subarachnoid haemorrhage (n=830) Age & sex	<b>_</b>	1.42 [1.25; 1.61]
+ smoking, diabetes, lipids	1.45	5 [1.26; 1.66]	+ smoking, diabetes, lipids		1.45 [1.27; 1.65]
+ BMI + BP meds		) [1.30; 1.72] / [1.27; 1.69]	+ BMI + BP meds		1.50 [1.32; 1.71] 1.48 [1.30; 1.69]
- Dr meda	- 1.47	[1.27, 1.00]	. Dr meda	-	1.40 [1.50, 1.05]
Intracerebral haemorrhage (n=1639)		1 11 21:1 501	Intracerebral haemorrhage (n=1639)		1 50 (1 27: 4 65)
Age & sex + smoking, diabetes, lipids		[1.31; 1.58] [1.33; 1.60]	Age & sex + smoking, diabetes, lipids		1.50 [1.37; 1.65] 1.53 [1.40; 1.69]
+ BMI		[1.36; 1.65]	+ BMI		1.58 [1.44; 1.74]
+ BP meds	1.49	[1.35; 1.64]	+ BP meds		1.57 [1.43; 1.73]
Peripheral arterial disease (n=8414)			Peripheral arterial disease (n=8414)		
Age & sex + smoking, diabetes, lipids		5 [1.29; 1.41] 5 [1.29; 1.40]	Age & sex + smoking, diabetes, lipids	<b>₽</b>   <b>₽</b>	1.07 [1.02; 1.11] 1.11 [1.06; 1.16]
+ BMI		3 [1.33; 1.44]	+ BMI	-	1.14 [1.09; 1.19]
+ BP meds		3 [1.27; 1.39]	+ BP meds	-	1.10 [1.05; 1.15]
Abdominal aortic aneurysm (n=2261)			Abdominal aortic aneurysm (n=2261)		
Age & sex		8 [0.99; 1.17]	Age & sex		1.45 [1.34; 1.57]
+ smoking, diabetes, lipids + BMI	- 1.03	) [1.01; 1.18] 2 [1.03; 1.21]	+ smoking, diabetes, lipids + BMI		1.45 [1.34; 1.58] 1.50 [1.38; 1.63]
+ BP meds		[0.99; 1.17]	+ BP meds	<b>_</b>	1.47 [1.35; 1.59]
	1 1.2 1.4 1.6 1.8			1 1.2 1.4 1.6 1	8
	Hazard ratio			Hazard ratio	

Abbreviations: BP meds, blood pressure lowering medications; lipids include total and HDL cholesterol.

\*All models included continuous age, quadratic age, with stratification by sex and primary care practice, in addition to the covariates listed above. Confidence intervals are Bonferroni-corrected (4 models X 12 endpoints=48 tests).

Figure S 6 Hazard ratios (95% CIs) per 20 mmHg higher systolic blood pressure adjusted for age and sex estimated separately in people with (N= 265,473) or without (N= 992,533) BP-lowering drugs at baseline.\*

64-bli	Events		HR	95% CI
Stable angina Treated Not treated	5256 5093	*		[1.19; 1.28] [1.39; 1.48]
<b>Unstable angina</b> Treated Not treated	1994 2145	- <b>-</b> -		[1.04; 1.17] [1.18; 1.30]
Myocardial infarction Treated Not treated	4727 6302	*	1.21 1.33	[1.17; 1.26] [1.29; 1.37]
Unheralded CHD death Treated Not treated	1597 2064	-æ- -æ-		[1.14; 1.29] [1.25; 1.38]
Heart failure Treated Not treated	5876 4561	*		[1.14; 1.21] [1.25; 1.33]
Cardiac arrest/SCD Treated Not treated	1077 1278	- <b>-</b> -		[0.99; 1.15] [1.09; 1.24]
Transient ischaemic attack Treated Not treated	4048 4719	-#- -#-		[1.09; 1.18] [1.08; 1.16]
Ischaemic stroke Treated Not treated	2110 2219	- <b>e</b> - - <b>e</b> -		[1.25; 1.40] [1.28; 1.40]
Subarachnoid haemorrhage Treated Not treated	260 570	<b>e</b>		[1.36; 1.84] [1.26; 1.54]
Intracerebral haemorrhage Treated Not treated	692 947	<b>e</b>		[1.29; 1.55] [1.36; 1.57]
<b>Peripheral arterial disease</b> Treated Not treated	3902 4512	*		[1.31; 1.42] [1.24; 1.33]
Abdominal aortic aneurysm Treated Not treated	1033 — 1228		1.10	[0.93; 1.08] [1.03; 1.18]
		1 1.2 1.4 1.6 1.8 Hazard ratio		

\*Models were fitted separately in people treated or not treated with BP medications at baseline, with adjustments for age, quadratic age, and stratification by sex and primary care practice. Confidence intervals are Bonferroni-corrected (2 groups X 12 endpoints=24 tests in total).

Figure S 7 Hazard ratios (95% CIs) per 10 mmHg higher diastolic blood pressure adjusted for age and sex estimated separately in people with (N= 265,473) or without (N= 992,533) BP-lowering drugs at baseline.

	Events		HR	95% CI
Stable angina Treated Not treated	5256 5093	*		[1.11; 1.18] [1.23; 1.31]
<b>Unstable angina</b> Treated Not treated	1994 2145	*		[1.02; 1.13] [1.15; 1.27]
Myocardial infarction Treated Not treated	4727 6302	*		[1.12; 1.21] [1.20; 1.27]
Unheralded CHD death Treated Not treated	1597 2064	-#-		[1.09; 1.24] [1.20; 1.33]
Heart failure Treated Not treated	5876 4561	*		[1.10; 1.17] [1.22; 1.30]
Cardiac arrest/SCD Treated Not treated	1077 1278	- <b>e</b> _ - <b>e</b> _		[1.01; 1.17] [1.10; 1.25]
Transient ischaemic attack Treated Not treated	4048 4719	*		[1.10; 1.18] [1.07; 1.15]
Ischaemic stroke Treated Not treated	2110 2219	- <b>a</b> - - <b>a</b> -		[1.20; 1.34] [1.24; 1.37]
Subarachnoid haemorrhage Treated Not treated	260 570	_ <b>_</b>		[1.48; 1.95] [1.20; 1.44]
Intracerebral haemorrhage Treated Not treated	692 947	<b>_</b>		[1.36; 1.63] [1.39; 1.61]
Peripheral arterial disease Treated Not treated	3902 H 4512	₽-   <del></del>		[0.96; 1.04] [1.02; 1.09]
Abdominal aortic aneurysm Treated Not treated	1033 1228	1 1.2 1.4 1.6 1.8 Hazard ratio		[1.40; 1.63] [1.30; 1.48]
		The card to the to		

\*Models were fitted separately in people treated or not treated with BP medications at baseline, with adjustments for age, quadratic age, and stratification by sex and primary care practice. Confidence intervals are Bonferroni-corrected (2 groups X 12 endpoints=24 tests in total).

Figure S 8 Hazard ratios (95% CIs) for the associations of different cutoffs of systolic blood pressure (reference 115 mmHg) with cardiovascular endpoints in men adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	Age 60 to 79		Age 80+	
Stable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=2237	HR 95% CI 0.72 [0.64; 0.82] 1.15 [1.09; 1.20] 1.51 [1.36; 1.68] 2.06 [1.84; 2.30] 3.08 [2.70; 3.52] →→ 4.62 [3.84; 5.55]	n=2676 2 5 	HR 95% Cl 0.80 [0.73; 0.87] 1.10 [1.06; 1.14] 1.35 [1.21; 1.50] 1.69 [1.46; 1.96] 2.22 [1.92; 2.56] 2.90 [2.46; 3.43]	n=266 •	HR 95% Cl 0.64 [0.47; 0.87] 1.21 [1.06; 1.38] 1.77 [1.20; 2.62] 2.51 [1.43; 4.41] →3.19 [1.85; 5.52] →3.83 [2.20; 6.68]
Unstable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=3189	0.75         [0.68; 0.83]           1.13         [1.09; 1.17]           1.43         [1.31; 1.55]           1.82         [1.67; 1.99]	n=2987 0 9 8 8 8 8 8 8 8 8 8 8 8 9 8 9	0.81 [0.75; 0.88] 1.10 [1.06; 1.13] 1.32 [1.19; 1.46] 1.58 [1.38; 1.82] 1.88 [1.65; 2.15] 2.22 [1.89; 2.60]	n=273	0.89         [0.69; 1.15]           1.05         [0.94; 1.17]           1.17         [0.84; 1.61]           1.31         [0.83; 2.08]           1.51         [0.96; 2.36]           1.73         [1.06; 2.82]
Myocardial infarction 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=3332	0.76 [0.69; 0.83] 1.12 [1.08; 1.16] 1.38 [1.28; 1.50] 1.69 [1.56; 1.84] 2.81 [1.95; 2.44] 2.81 [2.39; 3.31]	n=2984 <b>D</b> <b>D</b> <del>B</del> <del>-</del> - <del>B</del>	0.81 [0.75; 0.88] 1.10 [1.06; 1.13] 1.32 [1.19; 1.45] 1.55 [1.35; 1.78] 1.74 [1.52; 1.98] 1.91 [1.63; 2.25]	n=453	0.80 [0.65; 0.99] 1.10 [1.00; 1.21] 1.34 [1.02; 1.76] 1.68 [1.13; 2.49] 2.21 [1.51; 3.25] 2.89 [1.94; 4.28]
Unheralded CHD death 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=659	● 0.84 [0.68; 1.04] ■ 1.09 [1.00; 1.18] ■ 1.34 [1.12; 1.60] ■ 1.85 [1.53; 2.23] ■ 2.90 [2.29; 3.67] ■ 4.55 [3.26; 6.35]	n=1072 • 	0.74 [0.64; 0.86] 1.14 [1.07; 1.21] 1.48 [1.23; 1.77] 1.90 [1.47; 2.45] 2.35 [1.84; 3.00] 2.87 [2.18; 3.77]	n=300 =	1.23       [1.00; 1.52]         0.91       [0.84; 1.00]         0.77       [0.59; 1.00]         0.72       [0.50; 1.03]         0.84       [0.58; 1.20]         1.04       [0.68; 1.59]
Heart failure 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=751	0.84 [0.68; 1.04] 1.09 [1.01; 1.18] - 1.45 [1.21; 1.73] - 2.41 [1.99; 2.92] -→ 5.01 [4.04; 6.20] > 10.40 [7.89; 13.72]	n=2557 <b>G</b> <b>H</b> 	0.89 [0.82; 0.97] 1.05 [1.01; 1.09] 1.17 [1.05; 1.31] 1.38 [1.18; 1.61] 1.84 [1.58; 2.13] 2.47 [2.09; 2.92]	n=1069	1.06         [0.94;         1.19]           0.98         [0.93;         1.03]           0.94         [0.81;         1.09]           0.96         [0.78;         1.19]           1.17         [0.96;         1.44]           1.47         [1.17;         1.85]
Cardiac arrest/SCD 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=573	1.03 [0.84; 1.26] 1.00 [0.93; 1.08] 1.11 [0.93; 1.31] 1.46 [1.22; 1.76] 2.24 [1.74; 2.87] 3.42 [2.38; 4.91]	n=736	1.04 [0.90; 1.19] 0.99 [0.93; 1.05] 0.96 [0.81; 1.14] 0.97 [0.77; 1.22] 1.06 [0.83; 1.34] 1.17 [0.85; 1.62]	n=57	1.42         [0.90; 2.23]           0.86         [0.71; 1.05]           0.65         [0.36; 1.15]           0.55         [0.25; 1.22]           0.62         [0.28; 1.37]           0.76         [0.29; 2.02]
Transient ischaemic attack 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1037	0.91 [0.78; 1.07] 1.04 [0.98; 1.11] 1.17 [1.03; 1.34] 1.17 [1.23; 1.64] − 1.85 [1.53; 2.25] 2.42 [1.82; 3.22]	n=2152	0.96 [0.88; 1.05] 1.02 [0.98; 1.06] 1.06 [0.95; 1.19] 1.16 [0.99; 1.35] 1.37 [1.18; 1.59] 1.64 [1.37; 1.97]	n=518 # # 	1.04         [0.88; 1.23]           0.98         [0.91; 1.05]           0.95         [0.77; 1.17]           0.96         [0.72; 1.29]           1.08         [0.80; 1.44]           1.23         [0.87; 1.72]
Ischaemic stroke 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=522	0.92 [0.72; 1.17]     1.05 [0.97; 1.15]     1.30 [1.06; 1.58]     -■-	n=1064 <b>*</b> - <b>-</b> - - <b>-</b>	0.91 [0.80; 1.04] 1.04 [0.98; 1.10] 1.14 [0.96; 1.34] 1.37 [1.08; 1.73] 2.05 [1.63; 2.56] 3.12 [2.43; 4.02]	n=249	1.05         [0.82; 1.35]           0.98         [0.88; 1.09]           0.94         [0.69; 1.28]           0.95         [0.61; 1.46]           1.07         [0.70; 1.66]           1.25         [0.76; 2.04]
Subarachnoid haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=175 ⊣		n=72	1.32 [0.89; 1.98] 0.89 [0.75; 1.05] 0.71 [0.43; 1.18] 0.70 [0.35; 1.39] 1.10 [0.55; 2.21] — 1.88 [0.78; 4.48]	n=9	0.59 [0.13; 2.76] 1.25 [0.65; 2.43] →1.91 [0.27; 13.25] →2.09 [0.15; 28.80] →1.02 [0.07; 14.23] →0.42 [0.01; 14.91]
Intracerebral haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=212		n=394 =	0.82 [0.65; 1.03] 1.09 [0.99; 1.20] 1.31 [0.98; 1.75] 1.69 [1.12; 2.53] 2.49 [1.68; 3.68] → 3.70 [2.41; 5.69]	n=91	0.73 [0.44; 1.21] 1.15 [0.92; 1.42] 1.50 [0.79; 2.85] − 1.90 [0.76; 4.74] →2.14 [0.88; 5.19] →2.30 [0.91; 5.80]
Peripheral arterial disease 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=1572	0.84 [0.73; 0.97] 1.09 [1.03; 1.14] 1.35 [1.20; 1.51] 1.89 [1.67; 2.14] 	n=2314 <b>*</b>	0.96 [0.88; 1.05] 1.02 [0.98; 1.05] 1.06 [0.96; 1.18] 1.25 [1.07; 1.45] 1.86 [1.61; 2.16] 2.88 [2.43; 3.40]	n=347	0.78 [0.61; 1.00] 1.11 [1.00; 1.24] 1.38 [1.01; 1.88] 1.69 [1.09; 2.64] 1.99 [1.29; 3.05] 2.26 [1.43; 3.56]
Abdominal aortic aneurysm 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=242	0.81 [0.55; 1.19] 1.10 [0.95; 1.27] 1.36 [0.99; 1.87] 1.82 [1.30; 2.54] 2.72 [1.83; 4.03] 4.06 [2.37; 6.94] 1 2 3 4 5 Hazard ratio	n=1045	0.93 [0.81; 1.05] 1.03 [0.98; 1.09] 1.11 [0.94; 1.30] 1.17 [0.94; 1.46] 1.22 [0.98; 1.51] 1.26 [0.96; 1.65]	n=208	0.89 [0.66; 1.19] 1.05 [0.93; 1.20] 1.17 [0.80; 1.70] 1.28 [0.75; 2.16] 1.35 [0.80; 2.25] 1.40 [0.78; 2.48] 5

Figure S 9 Hazard ratios (95% CIs) for the associations of different cutoffs of diastolic blood pressure (reference 75 mmHg) with cardiovascular endpoints in men adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	Age	60 to 79	Age 80+	
Stable angina		HR 95% CI		HR 95% CI		HR 95% CI
60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=2237	■ 0.80 [0.71; 0.89] ■ 1.10 [1.07; 1.14] ■ 1.41 [1.34; 1.49] ■ 1.69 [1.58; 1.81] ■ 2.03 [1.85; 2.23] -■ 2.68 [2.34; 3.06]		0.89 [0.81; 0.98] 1.05 [1.02; 1.08] 1.16 [1.10; 1.23] 1.25 [1.16; 1.34] 1.34 [1.20; 1.49] 1.49 [1.26; 1.76]	n=266 =- 25 -=- -=- 	0.74 [0.57; 0.97] 1.15 [1.04; 1.26] 1.32 [1.11; 1.57] 1.41 [1.09; 1.84] 1.51 [1.04; 2.19] 1.66 [0.96; 2.90]
Unstable angina 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=3189	0.80         [0.74; 0.88]           1.09         [1.07; 1.12]           1.33         [1.27; 1.39]           1.53         [1.44; 1.62]           2.17         [1.92; 2.44]	n=2987 G G C 1 1	0.89 [0.81; 0.98] 1.05 [1.02; 1.08] 1.17 [1.11; 1.23] 1.26 [1.18; 1.35] 1.36 [1.23; 1.50] - 1.53 [1.31; 1.78]	n=273	0.80         [0.62; 1.03]           1.08         [0.99; 1.18]           1.10         [0.92; 1.31]           1.07         [0.80; 1.42]           1.03         [0.68; 1.57]           0.98         [0.53; 1.83]
Myocardial infarction 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=3332	0.82         [0.76; 0.89]           1.08         [1.06; 1.10]           1.28         [1.23; 1.34]           1.45         [1.37; 1.53]           1.63         [1.50; 1.76]           1.95         [1.73; 2.20]	n=2984 5 6 6 7 7	1.18 [1.10; 1.26]	n=453 <b>•</b> - <b>•</b> • <b>•</b> • <b>•</b>	0.91 [0.76; 1.10] 1.06 [1.00; 1.13] 1.20 [1.06; 1.36] 1.31 [1.08; 1.60] 1.44 [1.08; 1.91] 1.64 [1.08; 2.50]
Unheralded CHD death 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=659	0.98 [0.83; 1.17] 1.04 [0.99; 1.09] 1.27 [1.16; 1.39] 1.54 [1.37; 1.74] 	n=1072 =	0.87 [0.74; 1.01] 1.06 [1.02; 1.11] 1.23 [1.13; 1.34] 1.37 [1.22; 1.53] 1.52 [1.29; 1.80] 1.80 [1.39; 2.31]	n=300 ++	0.99 [0.80; 1.23] 0.99 [0.92; 1.07] 0.94 [0.80; 1.12] 0.90 [0.68; 1.20] 0.86 [0.57; 1.30] 0.80 [0.44; 1.48]
Heart failure 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=751	■ 0.84 [0.70; 1.02] ■ 1.11 [1.05; 1.17] ■ 1.58 [1.44; 1.75] ■ 2.15 [1.92; 2.40] - 9.4 [2.55; 3.38] - ● 4.71 [3.86; 5.75]	n=2557 <b>G</b> G S	0.99 [0.90; 1.08] 1.02 [1.00; 1.05] 1.16 [1.11; 1.23] ■ 1.33 [1.23; 1.43] ■ 1.52 [1.37; 1.70] ■ 1.88 [1.59; 2.21]	n=1069 <b>4</b> 51 53 <del>5</del> <del>5</del> - <del>5</del>	0.98 [0.88; 1.10] 1.04 [1.00; 1.09] 1.22 [1.13; 1.32] 1.40 [1.24; 1.58] 1.61 [1.35; 1.91] 1.97 [1.52; 2.55]
Cardiac arrest/SCD 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=573	1.02 [0.85; 1.22]     1.03 [0.98; 1.07]     1.23 [1.12; 1.35]     1.47 [1.29; 1.67]     − 1.78 [1.48; 2.13]     2.36 [1.80; 3.10]	n=736 <b>H</b>	0.99 [0.83; 1.18] 1.03 [0.98; 1.08] 1.19 [1.07; 1.31] 1.38 [1.21; 1.57] 	n=57 =	1.18         [0.75; 1.85]           0.84         [0.72; 0.98]           0.52         [0.30; 0.87]           0.35         [0.14; 0.88]           0.23         [0.06; 0.90]           0.13         [0.02; 0.95]
Transient ischaemic attack 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1037	0.97 [0.84; 1.11]     1.03 [0.99; 1.07]     1.16 [1.08; 1.25]     1.30 [1.17; 1.44]	n=2152 <b>2</b> 0 1 1 1 1 1 1	1.02 [0.93; 1.13] 1.01 [0.99; 1.03] 1.12 [1.06; 1.18] 1.25 [1.16; 1.35] ■ 1.41 [1.26; 1.53] ■ 1.69 [1.41; 2.03]	n=518 <b>#</b> 2 <b>*</b> 	0.98 [0.83; 1.16] 1.04 [0.98; 1.09] 1.18 [1.05; 1.32] 1.31 [1.09; 1.57] 1.46 [1.13; 1.89] 1.72 [1.17; 2.52]
Ischaemic stroke 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=522	■ 0.91 [0.74; 1.13] ■ 1.07 [1.01; 1.14] ■ 1.42 [1.27; 1.58] ■ 1.82 [1.59, 2.07] ■ 2.35 [1.97; 2.80] ■ 3.46 [2.67; 4.48]	n=1064 ➡ ⊑	0.93 [0.80; 1.09] 1.05 [1.01; 1.10] 1.30 [1.19; 1.41] 1.58 [1.42; 1.76] 	n=249 =	0.97 [0.76; 1.24] 1.01 [0.93; 1.10] 1.04 [0.87; 1.24] 1.05 [0.78; 1.41] 1.06 [0.70; 1.63] 1.09 [0.58; 2.04]
Subarachnoid haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=175	● 0.83 [0.59; 1.19] ■ 1.10 [1.00; 1.21] ■ 1.46 [1.21; 1.75] ■ 1.83 [1.45; 2.30] ■ 2.31 [1.69; 3.16] ■ 3.29 [2.07; 5.22]	n=72		n=9	0.28 [0.04; 2.26] 1.32 [0.66; 2.64] 0.93 [0.23; 3.80] →0.51 [0.05; 5.31] →0.28 [0.01; 8.57] →0.11 [0.00; 18.93]
Intracerebral haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=212	- ■ 1.37 [1.06; 1.78] ■ 1.01 [0.96; 1.06] ■ 1.43 [1.25; 1.64] - ■ 2.22 [1.89; 2.62] - ■ 3.57 [2.90; 4.40] > 7.26 [5.41; 9.75]	n=394 <del>∎</del> . ⊒	0.81 [0.62; 1.07] 1.11 [1.02; 1.20] 	n=91	0.87 [0.56; 1.36] 1.10 [0.95; 1.28] 1.39 [1.05; 1.82] 1.65 [1.11; 2.44] 1.96 [1.13; 3.41] →2.54 [1.13; 5.73]
Peripheral arterial disease 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1572	0.96         [0.85; 1.07]           1.03         [1.00; 1.06]           1.12         [1.05; 1.18]           1.20         [1.14; 1.45]           -         1.43           1.43         [1.19; 1.73]	n=2314 0 0 0 0	1.14       [1.04; 1.24]         0.97       [0.94; 0.99]         0.98       [0.93; 1.03]         1.03       [0.96; 1.11]         1.09       [0.96; 1.22]         1.18       [0.98; 1.42]	n=347 <b>+</b> 21 	1.00         [0.81; 1.22]           1.04         [0.98; 1.11]           1.22         [1.07; 1.40]           1.41         [1.14; 1.74]           1.62         [1.20; 2.20]           2.01         [1.28; 3.15]
Abdominal aortic aneurysm 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=242		n=1045 ■ ■ ■	0.81 [0.69; 0.96] 1.10 [1.05; 1.16] 1.44 [1.32; 1.58] 1.79 [1.60; 2.00] 2.23 [1.92; 2.60] 3.11 [2.48; 3.91] 2 3 4 5 Hazard ratio	n=208	0.63 [0.44; 0.90] 1.28 [1.12; 1.46] 1.85 [1.51; 2.27] 2.35 [1.83; 3.01] 2.97 [2.14; 4.12] ↓4.22 [2.65; 6.72] 5

Figure S 10 Hazard ratios (95% CIs) for the associations of different cutoffs of systolic blood pressure (reference 115 mmHg) with cardiovascular endpoints in women adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

	Age 30 t	o 59	Age 60 to	79	Age 80+	
Stable angina		HR 95% CI		HR 95% CI		HR 95% CI
90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=1712 🖬 🖷 –	0.59 [0.50; 0.70] 1.29 [1.21; 1.38] 1.90 [1.71; 2.11] - 2.86 [2.56; 3.20] - ■ 4.90 [4.23; 5.68] > 8.41 [6.88; 10.29]	n=3012 © 5 8 -	0.75 [0.69; 0.81] 1.13 [1.09; 1.17] 1.45 [1.31; 1.61] 1.88 [1.62; 2.19] ■- 2.42 [2.09; 2.80] - 3.04 [2.59; 3.57]	n=446 • • • • • • • • • • • • • • • • • •	$\begin{array}{cccc} 0.65 & [0.52; \ 0.81] \\ 1.21 & [1.10; \ 1.34] \\ 1.80 & [1.34; \ 2.41] \\ \hline & 2.63 & [1.67; \ 4.12] \\ \hline & 3.35 & [2.11; \ 5.30] \\ \hline & 3.87 & [2.47; \ 6.05] \end{array}$
Unstable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=2233 🖬	0.67 [0.59; 0.76] 1.21 [1.15; 1.27] 1.59 [1.47; 1.72] 2.10 [1.92; 2.30] 3.02 [2.64; 3.45] → 4.34 [3.58; 5.26]	n=3123 🖬 = = -=-	0.77 [0.71; 0.83] 1.12 [1.08; 1.16] 1.41 [1.27; 1.55] 1.70 [1.48; 1.96] 1.83 [1.59; 2.10] 1.89 [1.61; 2.22]	n=544 <b>*</b> - -*- -*-	0.90 [0.77; 1.05] 1.05 [0.98; 1.13] 1.16 [0.93; 1.43] 1.29 [0.93; 1.79] 1.46 [1.05; 2.03] 1.64 [1.16; 2.31]
Myocardial infarction 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1154 ■ -	0.58 [0.48; 0.70] 1.29 [1.20; 1.38] 1.81 [1.61; 2.03] - 2.50 [2.19; 2.85] → 5.79 [4.45; 7.54]	n=2332 🗳 🖬 -=	0.73 [0.66; 0.80] 1.15 [1.10; 1.19] 1.51 [1.34; 1.71] - 1.98 [1.65; 2.37] - 2.44 [2.05; 2.91] - 2.93 [2.43; 3.53]	n=774	0.90 [0.79; 1.04] 1.05 [0.98; 1.11] 1.15 [0.96; 1.38] 1.30 [0.98; 1.72] 1.56 [1.17; 2.07] 1.89 [1.41; 2.52]
Unheralded CHD death 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=202 =-	$\begin{array}{ccc} 0.45 & [0.26; \ 0.77] \\ 1.45 & [1.18; \ 1.77] \\ \hline & 2.37 & [1.70; \ 3.30] \\ \hline & 3.75 & [2.64; \ 5.33] \\ \hline & 6.82 & [4.38; \ 10.62] \\ & > 12.40 & [6.88; 22.35] \end{array}$	n=868	0.94 [0.81; 1.08] 1.03 [0.97; 1.10] 1.10 [0.91; 1.33] 1.25 [0.95; 1.65] 1.71 [1.30; 2.24] 2.38 [1.79; 3.18]	n=560 <b>E</b> E E <del>E</del> <del>E</del> <del>E</del>	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Heart failure 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=494 =-	0.68 [0.50; 0.92] 1.23 [1.10; 1.37] 1.79 [1.49; 2.14] 2.80 [2.30; 3.40] 3.89; 6.63] 9.22 [6.39; 13.30]	n=3241 <b>E</b> <b>B</b> <del>B</del> 	0.89 [0.82; 0.96] 1.05 [1.02; 1.09] 1.18 [1.06; 1.30] 1.39 [1.20; 1.60] 1.85 [1.61; 2.14] 2.52 [2.17; 2.93]	n=2325	0.92 [0.86; 1.00] 1.04 [1.00; 1.07] 1.12 [1.01; 1.23] 1.23 [1.06; 1.44] 1.46 [1.25; 1.70] 1.75 [1.49; 2.05]
Cardiac arrest/SCD 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=381	1.08 [0.85; 1.39] 1.02 [0.94; 1.10] 1.22 [1.05; 1.41] 1.71 [1.41; 2.09] 2.73 [1.98; 3.77] → 4.36 [2.73; 6.94]	n=525	0.85 [0.71; 1.01] 1.07 [0.99; 1.16] 1.24 [0.99; 1.56] 1.47 [1.05; 2.04] - 1.78 [1.29; 2.46] 2.15 [1.48; 3.12]	n=83	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Transient ischaemic attack 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=1057	0.84 [0.71; 1.00] 1.11 [1.04; 1.18] 1.35 [1.22; 1.49] 1.74 [1.54; 1.97] - 2.44 [2.00; 2.98] 3.43 [2.57; 4.56]	n=2722 🖬 🖬 =- -=-	0.90 [0.83; 0.97] 1.05 [1.01; 1.08] 1.16 [1.04; 1.28] 1.29 [1.11; 1.50] 1.47 [1.28; 1.70] 1.67 [1.42; 1.97]	n=1281 <b>G</b> <b>H</b> -=- -=-	0.93 [0.84; 1.03] 1.03 [0.99; 1.08] 1.11 [0.97; 1.27] 1.20 [0.98; 1.47] 1.31 [1.07; 1.61] 1.43 [1.15; 1.77]
Ischaemic stroke 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=415 =- 	0.70 [0.53; 0.94] 1.19 [1.07; 1.32] 1.57 [1.32; 1.87] 2.13 [1.73; 2.61] 3.17 [2.31; 4.34] 4.72 [3.01; 7.41]	n=1388 E	0.88 [0.78; 0.99] 1.06 [1.01; 1.11] 1.19 [1.02; 1.39] 1.42 [1.14; 1.78] - 1.93 [1.55; 2.40] - 2.66 [2.11; 3.35]	n=691	0.99[0.86; 1.13]1.01[0.95; 1.07]1.02[0.85; 1.23]1.08[0.81; 1.42]1.27[0.96; 1.69]1.56[1.17; 2.10]
Subarachnoid haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=358 =- -=- -=-	0.69 [0.52; 0.92] 1.21 [1.09; 1.34] 1.68 [1.42; 1.98] - 2.45 [1.97; 3.04] → 4.05 [2.86; 5.73] → 6.69 [4.04; 11.08]	n=182	0.99 [0.75; 1.29] 1.01 [0.90; 1.13] 1.02 [0.72; 1.44] 1.04 [0.64; 1.70] 1.08 [0.66; 1.78] 1.13 [0.59; 2.14]	n=34	0.70 [0.33; 1.49] 1.17 [0.84; 1.63] → 1.60 [0.59; 4.35] → 2.09 [0.45; 9.60] → 2.15 [0.46; 10.03] → 1.98 [0.42; 9.32]
Intracerebral haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=222 -=- 	1.02 [0.72; 1.44] 1.08 [0.96; 1.21] 1.55 [1.25; 1.90] 2.83 [2.21; 3.62] → 6.45 [4.49; 9.25] >14.69 [8.85; 24.40]	n=485	1.00 [0.83; 1.20] 1.00 [0.92; 1.08] 1.01 [0.80; 1.27] 1.09 [0.78; 1.53] 1.45 [1.04; 2.02] 1.99 [1.37; 2.87]	n=235 +	1.00         [0.80; 1.26]           1.00         [0.90; 1.11]           1.00         [0.74; 1.36]           1.04         [0.66; 1.65]           1.23         [0.77; 1.98]           1.51         [0.92; 2.48]
Peripheral arterial disease 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1123	0.80 [0.68; 0.95] 1.13 [1.06; 1.20] 1.43 [1.30; 1.58] 1.92 [1.70; 2.17] 	n=2383 🖬 	0.86 [0.79; 0.94] 1.07 [1.03; 1.11] 1.22 [1.09; 1.37] 1.48 [1.26; 1.75] - 2.07 [1.76; 2.43] - 2.93 [2.46; 3.48]	n=675	0.90         [0.78; 1.04]           1.05         [0.98; 1.12]           1.16         [0.95; 1.41]           1.30         [0.97; 1.75]           1.52         [1.12; 2.06]           1.78         [1.30; 2.42]
Abdominal aortic aneurysm 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=68	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	n=522	1.02 [0.86; 1.21] 0.99 [0.92; 1.07] 0.97 [0.78; 1.22] 0.95 [0.69; 1.30] 0.91 [0.67; 1.24] 0.87 [0.60; 1.27] 3 4 5 ard ratio	n=176	0.89 [0.67; 1.19] 1.05 [0.93; 1.20] 1.16 [0.79; 1.71] 1.23 [0.69; 2.20] 1.15 [0.64; 2.06] 1.00 [0.54; 1.88] 4 5 io

Figure S 11 Hazard ratios (95% CIs) for the associations of different cutoffs of diastolic blood pressure (reference 75 mmHg) with cardiovascular endpoints in women adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

	Age 30 to 59	Age 60 to 79		Age 80+
	HR 95%	сі	HR 95% CI	HR 95% CI
Stable angina 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1712 <b>G</b> 0.63 [0.55; 0.7 1.19 [1.16; 1.2 <b>G</b> 1.70 [1.61; 1.8 <b>C</b> 2.16 [1.98; 2.3 <b>C</b> 3.90 [3.29; 4.6]	2]  0]  5]  8]	0.85         [0.78; 0.94]         n=4           1.06         [1.03; 1.09]         1.21           1.21         [1.15; 1.28]         1.32           1.32         [1.23; 1.42]         1.44           1.65         [1.41; 1.92]         1.45	446 ■ 0.82 [0.65; 1.02] ■ 1.07 [1.01; 1.13] ■ 1.21 [1.07; 1.36] ■ 1.29 [1.08; 1.54] - 1.38 [1.06; 1.78] - 1.52 [1.03; 2.24]
Unstable angina 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=2233      0.63 [0.56; 0.7 1.15 [1.13; 1.1 1.47 [1.40; 1.6 1.71 [1.57; 1.8 1.71 [1.57; 1.8 2.48 [2.10; 2.9	8] <b>9</b> 5] <b>9</b> 6] <b>9</b> 3] <b>9</b>	0.92 [0.84; 1.01] n=5 1.03 [1.00; 1.06] 1.10 [1.05; 1.16] 1.15 [1.07; 1.23] 1.19 [1.08; 1.33] 1.27 [1.08; 1.49]	644         0.98         [0.82; 1.18]           1.02         [0.97; 1.06]           1.09         [0.98; 1.20]           1.15         [0.97; 1.35]           1.21         1.02; [0.96; 1.55]           1.33         [0.92; 1.90]
Myocardial infarction 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1154  0.66 [0.56; 0.7 1.16 [1.13; 1.1 1.54 [1.44; 1.6 1.55 [1.66; 2.0 - 2.23 [1.91] 2.6 2.94 [2.34; 3.6	9] <b>0</b> 6] <b>1</b> 7] <b>1</b> 1] <del>4</del>	0.94 [0.85; 1.05] n=7 1.03 [1.00; 1.07] 1.17 [1.10; 1.24] 1.30 [1.20; 1.41] 1.46 [1.30; 1.63] 1.72 [1.45; 2.05]	774 ■ 0.82 [0.69; 0.97] □ 1.06 [1.02; 1.11] ■ 1.15 [1.05; 1.26] ■ 1.19 [1.04; 1.37] = 1.23 [1.00; 1.50] ■ 1.29 [0.95; 1.74]
Unheralded CHD death 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=202	9] <b>b</b> 8] <b>b</b> 9] <del>b</del> 3] <b>b</b>	1.00         [0.84; 1.18]         n=5           1.02         [0.98; 1.07]         1.20           1.20         [1.09; 1.32]         1.42         [1.26; 1.61]           1.69         [1.42; 2.02]         2.20         [1.69; 2.87]	intermediate     1.14 [0.96; 1.34]       intermediate     0.97 [0.93; 1.02]       intermediate     0.99 [0.89; 1.09]       intermediate     1.02 [0.87; 1.21]       intermediate     1.07 [0.84; 1.36]       intermediate     1.14 [0.79; 1.64]
Heart failure 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=494 • 0.75 [0.59; 0.9 1.17 [1.12; 1.2 1.76 [1.60; 1.9 - 2.36 [2.03; 2.7 - 3.17 [2.57; 3.9 - 4.92 [3.63; 6.6	2] <b>D</b> 5] <b>D</b> 5] <b>D</b> 1] <b>D</b>	1.00         [0.92; 1.09]         n=2           1.03         [1.00; 1.05]         1.22           1.22         [1.16; 1.28]         1.46           1.46         [1.37; 1.55]         1.76           1.76         [1.64; 1.92]         2.33	325 <b>C</b> 0.87 [0.79; 0.95] <b>D</b> 1.05 [1.03; 1.08] <b>D</b> 1.17 [1.11; 1.23] <b>C</b> 1.24 [1.15; 1.34] <b>C</b> 1.32 [1.18; 1.48] <b>C</b> 1.45 [1.23; 1.72]
Cardiac arrest/SCD 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=381      0.78 [0.62; 0.9     1.09 [1.04; 1.1     1.26 [1.10; 1.4      1.39 [1.12; 1.7      1.53 [1.12; 2.0      1.77 [1.13; 2.7	3] <b>D</b> 5] <b>D</b> 4] <del>D</del> 9] <b>D</b>	0.92 [0.74; 1.15] n= 1.04 [0.98; 1.11] 1.22 [1.07; 1.38] 1.39 [1.18; 1.63] 1.59 [1.26; 2.00] 1.95 [1.37; 2.77]	83 0.94 [0.56; 1.56] 1.03 [0.91; 1.17] 1.14 [0.87; 1.49] 1.23 [0.82; 1.85] 1.33 [0.74; 2.39] 1.50 [0.62; 3.59]
Transient ischaemic attack 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1057 0.86 [0.75; 0.9 1.10 [1.07; 1.1 1.40 [1.30; 1.5 1.67 [1.48; 1.8 1.99 [1.68; 2.3 2.59 [2.03; 3.3	2] <b>0</b> 1] <b>2</b> 8] <b>2</b> 5] <b>4</b>	0.89 [0.81; 0.99] n=1 1.04 [1.01; 1.07] 1.13 [1.07; 1.20] 1.19 [1.10; 1.28] 1.25 [1.12; 1.40] 1.35 [1.14; 1.60]	281 0.89 [0.79; 1.01] □ 1.05 [1.01; 1.08] □ 1.15 [1.07; 1.23] ■ 1.22 [1.10; 1.36] ■ 1.30 [1.11; 1.51] - 1.42 [1.13; 1.79]
Ischaemic stroke 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=415      0.71 [0.56; 0.9     1.14 [1.09; 1.1     1.48 [1.31; 1.6     1.76 [1.45; 2.1      2.70 [1.60; 2.7     2.73 [1.85; 4.0	9] <b>2</b> 7] <b>4</b> 5]	0.78 [0.67; 0.91] n=6 1.10 [1.05; 1.15] 1.35 [1.24; 1.47] 1.55 [1.39; 1.72] 1.77 [1.54; 2.05] 2.18 [1.76; 2.69]	691 ■ 0.91 [0.77; 1.08] ■ 1.04 [1.00; 1.09] ■ 1.17 [1.06; 1.28] ■ 1.26 [1.10; 1.45] ■ 1.37 [1.12; 1.68] ■ 1.55 [1.15; 2.09]
Subarachnoid haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=358 • 0.81 [0.65; 1.0 1.15 [1.11; 1.2 • 1.99 [1.50; 1.9 - 2.24 [1.85; 2.7 - 2.97 [2.27; 3.8 - 4.53 [3.08; 6.6	0] <b>□</b> 1] <del>■</del> - 1] - <del>■</del> - 8]	1.00         [0.70; 1.43]         n=           1.01         [0.91; 1.12]         1.10         [0.90; 1.34]           1.20         [0.90; 1.59]         1.31         [0.86; 1.98]           1.49         [0.79; 2.82]         [0.79; 2.82]	34 ← 0.30 [0.08; 1.05] 1.30 [0.95; 1.79] 1.16 [0.64; 2.11] 0.82 [0.33; 2.03] 0.56 [0.15; 2.12] 0.32 [0.04; 2.40]
Intracerebral haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=222 + 0.97 [0.74; 1.2 1.15 [1.10; 1.2 - 1.90 [1.67; 2.4 - 2.81 [2.30; 3.4 - 4.15 [3.14; 5.4 > 7.46 [5.00; 11.1	1] <b>¢</b> 7] <b>₽</b> 4] <b>₽</b> 9] <b>₽</b>	1.03         [0.82; 1.30]         n=2           1.02         [0.96; 1.08]         1.22         [1.08; 1.39]           1.50         [1.27; 1.76]         1.85         [1.48; 2.32]           —         2.55         [1.81; 3.57]	235 - 0.86 [0.63; 1.17] ■ 1.07 [1.00; 1.16] ■ 1.31 [1.12; 1.52] - 1.52 [1.21; 1.89] - 1.76 [1.29; 2.41] - 2.20 [1.38; 3.51]
Peripheral arterial disease 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1123 ■ 0.84 [0.73; 0.9 ■ 1.06 [1.03; 1.0 ■ 1.77 [1.08; 1.2 ■ 1.25 [1.10; 1.4 ■ 1.25 [1.10; 1.4 ■ 1.43 [1.11; 1.6	9] <b>0</b> 7] <b>0</b> 3] <b>1</b> 0] <b>1</b>	1.01         [0.92; 1.12]         n=6           1.00         [0.98; 1.03]         1.05           1.05         [0.99; 1.11]         1.11           1.11         [1.02; 1.20]         1.17           1.12         [1.05; 1.52]         1.52	575       1.08 [0.92; 1.26]         1.00 [0.96; 1.04]         1.06 [0.97; 1.16]         1.15 [0.99; 1.32]         1.24 [1.00; 1.53]         1.39 [1.01; 1.91]
Abdominal aortic aneurysm 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=68 - 0.79 [0.46; 1.3 1.16 [1.05; 1.2 - 1.72 [1.31; 2.2 - 2.30 [1.50; 3.5 - 3.06 [1.69; 5.5 - 4.72 [2.01; 11.0 1 2 3 4 5 Hazard ratio	8] <b>Ö</b> 6] <b>T</b> 1] <b>T</b> 4] <b>T</b>		76 0.75 [0.50; 1.13] 1.14 [1.02; 1.26] − 1.58 [1.31; 1.91] − 2.02 [1.59; 2.56] 2.57 [1.89; 3.53] 3.72 [2.37; 5.84] 1 2 3 4 5 Hazard ratio

Figure S 12 Hazard ratios (95% CIs) for the associations of different cutoffs of systolic blood pressure (reference 115 mmHg) with cardiovascular endpoints in people not receiving blood pressure medications at baseline adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	Age 60 to 79		Age 80+	
Stable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=2180	HR 95% CI 0.70 [0.61; 0.81] 1.16 [1.11; 1.22] 1.56 [1.44; 1.70] 2.20 [2.01; 2.42] 3.48 [3.05; 3.97] → 5.50 [4.56; 6.64]	n=2613 I I I I I I I I I I I I I I I I I I I	HR 95% Cl 0.73 [0.67; 0.80] 1.14 [1.10; 1.19] 1.49 [1.34; 1.67] 1.91 [1.66; 2.20] 2.41 [2.09; 2.77] 3.00 [2.54; 3.54]	n=300 =	HR 95% Cl 0.47 [0.34; 0.65] 1.38 [1.20; 1.59] 2.60 [1.73; 3.91] → 4.31 [2.40; 7.72] → 5.11 [2.90; 9.01] → 5.39 [3.07; 9.46]
Unstable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=3142	□ 0.77 [0.69; 0.86] □ 1.12 [1.06; 1.15] □ 1.39 [1.31; 1.48] ■ 1.81 [1.68; 1.95] -■ 2.56 [2.28; 2.87] -■ 3.62 [3.06; 4.29]	n=2737 <b>D</b> 	0.75 [0.69; 0.82] 1.13 [1.09; 1.17] 1.43 [1.28; 1.58] 1.72 [1.50; 1.96] 1.94 [1.70; 2.22] 2.16 [1.84; 2.55]	n=337 <b>=</b>	0.83         [0.66; 1.04]           1.08         [0.98; 1.20]           1.27         [0.96; 1.69]           1.45         [0.98; 2.16]           1.55         [1.05; 2.29]           1.62         [1.05; 2.50]
Myocardial infarction 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=2980	■ 0.71 [0.63; 0.80] ■ 1.14 [1.10; 1.19] ■ 1.45 [1.36; 1.55] ■ 1.85 [1.71; 2.00] -■ 2.55 [2.26; 2.87] -■ 3.51 [2.94; 4.18]	n=2768 <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b>	0.77 [0.71; 0.84] 1.12 [1.08; 1.16] 1.39 [1.25; 1.55] 1.69 [1.48; 1.94] 2.00 [1.75; 2.29] 2.34 [2.00; 2.75]	n=554	0.89 [0.74; 1.06] 1.05 [0.98; 1.13] 1.17 (0.94; 1.46] 1.35 [0.99; 1.83] 1.63 [1.21; 2.21] 1.99 [1.44; 2.76]
Unheraided CHD death 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=600	0.73 [0.56; 0.95] 1.14 [1.05; 1.25] - 1.50 [1.29; 1.75] - 2.07 [1.74; 2.47] - 3.19 [2.47; 4.12] - 4.90 [3.39; 7.07]	n=1036	0.80 [0.69; 0.93] 1.10 [1.03; 1.17] 1.33 [1.11; 1.60] 1.68 [1.33; 2.12] 2.27 [1.81; 2.85] — 3.07 [2.38; 3.97]	n=428	1.26         [1.07; 1.48]           0.91         [0.84; 0.97]           0.75         [0.61; 0.92]           0.69         [0.52; 0.91]           0.76         [0.58; 1.01]           0.90         [0.64; 1.28]
Heart failure 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=699	■ 0.86 [0.68; 1.08] ■ 1.10 [1.02; 1.19] ■ 1.52 [1.32; 1.74] ■ 2.50 [2.15; 2.91] ■ 4.94 [3.99; 6.11] ■ 9.73 [7.22; 13.13]	n=2433	0.92 [0.84; 1.00] 1.04 [1.00; 1.08] 1.13 [1.01; 1.26] 1.32 [1.14; 1.52] 1.73 [1.51; 1.99] 2.29 [1.95; 2.69]	n=1429 <b>G</b> <b>F</b> 	0.93 [0.84; 1.03] 1.03 [0.99; 1.08] 1.10 [0.97; 1.25] 1.21 [1.01; 1.45] 1.43 [1.20; 1.70] 1.70 [1.40; 2.07]
Cardiac arrest/SCD 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=584	1.09         [0.88; 1.34]           1.00         [0.94; 1.07]           1.11         [0.99; 1.25]           1.13         [1.22; 1.68]           2.02         [1.54; 2.66]           2.02         [1.54; 2.66]	n=626	1.01 [0.86; 1.18] 1.00 [0.93; 1.07] 1.00 [0.83; 1.21] 1.08 [0.85; 1.37] 1.30 [1.01; 1.66] 1.58 [1.14; 2.19]	n=68	1.35         [0.89; 2.04]           0.88         [0.74; 1.05]           0.69         [0.41; 1.15]           0.60         [0.30; 1.22]           0.66         [0.32; 1.33]           0.77         [0.32; 1.85]
Transient ischaemic attack 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1364	0.93 [0.80; 1.08]     1.04 [0.99; 1.09]     1.17 [1.08; 1.28]     1.41 [1.26; 1.57]     − 1.79 [1.49; 2.15]     2.29 [1.74; 3.00]	n=2450 <b>G</b>	0.93 [0.85; 1.01] 1.03 [0.99; 1.07] 1.10 [0.99; 1.22] 1.19 [1.05; 1.36] 1.34 [1.17; 1.53] 1.50 [1.27; 1.77]	n=905	0.95         [0.84; 1.08]           1.02         [0.97; 1.08]           1.07         [0.91; 1.24]           1.11         [0.89; 1.38]           1.16         [0.93; 1.43]           1.20         [0.93; 1.55]
Ischaemic stroke 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=610		n=1171	0.91 [0.80; 1.04] 1.04 [0.98; 1.10] 1.14 [0.97; 1.34] 1.39 [1.13; 1.71] 2.01 [1.64; 2.46] - 2.94 [2.34; 3.71]	n=438	0.99         [0.83; 1.19]           1.00         [0.93; 1.08]           1.01         [0.81; 1.27]           1.05         [0.77; 1.44]           1.17         [0.85; 1.59]           1.31         [0.91; 1.87]
Subarachnoid haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=394		n=153	1.12 [0.83; 1.51] 0.95 [0.84; 1.08] 0.87 [0.61; 1.25] 0.87 [0.55; 1.37] 0.98 [0.61; 1.60] 1.13 [0.57; 2.21]	n=23 ++	$\begin{array}{ccc} 0.66 & [0.25; 1.75] \\ 1.19 & [0.79; 1.81] \\ \hline 1.66 & [0.50; 5.56] \\ \hline 2.02 & [0.37; 10.94] \\ \hline 1.81 & [0.35; 9.39] \\ \hline 1.47 & [0.24; 9.08] \end{array}$
Intracerebral haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=310	<ul> <li>■ 1.16 [0.88; 1.54]</li> <li>■ 1.01 [0.93; 1.09]</li> <li>■ 1.35 [1.15; 1.60]</li> <li>■ 2.53 [2.08; 3.08]</li> <li>→ 5.98 [4.45; 8.04]</li> <li>&gt; 14.14 [9.26; 21.59]</li> </ul>	n=461	0.89 [0.72; 1.10] 1.05 [0.96; 1.15] 1.18 [0.91; 1.51] 1.42 [1.02; 1.97] 1.94 [1.41; 2.67] - 2.67 [1.85; 3.88]	n=176	0.91         [0.67; 1.23]           1.04         [0.91; 1.19]           1.14         [0.78; 1.66]           1.30         [0.76; 2.22]           1.62         [0.95; 2.74]           2.04         [1.15; 3.60]
Peripheral arterial disease 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1740	0.95 [0.83; 1.09] 1.04 [1.00; 1.09] 1.26 [1.17; 1.36] − 2.61 [2.25; 3.03] 3.97 [3.19; 4.94]	n=2308	0.97 [0.89; 1.05] 1.02 [0.98; 1.05] 1.06 [0.96; 1.18] 1.23 [1.07; 1.40] 1.66 [1.45; 1.89] 2.27 [1.93; 2.67]	n=464 =	0.78         [0.64; 0.96]           1.11         [1.02; 1.21]           1.37         [1.07; 1.77]           1.65         [1.15; 2.35]           1.84         [1.30; 2.61]           2.00         [1.37; 2.91]
Abdominal aortic aneurysm 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=200	1.08 [0.72; 1.63] 1.00 [0.88; 1.14] 1.14 [0.90; 1.45] 1.53 [1.16; 2.01] 2.27 [1.49; 3.48] 3.38 [1.83; 6.27] 1 2 3 4 5 Hazard ratio	n=834	1.02 [0.89; 1.18] 0.99 [0.93; 1.05] 0.98 [0.82; 1.16] 1.00 [0.81; 1.25] 1.10 [0.88; 1.37] 1.20 [0.90; 1.61] 4 5	n=194	0.86 [0.64; 1.17] 1.07 [0.94; 1.21] 1.21 [0.83; 1.76] 1.35 [0.80; 2.28] 1.46 [0.88; 2.44] 1.55 [0.87; 2.76]

Figure S 13 Hazard ratios (95% CIs) for the associations of different cutoffs of diastolic blood pressure (reference 75 mmHg) with cardiovascular endpoints in people not receiving blood pressure medications at baseline adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	Age 60 to 79		Age 80+	
Stable angina		HR 95% CI		HR 95% CI		HR 95% CI
Stable angina           60 to 74         r           75 to 84         r           85 to 89         90 to 94           95 to 99         over 100	n=2180	■ 0.75 [0.67; 0.83] ■ 1.13 [1.10; 1.16] ■ 1.49 [1.42; 1.56] ■ 1.80 [1.67; 1.94] ■ 2.17 [1.96; 2.41] ■ 2.89 [2.48; 3.37]	n=2613 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.92 [0.84; 1.00] 1.05 [1.02; 1.09] 1.16 [1.10; 1.23] 1.25 [1.15; 1.35] 1.34 [1.19; 1.50] 1.49 [1.25; 1.76]	n=300 •	0.67 [0.52; 0.87] 1.17 [1.07; 1.28] 1.28 [1.08; 1.51] 1.29 [1.00; 1.66] 1.29 [0.90; 1.85] 1.29 [0.76; 2.21]
Unstable angina 60 to 74 r 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=3142	0.79         [0.73; 0.86]           1.10         [1.08; 1.12]           1.38         [1.32; 1.44]           1.61         [1.51; 1.72]           2.37         [2.07; 2.71]	n=2737 <b>5</b> 5 5 <del>5</del> <del>6</del> - <del>5</del> -	0.90 [0.83; 0.98] 1.06 [1.02; 1.09] 1.15 [1.09; 1.21] 1.21 [1.12; 1.31] 1.27 [1.14; 1.42] 1.38 [1.16; 1.63]	n=337 =	0.88 [0.71; 1.08] 1.06 [0.98; 1.14] 1.09 [0.94; 1.27] 1.10 [0.86; 1.40] 1.11 [0.78; 1.57] 1.12 [0.67; 1.87]
Myocardial infarction           60 to 74         r           75 to 84         r           85 to 89         90 to 94           95 to 99         over 100	n=2980	□ 0.79 [0.73; 0.87] □ 1.10 [1.08; 1.12] □ 1.35 [1.30; 1.41] □ 1.56 [1.46; 1.66] □ 1.79 [1.63; 1.97] - 2.22 [1.93; 2.54]	n=2768 <b>4</b> 2 <b>2</b> 	0.99 [0.91; 1.07] 1.02 [1.00; 1.05] 1.12 [1.06; 1.18] 1.21 [1.13; 1.31] 1.32 [1.18; 1.47] 1.50 [1.27; 1.76]	n=554	0.90 [0.77; 1.06] 1.04 [0.99; 1.10] 1.06 [0.94; 1.20] 1.06 [0.88; 1.28] 1.06 [0.88; 1.39] 1.05 [0.70; 1.58]
Unheralded CHD death 60 to 74 75 to 84 85 to 89 90 to 84 95 to 99 over 100	n=600	● 0.98 [0.82; 1.17] ■ 1.07 [1.03; 1.11] ■ 1.42 [1.31; 1.55] ■ 2.26 [1.87; 2.73] ■ 3.21 [2.44; 4.22]	n=1036	0.86 [0.75; 0.99] 1.09 [1.03; 1.16] 1.30 [1.18; 1.42] 1.47 [1.30; 1.66] 1.66 [1.40; 1.97] 2.00 [1.55; 2.58]	n=428	1.02 [0.86; 1.21] 0.99 [0.93; 1.05] 0.97 [0.85; 1.11] 0.96 [0.77; 1.20] 0.95 [0.69; 1.31] 0.94 [0.58; 1.51]
Heart failure 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=699	0.87 [0.73; 1.05] ■ 1.13 [1.09; 1.18] ■ 1.71 [1.58; 1.85] - 2.37 [2.12; 2.66] .29 [2.81; 3.85] → 5.37 [4.28; 6.76]	n=2433 <b>P</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b> <b>D</b>	1.01 [0.93; 1.10] 1.03 [1.00; 1.06] 1.22 [1.16; 1.29] 1.44 [1.34; 1.55] 1.71 [1.53; 1.90] 2.20 [1.87; 2.59]	n=1429 <b>C</b> D S <del>S</del> <del>-</del>	0.90 [0.81; 0.99] 1.06 [1.02; 1.10] 1.16 [1.08; 1.24] 1.22 [1.10; 1.37] 1.30 [1.11; 1.52] 1.41 [1.11; 1.78]
Cardiac arrest/SCD 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=584	1.01         [0.86; 1.19]           1.04         [1.00; 1.07]           1.22         [1.11; 1.35]           1.41         [1.20; 1.65]           1.62         [1.30; 2.03]           2.00         [1.44; 2.77]	n=626	0.96 [0.80; 1.13] 1.05 [0.99; 1.12] 1.25 [1.12; 1.40] 1.45 [1.25; 1.69] 1.70 [1.37; 2.10] 2.14 [1.56; 2.93]	n=68	1.21 [0.81; 1.80] 0.94 [0.82; 1.08] 0.94 [0.68; 1.30] 0.98 [0.57; 1.67] 1.02 [0.47; 2.22] 1.08 [0.34; 3.42]
Transient ischaemic attack 60 to 74 r 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1364	0.93         [0.83; 1.05]           1.05         [1.02; 1.07]           1.21         [1.13; 1.29]           1.34         [1.21; 1.49]            1.70           1.70         [1.41; 2.20]	n=2450 C C C <del>C</del> <del></del> -	0.96 [0.88; 1.04] 1.03 [1.00; 1.07] 1.11 [1.05; 1.17] 1.17 [1.08; 1.27] 1.24 [1.10; 1.40] 1.35 [1.13; 1.61]	n=905 <b>n</b> G <del>G</del> <del>-</del>	0.99 [0.89; 1.12] 1.02 [0.98; 1.06] 1.08 [0.99; 1.18] 1.14 [0.99; 1.31] 1.20 [0.98; 1.47] 1.30 [0.97; 1.76]
Ischaemic stroke 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=610	0.83 [0.69; 1.00]     1.11 [1.07; 1.15]     1.47 [1.34; 1.61]     1.82 [2.09]     2.24 [1.83; 2.73]     3.07 [2.29; 4.11]	n=1171 <b>2</b> <b>3</b> <b>4</b> <b>4</b> <b>4</b> <b>4</b>	0.89 [0.78; 1.02] 1.09 [1.03; 1.15] 1.35 [1.24; 1.47] 1.60 [1.43; 1.79] 1.90 [1.63; 2.22] 2.47 [1.97; 3.11]	n=438 <b>*</b> <b>5</b> *- *-	0.99 [0.84; 1.18] 1.02 [0.96; 1.08] 1.11 [0.98; 1.25] 1.19 [0.98; 1.45] 1.27 [0.96; 1.69] 1.42 [0.93; 2.15]
Subarachnoid haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=394	■ 0.84 [0.69; 1.03] ■ 1.10 [1.06; 1.15] ■ 1.46 [1.30; 1.64] ■ 1.80 [1.48; 2.17] ■ 2.12 [1.69; 2.90] ■ 3.02 [2.04; 4.49]	n=153	1.06 [0.77; 1.47] 1.00 [0.88; 1.13] 1.10 [0.88; 1.36] 1.22 [0.89; 1.67] 1.36 [0.86; 2.15] 1.60 [0.80; 3.19]	n=23	0.51 [0.17; 1.48] 1.18 [0.82; 1.71] 1.02 [0.50; 2.09] 0.77 [0.25; 2.41] 0.58 [0.11; 2.99] 0.38 [0.03; 4.34]
Intracerebral haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=310	1.09 [0.87; 1.36] 1.11 [1.06; 1.16] ■ 1.83 [1.65; 2.02] .79 [2.40; 3.25] 	n=461 <b>*</b> 	0.96 [0.78; 1.18] 1.07 [0.99; 1.15] 1.37 [1.20; 1.56] 1.71 [1.45; 2.03] 2.16 [1.71; 2.72] 3.05 [2.16; 4.29]	n=176 •	0.80 [0.58; 1.10] 1.13 [1.01; 1.27] 1.38 [1.14; 1.68] 1.58 [1.19; 2.10] 1.80 [1.21; 2.69] 2.20 [1.22; 3.96]
Peripheral arterial disease 60 to 74 r 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1740	0.99 [0.90; 1.09] 1.02 [1.00; 1.04] 1.11 [1.05; 1.18] 1.18 [1.07; 1.30] 1.26 [1.10; 1.45] - 1.40 [1.14; 1.71]	n=2308 <b>2</b> 5 5 5 5 5 5 5 5	1.10 [1.01; 1.19] 0.98 [0.95; 1.01] 1.02 [0.96; 1.07] 1.08 [0.99; 1.18] 1.16 [1.02; 1.31] 1.28 [1.06; 1.54]	n=464	1.02 [0.86; 1.20] 1.01 [0.95; 1.07] 1.07 [0.95; 1.21] 1.14 [0.93; 1.38] 1.20 [0.91; 1.60] 1.31 [0.86; 2.00]
Abdominal aortic aneurysm 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=200	1.03 [0.76; 1.41] 1.05 [0.99; 1.12] 1.35 [1.16; 1.57] 1.66 [1.31; 2.11] 2.82 [1.72; 4.60] 1 2 3 4 5 Hazard ratio	n=834	0.99 [0.85; 1.15] 1.05 [1.00; 1.12] 1.35 [1.22; 1.48] 1.69 [1.49; 1.92] 2.14 [1.80; 2.54] 3.04 [2.36; 3.93] 4 5	n=194	0.65 [0.46; 0.93] 1.26 [1.11; 1.44] 1.85 [1.51; 2.27] 2.38 [1.83; 3.08] 3.05 [2.16; 4.31] ↔ 4.44 [2.70; 7.28] 5

Figure S 14 Hazard ratios (95% CIs) for the associations of different cutoffs of diastolic blood pressure (reference 75 mmHg) with cardiovascular endpoints in people receiving blood pressure medications at baseline adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	Age	60 to 79	Age 80+	
Stable angina		HR 95% CI		HR 95% CI		HR 95% CI
60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1769	0.90         [0.80; 1.00]           1.07         [1.02; 1.13]           1.23         [1.13; 1.35]           1.38         [1.26; 1.52]           1.55         [1.39; 1.74]           -         1.85           1.85         [1.58; 2.18]	n=3075	0.95 [0.87; 1.04] 1.02 [0.99; 1.05] 1.10 [1.03; 1.18] 1.19 [1.10; 1.28] 1.29 [1.17; 1.42] 	n=412 =- = -=- -=-	0.93 [0.73; 1.17] 1.04 [0.99; 1.10] 1.19 [1.05; 1.34] 1.31 [1.09; 1.58] 1.46 [1.12; 1.89] 1.70 [1.15; 2.52]
Unstable angina 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=2280	0.84         [0.76; 0.93]           1.09         [1.04; 1.13]           1.17         [1.09; 1.27]           1.19         [1.07; 1.30]           1.20         [1.02; 1.40]	n=3373 <b>5</b> 9 9 8 9 1 1	1.09 [1.00; 1.18] 0.97 [0.95; 1.00] 0.97 [0.92; 1.03] 1.02 [0.95; 1.10] 1.09 [0.99; 1.19] 1.19 [1.02; 1.38]	n=480 =	1.00 [0.81; 1.23] 1.01 [0.96; 1.06] 1.06 [0.95; 1.19] 1.10 [0.92; 1.32] 1.15 [0.89; 1.50] 1.23 [0.83; 1.83]
Myocardial infarction 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=1506	0.90         [0.80; 1.01]           1.06         [1.00; 1.11]           1.14         [1.04; 1.25]           1.18         [1.07; 1.31]           1.23         [1.08; 1.39]           -         1.29           1.29         [1.08; 1.55]		0.94         [0.85; 1.05]           1.03         [0.99; 1.06]           1.11         [1.04; 1.20]           1.21         [1.11; 1.31]           1.31         [1.18; 1.46]           -         1.49           1.49         [1.26; 1.76]	n=673 = 0 = 	0.81 [0.66; 0.99] 1.08 [1.02; 1.13] 1.23 [1.12; 1.36] 1.33 [1.15; 1.54] 1.44 [1.17; 1.77] 1.62 [1.19; 2.21]
Unheralded CHD death 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=261	■ 0.75 [0.53; 1.05]     ■ 1.17 [1.00; 1.36]     ■ 1.45 [1.11; 1.90]     ■ 1.63 [1.23; 2.17]     ■ 1.63 [1.33; 2.50]     ■ 2.16 [1.42; 3.27]	n=904 -	1.06 [0.90; 1.25]     1.00 [0.94; 1.05]     1.08 [0.96; 1.22]     1.26 [1.11; 1.44]     1.51 [1.27; 1.79]     −     1.97 [1.52; 2.55]	n=432 =-	1.20 [0.98; 1.47] 0.96 [0.91; 1.01] 0.96 [0.86; 1.08] 1.00 [0.83; 1.21] 1.04 [0.79; 1.38] 1.11 [0.73; 1.69]
Heart failure 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=546		n=3365 G S S	1.12         [1.04; 1.22]           0.97         [0.94; 1.00]           1.03         [0.97; 1.09]           1.19         [1.12; 1.28]           4.12         [1.30; 1.56]           1.85         [1.61; 2.13]	n=1965 <b>F</b> D D E - <b>a</b> -	0.95 [0.86; 1.06] 1.03 [1.01; 1.06] 1.16 [1.10; 1.22] 1.28 [1.18; 1.39] 1.41 [1.25; 1.59] 1.63 [1.36; 1.95]
Cardiac arrest/SCD 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=370		n=635		n=72	1.05 [0.61; 1.81] 0.97 [0.85; 1.11] 0.88 [0.64; 1.21] 0.82 [0.48; 1.39] 0.75 [0.35; 1.65] 0.67 [0.21; 2.18]
Transient ischaemic attack 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=730	0.93 [0.79; 1.09] 1.05 [0.98; 1.13] 1.18 [1.04; 1.34] ■ 1.31 [1.13; 1.51] ■ 1.75 [1.21; 1.74] ■ 1.70 [1.31; 2.21]	n=2424 <b>C</b> C C	1.02         [0.92; 1.12]           1.00         [0.97; 1.04]           1.07         [0.98; 1.15]           1.17         [1.08; 1.27]           1.31         [1.17; 1.46]           1.54         [1.30; 1.82]	n=894 = 2 = -=	0.79 [0.67; 0.94] 1.08 [1.04; 1.13] 1.25 [1.15; 1.36] 1.36 [1.20; 1.54] 1.47 [1.23; 1.76] 1.67 [1.28; 2.18]
Ischaemic stroke 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=327		n=1281 <b>=</b> D	0.89 [0.76; 1.03] 1.05 [1.00; 1.11] 1.24 [1.12; 1.39] 1.46 [1.29; 1.64] 	n=502 =	0.88 [0.70; 1.10] 1.05 [0.99; 1.11] 1.15 [1.03; 1.29] 1.22 [1.03; 1.45] 1.29 [1.02; 1.65] 1.41 [0.98; 2.03]
Subarachnoid haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=139		n=101	1.07 [0.65; 1.78]           1.00 [0.84; 1.19]           1.13 [0.78; 1.63]           1.42 [0.95; 2.11]           1.83 [1.13; 2.95]           2.70 [1.34; 5.42]	n=20	0.07 [0.00; 0.94] 1.86 [0.96; 3.61] → 1.76 [0.60; 5.11] 0.95 [0.24; 3.77] 0.50 [0.07; 3.45] 0.19 [0.01; 3.60]
Intracerebral haemorrhage 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=124		n=418 -	- 0.90 [0.69; 1.18] - 1.05 [0.96; 1.15] - 1.31 [1.08; 1.59] - 1.66 [1.35; 2.04] - 2.15 [1.68; 2.74] - 3.16 [2.23; 4.47]	n=150	0.96 [0.65; 1.43] 1.05 [0.95; 1.15] 1.29 [1.06; 1.56] 1.54 [1.18; 2.02] 1.86 [1.28; 2.69] - 2.44 [1.41; 4.23]
Peripheral arterial disease 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=955	0.93 [0.81; 1.07] 1.03 [0.97; 1.10] 1.04 [0.94; 1.17] 1.03 [0.91; 1.17] 1.01 [0.85; 1.19] 0.98 [0.76; 1.25]	n=2389	1.16 [1.05; 1.27] 0.95 [0.92; 0.98] 0.92 [0.86; 0.98] 0.95 [0.87; 1.03] 0.99 [0.88; 1.11] 1.06 [0.89; 1.28]	n=558	1.11 [0.92; 1.33] 1.00 [0.96; 1.04] 1.11 [1.01; 1.22] 1.25 [1.07; 1.46] 1.41 [1.14; 1.76] 1.70 [1.23; 2.36]
Abdominal aortic aneurysm 60 to 74 75 to 84 85 to 89 90 to 94 95 to 99 over 100	n=110	1.05 [0.67; 1.65] 1.02 [0.83; 1.25] 1.24 [0.86; 1.79] 1.59 [1.07; 2.35] 2.10 [1.36; 3.23] 3.20 [1.84; 5.58] 1 2 3 4 5 Hazard ratio	n=733 ●	0.72 [0.58; 0.90]     1.14 [1.05; 1.23]     1.51 [1.29; 1.77]     1.84 [1.56; 2.18]     2.52 [1.85; 2.74]     3.05 [2.31; 4.03]     2 3 4 5 Hazard ratio	n=190	0.73 [0.48; 1.10] 1.14 [1.03; 1.27] 1.59 [1.31; 1.92] 2.00 [1.58; 2.53] 2.53 [1.86; 3.43] 3.59 [2.32; 5.55] 5

Figure S 15 Hazard ratios (95% CIs) for the associations of different cutoffs of systolic blood pressure (reference 115 mmHg) with cardiovascular endpoints in people receiving blood pressure medications at baseline adjusted for age (BP was modelled as a continuous variable using splines with 3 knots).

		Age 30 to 59	A	ge 60 to 79		Age 80+	
Stable angina		HR 95% CI		н	R 95% CI		HR 95% CI
90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=1769	■ 0.83 [0.74; 0.94] ■ 1.08 [1.03; 1.14] ■ 1.28 [1.13; 1.45] ■ 1.58 [1.37; 1.82] -■ 2.09 [1.79; 2.45] -■ 2.78 [2.24; 3.44]	n=3075		6 [0.89; 1.03] n=41 2 [0.99; 1.05] 6 [0.96; 1.17] 5 [0.99; 1.35] 0 [1.28; 1.75] 3 [1.72; 2.39]		0.84         [0.68; 1.03]           1.08         [0.99; 1.18]           1.27         [0.97; 1.68]           1.55         [1.00; 2.39]           1.98         [1.26; 3.11]           2.51         [1.61; 3.92]
Unstable angina 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=2280	■ 0.83 [0.75; 0.93] ■ 1.08 [1.03; 1.12] ■ 1.23 [1.11; 1.37] ■ 1.36 [1.21; 1.54] ■ 1.49 [1.29; 1.72] ■ 1.63 [1.33; 1.99]	n=3373		0 [0.93; 1.07] n=48 0 [0.97; 1.03] 0 [0.91; 1.09] 2 [0.88; 1.17] 1 [0.97; 1.28] 5 [1.06; 1.46]		1.00         [0.85; 1.18]           1.00         [0.93; 1.08]           1.00         [0.80; 1.25]           1.02         [0.72; 1.45]           1.16         [0.80; 1.68]           1.37         [0.94; 2.00]
Myocardial infarction 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=1506	0.87 [0.77; 0.99] 1.06 [1.01; 1.12] 1.19 [1.05; 1.35] 1.33 [1.15; 1.55] - 1.53 [1.28; 1.81] - 1.74 [1.37; 2.23]	n=2548	■ 1.07 ■ 1.24 ■ 1.44 ■ 1.7	5 [0.78; 0.93] n=67 7 [1.03; 1.11] 6 [1.21; 1.76] 1 [1.42; 2.05] 7 [1.62; 2.38]	3 <b>•</b>	0.87 [0.74; 1.02] 1.06 [0.99; 1.14] 1.21 [0.98; 1.50] 1.42 [1.01; 2.00] 1.76 [1.23; 2.51] 2.18 [1.54; 3.09]
Unheralded CHD death 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=261 ·	● 0.66 [0.45; 0.96] ● 1.19 [1.02; 1.39] ● 2.40 [1.51; 3.81] ● 3.69 [2.31; 5.87] ● 5.65 [3.24; 9.84]	n=904	■ 1.09 ■ 1.19 ■ 1.30 ■ 1.30	0 [0.78; 1.05] n=43 5 [0.98; 1.11] 5 [0.94; 1.40] 0 [0.95; 1.78] 5 [1.20; 2.25] 3 [1.54; 2.93]	2 == = =  	1.27         [1.09; 1.48]           0.90         [0.84; 0.96]           0.73         [0.59; 0.89]           0.60         [0.43; 0.84]           0.62         [0.44; 0.87]           0.71         [0.49; 1.02]
Heart failure 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=546	0.96 [0.77; 1.19] 1.02 [0.94; 1.12] 1.15 [0.92; 1.44] 1.159 [1.23; 2.07] 2.81 [2.14; 3.71] 4.99 [3.53; 7.06]	n=3365		2 [0.95; 1.10] n=196 9 [0.96; 1.02] 7 [0.88; 1.07] 0 [0.86; 1.16] 1 [1.12; 1.52] 2 [1.56; 2.14]	35 <b>12</b> 12 14 14 14 14 14 14 14 14 14 14 14 14 14	1.05         [0.97; 1.14]           0.98         [0.94; 1.01]           0.93         [0.84; 1.04]           0.92         [0.78; 1.08]           1.06         [0.89; 1.26]           1.31         [1.10; 1.57]
Cardiac arrest/SCD 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=370	■ 1.14 [0.90; 1.43] ■ 0.95 [0.87; 1.05] ■ 0.93 [0.74; 1.17] ■ 1.10 [0.84; 1.45] ■ 1.61 [1.17; 2.21] ■ 2.36 [1.51; 3.69]	n=635	□ 0.9( ■ 0.8( ■ 0.8( ■ 0.8( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.9( ■ 0.8( ■ 0.8	0 [0.95; 1.28] n=72 6 [0.90; 1.02] 8 [0.72; 1.07] 4 [0.62; 1.13] 1 [0.67; 1.24] 5 [0.74; 1.50]		0.99         [0.63; 1.55]           1.01         [0.82; 1.23]           1.02         [0.55; 1.87]           1.03         [0.39; 2.70]           1.06         [0.40; 2.84]           1.09         [0.40; 3.01]
Transient ischaemic attack 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=730	0.87 [0.72; 1.04] 1.06 [0.99; 1.14] 1.22 [1.01; 1.46] 1.44 [1.17; 1.78] 1.43 [1.44; 2.34] 1.44; 2.34]	n=2424	□ 1.00 ■ 1.0 <sup>-</sup> ■ 1.04 ■ 1.04	9 [0.91; 1.08] n=89 0 [0.97; 1.04] 1 [0.90; 1.13] 4 [0.88; 1.24] 3 [1.04; 1.47] 1 [1.25; 1.82]	4 <b>1</b> 	0.96         [0.85; 1.09]           1.02         [0.96; 1.08]           1.06         [0.90; 1.25]           1.13         [0.87; 1.47]           1.30         [0.99; 1.71]           1.54         [1.16; 2.03]
Ischaemic stroke 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=327	0.74 [0.55; 1.00] 1.14 [1.01; 1.28] 1.48 [1.09; 2.02] 2.05 [1.43; 2.95] 3.19 [2.18; 4.67] 4.96 [3.07; 8.02]	n=1281		7 [0.86; 1.10] n=50 1 [0.96; 1.07] 3 [0.87; 1.23] 3 [0.87; 1.46] 3 [1.18; 1.98] 9 [1.69; 2.86]		1.03         [0.87; 1.22]           0.99         [0.91; 1.06]           0.96         [0.76; 1.20]           0.96         [0.67; 1.38]           1.15         [0.79; 1.68]           1.46         [1.00; 2.13]
Subarachnoid haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 >180	n=139 4		n=101 ·	■ 1.07 ■ 1.29 ■ 1.49 ■ 1.49 ■ 1.83	4 [0.54; 1.31] n=20 7 [0.89; 1.30] 5 [0.70; 2.23] 9 [0.60; 3.70] 3 [0.73; 4.57] 3 [0.85; 5.82]		0.69 [0.26; 1.88] 1.18 [0.76; 1.83] +1.64 [0.42; 6.36] -2.22 [0.26; 19.09] -2.30 [0.25; 20.90] -2.04 [0.23; 18.07]
Intracerebral haemorrhage 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=124 -	0.72 [0.44; 1.19] 1.15 [0.94; 1.41] 1.64 [0.98; 2.75] → 2.88 [1.54; 5.37] 6.77 [3.61; 12.71] >15.99 [7.81; 32.75]	n=418		4 [0.85; 1.28] n=15 8 [0.90; 1.07] 5 [0.72; 1.23] 8 [0.64; 1.48] 0 [0.91; 2.14] 0 [1.42; 3.41]		0.98         [0.72; 1.33]           1.01         [0.88; 1.16]           1.03         [0.68; 1.56]           1.07         [0.55; 2.07]           1.20         [0.61; 2.39]           1.40         [0.70; 2.79]
Peripheral arterial disease 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=955	0.80 [0.67; 0.95] 1.10 [1.03; 1.18] 1.35 [1.14; 1.61] 1.76 [1.43; 2.15] 	n=2389	■ 1.00 ■ 1.20 ■ 1.20 ■ 1.44 -■ 2.12	7 [0.80; 0.96] n=55 6 [1.02; 1.10] 0 [1.06; 1.35] 4 [1.18; 1.74] 2 [1.74; 2.58] 7 [2.68; 3.98]	8 <b>•</b> ••	0.97         [0.82; 1.13]           1.02         [0.95; 1.09]           1.05         [0.84; 1.30]           1.11         [0.79; 1.57]           1.32         [0.93; 1.89]           1.62         [1.13; 2.32]
Abdominal aortic aneurysm 90 to 114 115 to 129 130 to 139 140 to 159 160 to 179 ≻180	n=110 ·	0.82         [0.48; 1.40]           1.09         [0.88; 1.36]           1.32         [0.76; 2.30]           1.72         [0.90; 3.31]           3.65         [1.57; 8.46]	n=733	□     1.03       ■     1.04       -■     1.04       -■     1.04       -■     1.04       -■     1.04       -■     1.04       -■     1.04       -■     1.04       -■     0.05	4 [0.80; 1.10] n=19 3 [0.96; 1.10] 9 [0.88; 1.33] 2 [0.81; 1.53] 4 [0.76; 1.42] 2 [0.64; 1.32]		0.98 [0.75; 1.28] 1.01 [0.90; 1.14] 1.03 [0.72; 1.49] 1.03 [0.58; 1.83] 0.92 [0.52; 1.66] 0.79 [0.42; 1.49]
		1 2 3 4 5 Hazard ratio		1 2 3 4 5 Hazard ratio		1 2 3 4 Hazard ratio	5

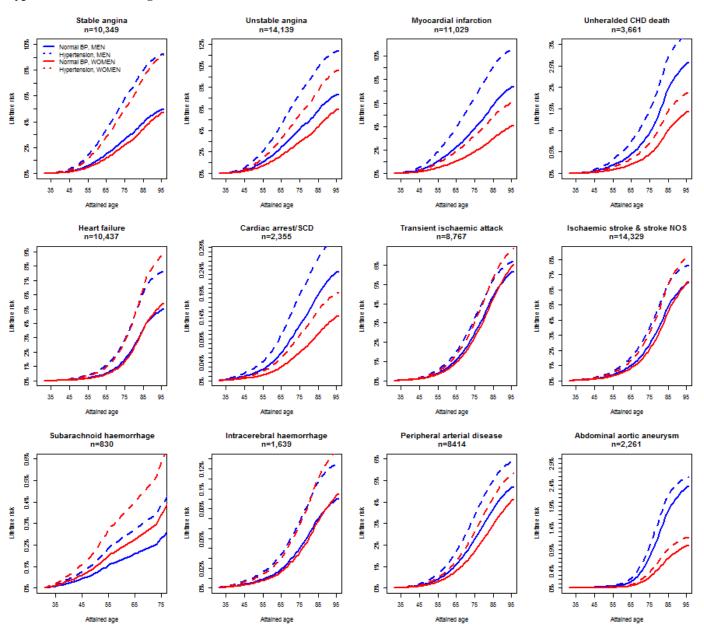
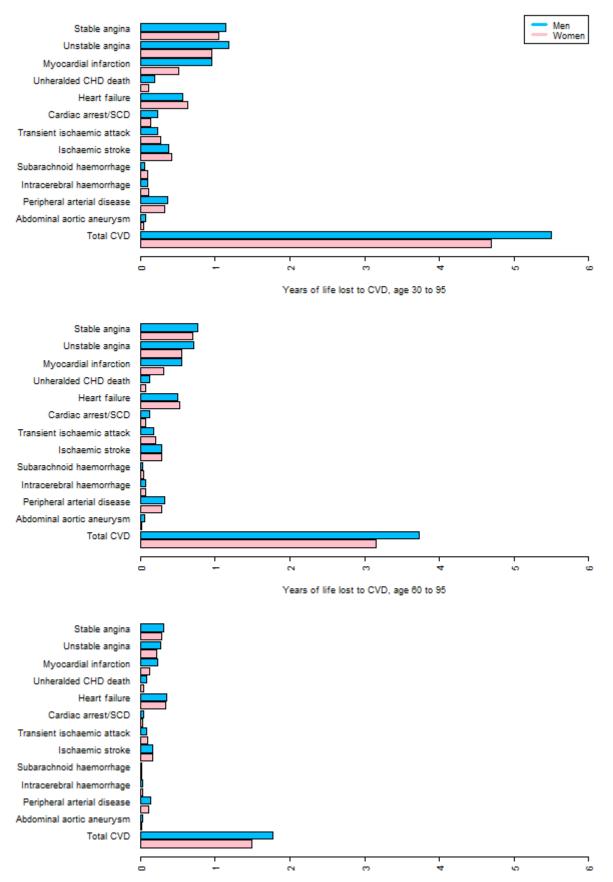


Figure S 16 Lifetime risk of 12 different cardiovascular diseases in men and women with normal blood pressure or hypertension\* at index age 30.

\*hypertension defined as systolic blood pressure  $\geq$ 140 or diastolic blood pressure  $\geq$  90 mmHg or use of blood pressure lowering treatments or physician-recorded diagnosis at baseline.

Figure S 17 Years of life lost to cardiovascular disease up to age 95 years in men and women associated with hypertension at index age 30, 60 and 80, adjusted for sex, smoking, diabetes, and total and HDL cholesterol.



Years of life lost to CVD, age 80 to 95

Figure S 18 Evaluation of heterogeneity\* at practice level of the associations of different cardiovascular outcomes with 20/10 mmHg increase in systolic/diastolic blood pressure.

#### Systolic blood pressure

#### Diastolic blood pressure

	I				
Stable angina		HR 95% CI			HR 95% CI
Fixed effects		1.39 [1.36; 1.42]	Stable angina Fixed effects		1.28 [1.25; 1.31]
Random effects	-	1.35 [1.31; 1.39]	Random effects		1.23 [1.19; 1.27]
Prediction interval	+	1.35 [0.97; 1.87]	Prediction interval		1.23 [0.90; 1.67]
Unstable series					
Unstable angina Fixed effects	-	1.26 [1.21; 1.30]	Unstable angina		
Random effects		1.26 [1.21; 1.30]	Fixed effects		1.22 [1.18; 1.26]
Prediction interval		1.26 [1.19; 1.33]	Random effects Prediction interval		1.22 [1.18; 1.26]
			Frediction Interval		1.22 [1.19; 1.25]
Myocardial infarction		4 00 14 07 4 00	Myocardial infarction		
Fixed effects		1.30 [1.27; 1.33]	Fixed effects	•	1.23 [1.21; 1.26]
Random effects Prediction interval		1.30 [1.27; 1.33] 1.30 [1.19; 1.41]	Random effects	•	1.23 [1.21; 1.26]
rediction interval		1.50 [1.15, 1.41]	Prediction interval		1.23 [1.14; 1.34]
Unheralded CHD death			Unheralded CHD death		
Fixed effects	-	1.27 [1.23; 1.32]	Fixed effects	-	1.24 [1.19; 1.28]
Random effects	-	1.27 [1.23; 1.33]	Random effects	-	1.24 [1.19; 1.29]
Prediction interval	· · · · · · · · · · · · · · · · · · ·	1.27 [1.04; 1.56]	Prediction interval		1.24 [1.07; 1.44]
Heart failure			Heart failure		
Fixed effects		1.26 [1.24; 1.29]	Fixed effects		1.23 [1.21; 1.26]
Random effects	•	1.26 [1.23; 1.29]	Random effects	-	1.23 [1.21; 1.26]
Prediction interval		1.26 [1.13; 1.42]	Prediction interval		1.23 [1.13; 1.35]
Cardiac arrest/SCD			0		
Fixed effects	-	1.19 [1.14; 1.25]	Cardiac arrest/SCD Fixed effects	-	1.20 [1.15; 1.26]
Random effects	-	1.19 [1.14; 1.25]	Random effects		1.20 [1.15; 1.26]
Prediction interval		1.19 [1.12; 1.27]	Prediction interval		1.20 [1.16; 1.24]
Transient ischaemic attack					
Fixed effects	0	1.14 [1.12; 1.17]	Transient ischaemic attack Fixed effects		4 45 (4 40: 4 47)
Random effects	-	1.14 [1.11; 1.17]	Random effects		1.15 [1.12; 1.17] 1.15 [1.12; 1.17]
Prediction interval	+	1.14 [0.95; 1.37]	Prediction interval	17	1.15 [1.12, 1.17]
Ischaemic stroke					
Fixed effects	-	1.34 [1.30; 1.39]	Ischaemic stroke	_	4 00 14 07 4 00
Random effects	-	1.34 [1.29; 1.39]	Fixed effects Random effects		1.32 [1.27; 1.36]
Prediction interval		1.34 [1.07; 1.68]	Prediction interval		1.32 [1.27; 1.36] 1.32 [1.17; 1.48]
Subarashasid kasmamkana					
Subarachnoid haemorrhage Fixed effects	_ <b>_</b>	1.47 [1.36; 1.59]	Subarachnoid haemorrhage		
Random effects		1.46 [1.34; 1.59]	Fixed effects		1.41 [1.31; 1.52]
Prediction interval		1.46 [0.93; 2.29]	Random effects Prediction interval		1.41 [1.31; 1.52]
			Prediction Interval		1.41 [1.24; 1.61]
Intracerebral haemorrhage Fixed effects		4 44 14 06: 4 501	Intracerebral haemorrhage		
Random effects		1.44 [1.36; 1.52] 1.42 [1.34; 1.51]	Fixed effects		1.51 [1.43; 1.59]
Prediction interval		1.42 [0.95; 2.13]	Random effects		1.48 [1.38; 1.59]
1 realization interval		1.42 [0.00, 2.10]	Prediction interval	1	1.48 [0.92; 2.39]
Peripheral arterial disease	_		Peripheral arterial disease		
Fixed effects		1.34 [1.31; 1.37]	Fixed effects	0	1.07 [1.04; 1.09]
Random effects Prediction interval		1.34 [1.30; 1.37]	Random effects		1.07 [1.04; 1.10]
rediction interval		1.34 [1.15; 1.55]	Prediction interval	+	1.07 [0.95; 1.20]
Abdominal aortic aneurysm			Abdominal aortic aneurysm		
Fixed effects		1.08 [1.03; 1.13]	Fixed effects	-	1.45 [1.39; 1.52]
Random effects Prediction interval		1.08 [1.03; 1.14]	Random effects	-■-	1.46 [1.38; 1.53]
Frediction Interval		1.08 [0.75; 1.57]	Prediction interval	· · · · · · · · · · · · · · · · · · ·	1.46 [1.16; 1.83]
	1 1.5 2	2.5		1 1.5 2	2.5
	Hazard ratio			Hazard ratio	2.0
				Hazaru Tauv	

\*Estimates of fixed effects are equivalent to those reported in the main analysis (but differ slightly because unlike in the main analysis were practices with at least 1 event contributed to the estimates, here we have considered studies with 2 or more for modelling purposes). Estimates of random effects account for practice level heterogeneity; differences between fixed effects and random effects signify that the heterogeneity impacts on the overall associations. The prediction interval expresses uncertainty about the association in a randomly chosen practice.<sup>1</sup>

#### Figure S 19 Hazard ratios (95% CIs) per 20/10 mmHg higher systolic or diastolic blood pressure adjusted for age and sex, using end points from different sources.

Systolic blood pressure					Diastolic blood pressure				
Stable angina	Events		HR	95% CI	Stable angina	Events		HR	95% CI
Primary care & secondary care Secondary care	10349 898	_ <b>_•</b> _		[1.38; 1.44] [1.17; 1.37]	Stable angina Primary care & secondary care Secondary care	10349 898			[1.25; 1.31] [1.10; 1.27]
Unstable angina Primary care & secondary care Secondary care	12349 7147	*		[1.26; 1.31] [1.22; 1.29]	Unstable angina Primary care & secondary care Secondary care	12349 7147	:		[1.19; 1.24] [1.16; 1.23]
Myocardial infarction Primary care & secondary care Secondary care	11029 10345	•		[1.26; 1.32] [1.29; 1.35]	Myocardial infarction Primary care & secondary care Secondary care	11029 10345	:		[1.19; 1.24] [1.18; 1.23]
Heart failure Primary care, secondary care & mortality Secondary care & mortality Mortality	10437 5359 1473	*	1.33	[1.25; 1.30] [1.29; 1.38] [1.24; 1.39]	Heart failure Primary care, secondary care & mortality Secondary care & mortality Mortality	10437 5359 1473	* *	1.22	[1.21; 1.26] [1.19; 1.26] [1.16; 1.31]
Cardiac arrest/SCD Primary care, secondary care & mortality Secondary care & mortality	2355 2603	-		[1.14; 1.25] [1.17; 1.28]	Cardiac arrest/SCD Primary care, secondary care & mortality Secondary care & mortality	2355 2603	*		[1.15; 1.26] [1.18; 1.29]
Transient ischaemic attack Primary care & secondary care Secondary care	8767 2709	* -*-		[1.12; 1.18] [1.11; 1.22]	Transient ischaemic attack Primary care & secondary care Secondary care	8767 2709	:		[1.12; 1.18] [1.11; 1.22]
Ischaemic stroke Primary care, secondary care & mortality Secondary care & mortality Mortality	4329 5797 684		1.35	[1.30; 1.40] [1.31; 1.39] [1.00; 1.18]	Ischaemic stroke Primary care, secondary care & mortality Secondary care & mortality Mortality	4329 5797 684	* *	1.28	[1.26; 1.35] [1.25; 1.32] [0.98; 1.17]
Subarachnoid haemorrhage Primary care, secondary care & mortality Secondary care & mortality Mortality	830 1033 420		1.42	[1.32; 1.55] [1.32; 1.52] [1.35; 1.69]	Subarachnoid haemorrhage Primary care, secondary care & mortality Secondary care & mortality Mortality	830 1033 420		1.38	[1.31; 1.53] [1.29; 1.48] [1.33; 1.65]
Intracerebral haemorrhage Primary care, secondary care & mortality Secondary care & mortality Mortality	1639 1806 944		1.42	[1.36; 1.53] [1.34; 1.49] [1.28; 1.49]	Intracerebral haemorrhage Primary care, secondary care & mortality Secondary care & mortality Mortality	1639 1806 944	-#- #-	1.45	[1.42; 1.59] [1.38; 1.53] [1.36; 1.57]
Peripheral arterial disease Primary care, secondary care & mortality Secondary care & mortality Mortality	8414 2569 243	* *	1.50	[1.32; 1.38] [1.43; 1.56] [1.02; 1.36]	Peripheral arterial disease Primary care, secondary care & mortality Secondary care & mortality Mortality	8414 2569 243 —	■ ■ ■	1.11	[1.04; 1.09] [1.06; 1.16] [0.92; 1.24]
Abdominal aortic aneurysm Primary care, secondary care & mortality Secondary care & mortality Mortality	1925 1374		1.11	[1.03; 1.13] [1.05; 1.17] [1.07; 1.22]	Abdominal aortic aneurysm Primary care, secondary care & mortality Secondary care & mortality Mortality	1925 1374		1.59 - 1.76	[1.38; 1.52] [1.51; 1.67] [1.66; 1.87]
		1 1.1 1.2 1.3 1.4 1.5 1.6 Hazard ratio					1 1.2 1.4 1.6 1.8 Hazard ratio		

In the main analysis all 3 sources of end points are used (primary care, secondary care and death records). To compute endpoints based on secondary care and mortality (second row where applicable) patients were followed up until a hospital admission or death for the specified event, ignoring diagnoses/events recorded in primary care. Similarly, for mortality endpoints patients were followed up until death, ignoring non-fatal presentations. The majority of deaths from stroke are unclassified (not included in the mortality estimate from ischaemic stroke shown here).

Figure S 20 Age and sex adjusted hazard ratios (95% CIs) for 20 mmHg higher systolic blood pressure according to the number of BP measurements taken within 2 years of baseline (1 or more [as in the main analysis], only 1, or 2 or more).

	Events			HR	95% CI
Stable angina			_		
SBP count>=1 (main)	10349		-		[1.39; 1.45]
SBP count==1 SBP count>=2	2696 7653		-		[1.23; 1.33] [1.41; 1.49]
SDI COUNTE-2	7000		-	1.45	[1.41, 1.45]
Unstable angina					
SBP count>=1 (main)	4139		_ <del>*</del>		[1.22; 1.32]
SBP count==1 SBP count>=2	1209 2930	·	*		[1.10; 1.25] [1.23; 1.34]
SBF Countred	2930		-	1.20	[1.25, 1.54]
Myocardial infarction					
SBP count>=1 (main)	11029		-		[1.29; 1.35]
SBP count==1	3768		*		[1.25; 1.34]
SBP count>=2	7261		•	1.37	[1.33; 1.41]
Unheralded CHD death					
SBP count>=1 (main)	3661		<b>+</b>		[1.22; 1.31]
SBP count==1	1062				[1.15; 1.31]
SBP count>=2	2599		<b>₽</b> -	1.29	[1.23; 1.35]
Heart failure					
SBP count>=1 (main)	10437			1.26	[1.24; 1.29]
SBP count==1	2755		<b>.</b>		[1.19; 1.28]
SBP count>=2	7682		=	1.28	[1.24; 1.31]
Cardiac arrest/SCD					
SBP count>=1 (main)	2355		<b>+</b>	1.20	[1.14; 1.26]
SBP count==1	697	-			[1.07; 1.27]
SBP count>=2	1658		<b></b>	1.19	[1.12; 1.26]
Transient ischaemic attack					
SBP count>=1 (main)	8767			1 15	[1.12; 1.17]
SBP count==1	2462		- -		[1.07; 1.17]
SBP count>=2	6305		<b>=</b>		[1.12; 1.19]
la chaomia atraka					
Ischaemic stroke SBP count>=1 (main)	4329		+	1 35	[1.30; 1.39]
SBP count==1	1156		- <b>-</b> -		[1.27; 1.43]
SBP count>=2	3173		<b>.</b>		[1.29; 1.40]
SBP count>=1 (main)	830			1 30	[1.28; 1.51]
SBP count==1	291		<b>_</b>		[1.18; 1.54]
SBP count>=2	539				[1.30; 1.61]
Intracerebral haemorrhage SBP count>=1 (main)	1639			1 / 2	[1.36; 1.52]
SBP count==1	481				[1.30, 1.32]
SBP count>=2	1158		<b>∎</b>		[1.40; 1.61]
Peripheral arterial disease SBP count>=1 (main)	8414		-	1 25	[4 04: 4 00]
SBP count==1	2347		<b>.</b>		[1.31; 1.38] [1.18; 1.29]
SBP count>=2	6067		-		[1.35; 1.44]
Abdominal aortic aneurysm	00004	_			10.00.4.00
SBP count>=1 (main) SBP count==1	2261 634				[0.99; 1.09] [1.00; 1.18]
SBP count==1 SBP count>=2	1627		-		[1.00; 1.18] [0.96; 1.09]
ce. oount -L	1021			<u>۲</u> ۲	[0.00, 1.00]
		0.6 0.8 1	1.2 1.4 1.6 1.8	2	
		Ha	azard ratio		

Figure S 21 Age and sex adjusted hazard ratios (95% CIs) for 20 mmHg higher systolic blood pressure based on a single measurement closest to the baseline (within 2 years of baseline).

Stable and a 40240			HR	95% CI
Stable angina n= 10349 SBP average SBP single				1.39; 1.45] 1.25; 1.30]
<b>Unstable angina n= 4139</b> SBP average SBP single				1.22; 1.32] 1.15; 1.22]
Myocardial infarction n= 11029 SBP average SBP single				1.29; 1.35] 1.19; 1.24]
Unheralded CHD death n= 3661 SBP average SBP single		*		1.22; 1.31] 1.15; 1.23]
Heart failure n= 10437 SBP average SBP single		. <b>•</b>		1.24; 1.29] 1.14; 1.18]
Cardiac arrest/SCD n= 2355 SBP average SBP single		*		1.14; 1.26] 1.13; 1.22]
Transient ischaemic attack n= 8767 SBP average SBP single		•		1.12; 1.17] 1.08; 1.12]
Ischaemic stroke n= 4329 SBP average SBP single		••		1.30; 1.39] 1.18; 1.25]
Subarachnoid haemorrhage n= 830 SBP average SBP single		- <b>-</b> - +		1.28; 1.51] 1.18; 1.35]
Intracerebral haemorrhage n= 1639 SBP average SBP single		**		1.36; 1.52] 1.21; 1.33]
Peripheral arterial disease n= 8414 SBP average SBP single				1.31; 1.38] 1.21; 1.26]
Abdominal aortic aneurysm n= 2261 SBP average SBP single	0.6 0.8	■ ■ 1 1.2 1.4 1.6 1.8	1.03 [0	0.99; 1.09] 0.99; 1.07]
		Hazard ratio		

Figure S 22 Age and sex adjusted hazard ratios (95% CIs) for 20 mmHg higher systolic blood pressure based on imputed and observed (main analysis) blood pressure levels.

Stable anging	Events		HR	95% CI
Stable angina imputed observed	13221 10349	-#- -#-		[1.30; 1.40] [1.36; 1.46]
Unstable angina imputed observed	16531 4139	- <b>e</b> -		[1.24; 1.31] [1.18; 1.32]
Myocardial infarction imputed observed	16239 11029	- <b>a</b> -		[1.23; 1.31] [1.25; 1.34]
Unheralded CHD death imputed observed	5515 3661	<b>_</b>		[1.15; 1.34] [1.19; 1.34]
Heart failure imputed observed	14359 10437	-₽- -₽-		[1.21; 1.28] [1.23; 1.32]
Cardiac arrest/SCD imputed observed	3375 2355	- <b>e</b>		[1.08; 1.23] [1.11; 1.29]
Transient ischaemic attack imputed observed	11714 8767	-₽ -₽-		[1.11; 1.18] [1.11; 1.19]
Ischaemic stroke observed imputed	4329 6053	<b>#_</b> _		[1.28; 1.42] [1.22; 1.34]
Subarachnoid haemorrhage imputed observed	1278 830	<b>e</b>		[1.15; 1.49] [1.25; 1.62]
Intracerebral haemorrhage imputed observed	2388 1639	<b>e</b>		[1.32; 1.50] [1.32; 1.58]
Peripheral arterial disease observed imputed	8414 11519	-#- -#-		[1.30; 1.40] [1.24; 1.32]
Abdominal aortic aneurysm imputed observed	3135 ← 2261	<b>├</b>		[0.94; 1.18] [1.00; 1.17]
	-	1 1.1 1.2 1.3 1.4 1.5 1.6 <sup>-</sup> Hazard ratio	1.7	

Dataset including observed and imputed BP, N= 1,937,360 patients; complete cases for SBP (as in main analysis) N= 1,258,006 patients.

#### **Supplementary methods**

#### **Multiple imputation**

#### Supplementary methods

#### Multiple imputation

Multiple imputation<sup>1</sup> was implemented using the *mice* algorithm in the statistical package R. Imputation models were estimated separately for men and women and included:

a) all the baseline covariates used in the main analysis (age, quadratic age, diabetes, smoking, systolic blood pressure, diastolic blood pressure, mean arterial pressure, pulse pressure, total cholesterol, HDL cholesterol, body mass index),

b) prior (between 1 and 4 years before study entry) and post (between 0 and 1 year after study entry) averages of continuous main analysis covariates and other measurements not in the main analysis (white cell count, haemoglobin, creatinine, alanine transferase),

c) baseline medications (statins, blood pressure medications, aspirin, oral contraceptives and hormone replacement therapy),

d) coexisting medical conditions (history of depression, cancer, renal disease, liver disease and chronic obstructive pulmonary disease),

e) the Nelson-Aalen hazard and the event status for each endpoint analysed in the data<sup>2</sup>.

Non-normally distributed variables were log-transformed for imputation and exponentiated back to their original scale for analysis. Five multiply imputed datasets were generated, and Cox models fitted to each dataset. Coefficients were combined using Rubin's rules.

We checked whether the imputations were plausible by comparing plots of the distribution of observed and imputed values of all variables. We checked whether the exclusion of patients with no blood pressure measurements (within two years of the baseline) biased the reported associations with cardiovascular diseases by comparing hazard ratios estimated based on imputed data (Figure S22).

#### Estimation of lifetime risks and years of life-lost

We estimated lifetime risks of each cardiovascular disease adjusted for the competing risk of other cardiovascular diseases and non-CVD mortality based on Cox models with age as the timescale. For a given disease q this involves a) estimating separate Cox models for events of disease q and for the competing events1,...,q-1,q+1,...,Q including the same predictor variables, b) multiplying the hazard contribution for disease q at a given age by the probability of being still at risk and not having experienced a competing event by that age, and c) computing the cumulative incidence (sum of hazards) between the baseline age (age at entry to study) and age 95 ('lifetime').

Thus, for individual *i* the lifetime risk of experiencing disease *q* from baseline age  $t_i$ to attained age $t_i$ +*T* in the presence of the competing risks is given by:

$$r_i(T) = \int_{t_i}^{t_i+T} h_{0q}(t) e^{\beta_q x_i} \exp\left[-\int_{t_i}^{t_i+t} \sum_{k=1}^Q h_{0k}(t) e^{\beta_k x_i} du\right] dt$$
[1]

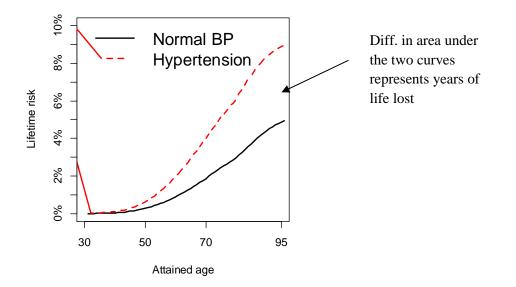
where  $h_{0q}(t)$  is the baseline hazard for disease q at age t

 $\beta_q$  is a vector of coefficients for cause q

 $x_i$  is the vector of covariates for individual *i* 

 $h_{0k}(t)e^{\beta_k x_i}$  is the hazard for disease k for individual i at age t given covariates  $x_i$ 

Expression [1] is estimated by replacing coefficients and baseline hazards by their estimates. Because the baseline hazard is estimated as a step function, the integrals are replaced by sums over event times.



Suppose the two curves in Figure S1 represent the lifetime risk of a 30-year old individual with normal BP (black line) or hypertension (red dashed line) at the baseline measurement. The years of life lost (YLL) are estimated from the difference in the area under the two curves, i.e.:

$$YLL = \int_{30}^{95} \{r_N(u) - r_H(u)\} du$$
 [2]

where  $r_N(u)$  and  $r_H(u)$  represent risk estimates up to age u (estimated by expression [1] and adjusted for other risk factors (baseline age, sex, diabetes, smoking status, total cholesterol, HDL cholesterol) assuming normal blood pressure or hypertension respectively, averaged over individuals in the data. We estimated {2} by applying the trapezium rule in intervals of u=0.5 years, from the baseline age to age 95.

#### **Reference List**

- 1 Rubin DB. Multiple Imputation for Nonresponse in Surveys. New York 1987.
- 2 White IR, Royston P. Imputing missing covariate values for the Cox model. *Stat Med* 2009;28:1982-1998.
- 3 Higgins JP, Thompson SG, Spiegelhalter DJ. A re-evaluation of random-effects meta-analysis. J R Stat Soc Ser A Stat Soc 2009;172:137-159.