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The epidemiology of cardiovascular disease in the UK 2014

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ABSTRACT

Cardiovascular disease (CVD) presents a significant burden to the UK. This review presents data from nationally representative datasets to provide up-to-date statistics on mortality, prevalence, treatment and costs. Data focus on CVD as a whole, coronary heart disease (International Classification of Diseases (ICD):I20–25) and cerebrovascular disease (ICD:I60–69); however, where available, other cardiovascular conditions are also presented. In 2012, CVD was the most common cause of death in the UK for women (28% of all female deaths), but not for men, where cancer is now the most common cause of death (32% of all male deaths). Mortality from CVD varies widely throughout the UK, with the highest age-standardised CVD death rates in Scotland (347/100 000) and the North of England (320/100 000 in the North West). Prevalence of coronary heart disease is also highest in the North of England (4.5% in the North East) and Scotland (4.3%). Overall, around three times as many men have had a myocardial infarction compared with women. Treatment for CVD is increasing over time, with prescriptions and operations for CVD having substantially increased over the last two decades. The National Health Service in England spent around £6.8 billion on CVD in 2012/2013, the majority of which came from spending on secondary care. Despite significant declines in mortality in the UK, CVD remains a considerable burden, both in terms of health and costs. Both primary and secondary prevention measures are necessary to reduce both the burden of CVD and inequalities in CVD mortality and prevalence.

INTRODUCTION

Cardiovascular disease (CVD) is the leading cause of death worldwide.[1] The 2013 Global Burden of Disease Study estimated that almost 30% of all deaths worldwide were caused by CVD. However, recent evidence from Europe suggests that in some countries cancer has overtaken CVD as the leading cause of death.[2] Over the last decade, survival from myocardial infarction (MI) has improved in England.[3] The last decade has also seen changes in the number of prescriptions prescribed to treat various CVD conditions and the types of surgeries to treat MIs.

This review is based on the *Cardiovascular Disease Statistics 2014* report.[4] This is the 19th edition of the report published by the British Heart Foundation. These reports aim to provide up-to-date statistics on CVD, coronary heart disease (CHD) and stroke in the UK. It is aimed at health professionals, medical researchers and others with an interest in CVD. In this review, we present selected data on CVD mortality, morbidity, treatment and costs in the UK, with additional data available in online supplementary files. Data in this review focus on CVD (International Classification of Diseases (ICD)10:I00–99), CHD (ICD10:I20–25) and stroke (ICD10:I60–69). Where available and appropriate, we have also included data on the major conditions within the WHO ICD10 subchapters for CVD.

METHODS

We use a number of data sources to provide information on the mortality, morbidity and treatment of CVD. We aim to provide UK data; when this was not possible, we have provided information separately for the countries of the UK. The three main considerations when selecting data sources were the representativeness of data, its quality and the year of collection.

Mortality data from 2012 were provided by the Office for National Statistics (ONS), the National Records of Scotland and the Northern Ireland Statistics and Research Agency. We calculated age-standardised death rates using the 2013 European Standard Population. Mortality data are routinely collected in the UK, and it is a legal requirement to report a death that occurs in England, Wales, Scotland or Northern Ireland. Consequently, mortality data are representative of the entire UK population, are published annually and are considered high-quality data.

We obtained prevalence data from the Clinical Practice Research Datalink (CPRD) GOLD database, which is the world's largest validated computerised database of anonymised records for primary care.[5] The CPRD GOLD database collates records from a widely used General Practice software system and covers approximately 8.8% of the UK population. CPRD data are regarded to be high quality and are updated on a monthly basis.[5] Prevalence is calculated by dividing the number of cases by the patient population. We also used data from the Quality and Outcomes Framework (QOF) to estimate prevalence by Government Office Region and country. This framework became part of general practice contracts in 2004 and rewards general practitioners for keeping up-to-date records of the number of patients within their practices who are suffering from certain conditions. Prevalence data from QOF is updated annually and uses the list size of a general practice as the denominator. This means that changes in the registered population may affect the representativeness of the prevalence estimates between years.

Data on inpatient episodes due to CVD, CHD, stroke and other CVD conditions are from Hospital Episode Statistics (HES), published by national agencies of England, Wales, Scotland and Northern Ireland. An episode is defined as the

main diagnosis attributed to a patient when they are discharged from hospital. This data may include multiple hospital episodes for one person over the course of the year and does not include people who die before reaching hospital. HES data are updated monthly and collected from all people who are seen by a consultant in hospital; therefore, they are representative of the hospitalised population. There have been concerns over the quality of HES data due to lack of clinician engagement in the process of reporting and coding;[6] however, this is currently the best nationally representative source of inpatient data.

Data on revascularisations are published by the British Cardiovascular Intervention Society (BCIS) and are updated annually. We report on trends in percutaneous coronary interventions (PCIs) and coronary artery bypass grafts (CABGs). The BCIS conducts an annual audit of revascularisation procedures in the UK and >97% of PCI cases are included in the audit.[7]

Prescription data come from Prescription Costs Analysis (PCA) reports published by the ONS, the Welsh Government, the Information Services Division in Scotland and the Business Services Organisation in Belfast. PCA data represent all prescriptions prescribed in the community and are updated annually. The data are classified using the therapeutic groups of the British National Formulary. Data on the percentage of individuals taking certain prescriptions are collected by the Health Survey for England (HSE). The health surveys of Wales, Scotland and Northern Ireland do not collect this data. The HSE is a cross-sectional annual survey that aims to be representative of people living in private households in England; it uses a stratified random probability sample of private households to achieve this. Information on prescriptions is collected during a nurse visit, which is preceded by a general interview. In the 2013 survey, the response rate for all sampled households was 58% for the general interview and 40% for the nurse visit.

Cost data for England come from programme budgeting data, an analysis of commissioning expenditure by healthcare condition (eg, circulatory disease) and care setting (eg, primary, secondary, community). Estimates of expenditure are calculated using the price paid for specific activities and services purchased from healthcare providers for each region. Regions follow standard guidance, procedures and mappings when calculating

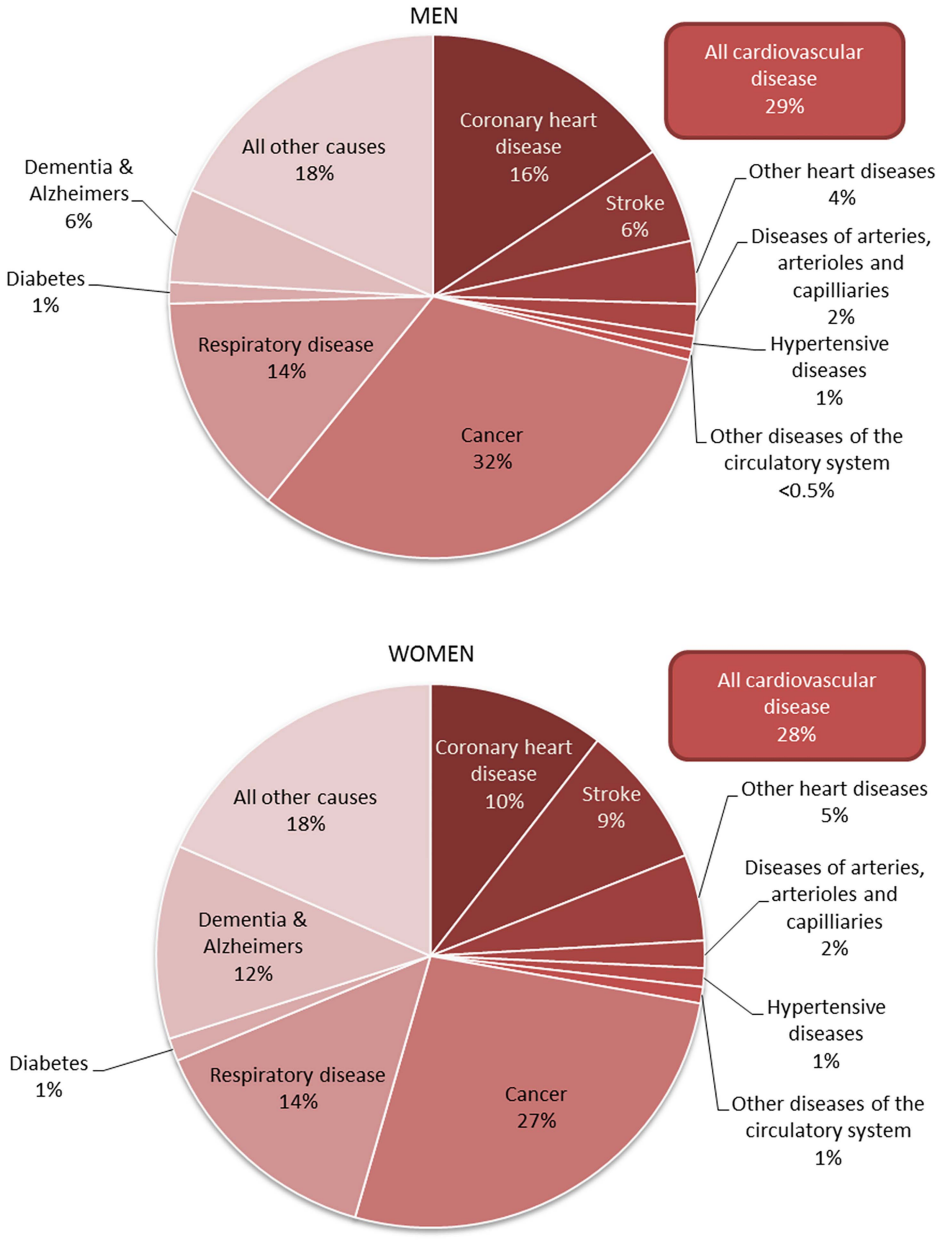

Figure 1 Deaths by cause and sex, UK. This figure compiles data from the four countries of the UK. In Northern Ireland, the data for lung cancer only includes International Classification of Diseases-10 code C34. Adapted from England and Wales, Office for National Statistics (2014) Deaths registered by cause, sex and age. http://www.statistics.gov.uk (accessed January 2014); Scotland, National Records of Scotland (2014) Deaths, by sex, age and cause. http://www.gro-scotland.gov.uk (accessed January 2014); Northern Ireland, Statistics and Research Agency (2014) Registrar General Annual Report. NISRA: Belfast.

programme budgeting data. Around 80% of planned National Health Service (NHS) funding in England is allocated to Primary Care Trusts (this will now change to Clinical Commissioning Groups), who are then free to commission local health services to meet local needs.[8]

MORTALITY

In 2012, for the first time since the middle of the 20th century,[9] CVD went from being the main cause of death to the second cause of death in the UK. Twenty-eight per cent of deaths were caused by CVD in 2012, and 29% were caused by cancer. When analysed by sex, however, CVD was still a larger cause of death than cancer for women, but this was no longer the case for men (figure 1).

The main causes of CVD death are CHD and stroke. In 2012, 46% of CVD deaths were from CHD and 26% were from stroke. Overall, CHD was responsible for 16% of all male deaths and 10% of all female deaths, a total of just under 73 500 deaths. Around 41 000 deaths were from stroke, making up 6% and 9% of total deaths in men and women, respectively (figure 1).

In this review, we treat deaths before the age of 75 as premature. More than one quarter of premature deaths in men and around 18% of premature deaths in women were from CVD in 2012 (see online supplementary tables). In total that year, there were nearly 42 000 premature deaths from CVD in the UK. CHD by itself was the most common single cause of premature death in the UK in men, responsible for about 15% of premature male deaths in 2012. In women, CHD caused around 8% of premature deaths.

REGIONAL VARIATIONS IN MORTALITY

Age-standardised CVD mortality rates by local authority showed a clear trend for higher CVD rates in Scotland and the North of England and lower CVD rates in the South of England. Glasgow City had the highest CVD mortality rate for both premature mortality (144/100 000 population) and mortality at all ages (400/100 000 population). Half of all the local authorities with the 10 highest CVD mortality rates in the UK were in Scotland, four were in the North of England and one was in Wales (table 1). Age-standardised CVD mortality rates were highest in Scotland in 2012 at 347/100 000 population and lowest in the South West of England at 269/100 000 population (see online supplementary data).

Table 1 Rankings for 10 local authorities with highest cardiovascular disease mortality rates and 10 local authorities with the lowest cardiovascular disease mortality rates, UK 2010/2012

All ages				Under 75			
Code	Local authority	Region	Age-standardised death rate per 100 000	Code	Local authority	Region	Age-standardised death rate per 100 000
10 highest death rates				*10 highest death rates*			
00QS	Glasgow City	Scotland	399.89	00QS	Glasgow City	Scotland	143.54
30UG	Hyndburn	North West	395.23	00BN	Manchester	North West	133.92
00PL	Blaenau Gwent	Wales	395.11	00EY	Blackpool	North West	125.27
00BT	Tameside	North West	393.82	00QJ	Dundee City	Scotland	123.21
00EX	Blackburn with Darwen	North West	393.34	00QU	Inverclyde	Scotland	122.85
00RC	Renfrewshire	Scotland	389.62	00QZ	North Lanarkshire	Scotland	122.62
00RJ	Eilean Siar	Scotland	386.95	00RJ	Eilean Siar	Scotland	119.02
36UG	Scarborough	Yorkshire and The Humber	385.37	00PL	Blaenau Gwent	Wales	118.24
00QZ	North Lanarkshire	Scotland	384.95	00QG	West Dunbartonshire	Scotland	116.25
00QG	West Dunbartonshire	Scotland	381.43	00EX	Blackburn with Darwen	North West	114.31
Median death rates				*Median death rates*			
37UC	Bassetlaw	East Midlands	290.71	47UD	Redditch	West Midlands	74.56
26UH	Stevenage	East of England	290.47	95X	Ards	Northern Ireland	74.32
10 lowest death rates				*10 lowest death rates*			
19UG	Purbeck	South West	231.26	19UD	East Dorset	South West	47.92
43UL	Waverley	South East	230.93	43UD	Guildford	South East	47.85
19UD	East Dorset	South West	224.22	45UF	Horsham	South East	47.83
12UG	South Cambridgeshire	East of England	222.48	11UC	Chiltern	South East	47.74
24UP	Winchester	South East	221.58	43UL	Waverley	South East	47.07
00BD	Richmond upon Thames	London	215.49	43UE	Mole Valley	South East	44.81
24UG	Hart	South East	213.12	12UG	South Cambridgeshire	East of England	44.54
00AW	Kensington and Chelsea	London	197.31	24UP	Winchester	South East	43.41
00AA	City of London	London	177.63	24UG	Hart	South East	34.94
00HF	Isles of Scilly	South West	157.34	00HF	Isles of Scilly	South West	0.00

England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: rates calculated in partnership with the National Records of Scotland; Northern Ireland: rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 2 Prevalence of cardiovascular conditions, UK 2013

	MI (%)	Angina (%)	Heart failure (%)	Atrial fibrillation (%)	Stroke (%)
Men					
0–44	0.06	0.05	0.05	0.09	0.11
45–54	1.14	0.92	0.33	0.76	0.89
55–64	3.55	3.60	1.12	2.28	2.69
65–74	7.05	8.83	2.92	6.20	6.40
75+	12.08	16.96	7.84	15.38	14.89
All ages	2.46	3.05	1.22	2.47	2.53
Women					
0–44	0.02	0.03	0.04	0.03	0.11
45–54	0.29	0.50	0.15	0.26	0.79
55–64	0.89	1.74	0.45	0.91	1.96
65–74	2.06	4.66	1.32	3.28	4.39
75+	5.50	11.15	5.89	11.71	12.43
All ages	0.87	1.79	0.76	1.56	1.99
Number of cases in sample					
Men	47 449	57 927	22 954	46 597	47 888
Women	19 747	41 840	18 201	36 967	46 549

Estimates are based on records from a sample of general practices in each of the constituent countries of the UK; estimates for all ages are age-standardised to the European Standard Population.
This table is based on data from the Clinical Practice Research Datalink GOLD database, 2014. Copyright and database rights over the data belong to the Crown. The interpretation and conclusions contained in this review are those of the authors alone.
Adapted from Clinical Practice Research Datalink (CPRD), personal communication, 2014.
MI, myocardial infarction.

PREVALENCE

We obtained prevalence data by age through the CPRD GOLD database. Obtaining data from this database is prolonged and expensive; therefore, it was not possible to provide data for conditions within other ICD10 subchapters. Throughout the UK, prevalence of MI in men was almost three times greater than for women in 2013. Applying country-specific and age-specific population estimates, obtained from the national statistics agencies, to prevalence data from the CPRD GOLD database suggests that >915 000 people in the UK have suffered an MI and >1.3 million are living with angina. Consequently, if we combine estimates for MI and angina, we find that almost 2.3 million people in the UK are living with some form of CHD. Applying prevalence figures for heart failure to population estimates suggests that there are >308 000 men and 250 000 women in the UK living with heart failure. Using the same method, we estimate that 1.1 million people are living with atrial fibrillation in the UK (table 2).

REGIONAL VARIATIONS IN PREVALENCE

Estimates of the number of people in the UK who have CVD, derived from the CPRD GOLD database, are broadly supported by results from the QOF. QOF data suggest that in 2012/2013 there were around 2.3 million people suffering from CHD, 1.2 million people suffering from stroke, around 1 million from atrial fibrillation and just over 480 000 from heart failure. QOF only measures certain cardiovascular conditions; therefore, prevalence data are not available for all ICD10 chapters.

Comparing between regions in England, those in the North had a higher prevalence for CVD than the those in the South, with the highest prevalence reported in the North East for all diseases described here (4.5% for CHD, 2.1% for stroke). London had the lowest prevalence for all (2.1% for CHD, 1.0% for stroke). For CHD, the North East, North West and Yorkshire and The Humber all had a prevalence of 4% or higher. Among UK countries, England had the lowest prevalence for all cardiovascular conditions (3.4% for CHD, 1.7% for stroke) except hypertension (13.6%), for which Northern Ireland was lowest (12.9%). Scotland had the highest prevalence for CHD (4.3%), stroke (2.1%) and peripheral arterial disease (0.9%), while Wales had the highest for hypertension (15.5%), heart failure (0.9%) and atrial fibrillation (1.8%). It should be noted that these rates have not been adjusted to account for differences in the age structure of populations (table 3).

Table 3 Prevalence of selected long-term conditions by Government Office Region for England and by country England, Scotland, Wales, Northern Ireland and UK 2012/2013

Country/Government Office Region (GOR)	Patient list	Coronary Heart Disease Register (%)	Stroke or Transient Ischaemic Attacks Register (%)	Hypertension Register (%)	Heart Failure Register (%)	Atrial Fibrillation Register (%)	Peripheral Arterial Disease Register (%)
East Midlands	4 735 883	3.6	1.8	14.3	0.8	1.6	0.6
East of England	6 113 986	3.3	1.7	14.1	0.7	1.6	0.6
London	9 056 401	2.1	1.0	11.0	0.5	0.9	0.4
North East	2 696 547	4.5	2.1	15.5	0.9	1.7	1.0
North West	7 397 503	4.0	1.9	14.2	0.8	1.6	0.9
South East	9 074 471	3.0	1.7	13.4	0.6	1.6	0.6
South West	5 536 574	3.5	2.0	14.5	0.8	1.9	0.7
West Midlands	5 880 643	3.4	1.8	14.7	0.8	1.5	0.7
Yorkshire and The Humber	5 524 195	4.0	1.9	14.0	0.8	1.6	0.8
England	57 925 541	3.4	1.7	13.6	0.7	1.5	0.7
Scotland	5 552 133	4.3	2.1	13.7	0.8	1.5	0.9
Wales	3 180 153	3.9	2.0	15.5	0.9	1.8	0.7
Northern Ireland	1 909 338	3.9	1.8	12.9	0.8	1.5	0.7
UK	66 657 827	3.5	1.7	13.7	0.7	1.5	0.7

England—Copyright Health and Social Care Information Centre 2014.
Adapted from England—Information Centre QOF achievement data 2012/2013; Wales—StatsWales. QOF 2012/2013 achievement data; Scotland—ISD Scotland. QOF achievement data 2013/2013; Northern Ireland—Department of Health, Social Services and Public Safety. QOF achievement data 2012/2013.
QOF, Quality and Outcomes Framework.

Table 4 Inpatient episodes by main diagnosis in National Health Service Hospitals, by sex, UK 2012/2013

	England		Scotland		Wales		Northern Ireland		UK	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
All diagnoses	7 888 761	9 824 399	685 043	766 766	423 756	535 894	302 738	290 630	9 276 644	11 391 970
All diseases of the circulatory system (I00–I99)	777 888	596 206	84 849	65 675	49 192	38 084	24 198	19 013	936 127	718 978
Rheumatic heart disease (I00–I09)	4373	5418	369	642	292	400	75	174	5109	6634
Hypertensive diseases (I10–I15)	7444	8541	876	873	652	669	492	554	9464	10 637
Ischaemic heart disease (I20–I25)	265 102	138 987	31 576	16 645	17 112	9214	9986	4699	323 776	169 545
Pulmonary heart disease and diseases of pulmonary circulation (I26–I28)	24 815	29 394	2398	2872	1559	1569	539	714	29 311	34 549
Other forms of heart disease (I30–I52)	217 761	178 427	21 865	18 088	14 603	11 811	7016	6222	261 245	214 548
Cerebrovascular disease (I60–I69)	96 502	99 579	11 776	12 297	6134	6878	1448	1507	115 860	120 261
Diseases of arteries, arterioles and capillaries (I70–I79)	54 233	32 180	6323	4713	2959	1892	1537	1363	65 052	40 148
Diseases of veins and lymphatic system nec. (I80–I89)	87 905	85 450	8255	8238	4928	4818	2783	3267	103 871	101 773
Other and unspecified disorders of the circulatory system (I95–I99)	19 753	18 230	1411	1307	953	833	459	376	22 576	20 746

Finished consultant episodes; ordinary admissions and day cases combined. Pregnancy cases not included. International Classification of Diseases-10 codes in parentheses. Due to rounding, figures for Northern Ireland do not sum up exactly to I00–I99.
Adapted from Department of Health (2013). Hospital Episode Statistics 2012/2013. http://www.hesonline.nhs.uk (accessed January 2014); Information Services Division Scotland (2015) Main diagnosis discharges from hospital 2012/2013. Personal correspondence; NHS Wales Informatics Service (2013). The Patient Episode Database for Wales—2012/2013. http://www.infoandstats.wales.nhs.uk (accessed January 2014); Hospital Information Branch (2012). Northern Ireland Episode Based Acute Inpatient and Day Case Activity Data (2012/2013) http://www.dhsspsni.gov.uk (accessed January 2014). Personal correspondence.

INPATIENT EPISODES

In the UK, there were >1.6 million episodes related to CVD in NHS hospitals, accounting for 10.1% of all inpatient episodes among men and 6.3% among women. The proportion of inpatient episodes attributed to CHD was almost twice as high among men as among women, accounting for 3.5% of all inpatient episodes in men and 1.5% in women in the UK. Stroke accounted for around 1.1% of inpatient episodes in women and 1.2% in men in the UK. As a proportion of all conditions, stroke accounts for about 1.1% of all hospital episodes in the UK (table 4).

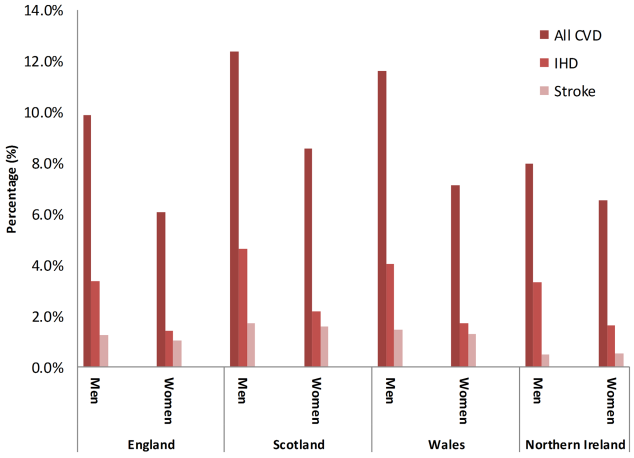

Figure 2 Percentage of all inpatient episodes for selected cardiovascular conditions, by sex and country of the UK, 2012/2013. Adapted from Department of Health (2013). Hospital Episode Statistics 2012/2013. http://www.hesonline.nhs.uk (accessed January 2014); Information Services Division Scotland (2015) Main diagnosis discharges from hospital 2012/2013. Personal correspondence; NHS Wales Informatics Service (2013). The Patient Episode Database for Wales—2012/2013. http://www.infoandstats.wales.nhs.uk (accessed January 2014); Hospital Information Branch (2012). Northern Ireland Episode Based Acute Inpatient and Day Case Activity Data (2012/2013) http://www.dhsspsni.gov.uk (accessed January 2014). Personal correspondence. CVD, cardiovascular disease; IHD.

The highest proportion of inpatient episodes for all CVD were in Scotland (12.4% of men and 8.6% of women). The lowest proportion of CVD inpatient episodes were in Northern Ireland for men (8.0%) and in England for women (6.1%) (figure 2). Northern Ireland had the lowest proportion of inpatient episodes for stroke (0.5% for both men and women), and Scotland had the highest proportion (1.7% for men and 1.6% for women).

PRESCRIPTIONS

Prescription data is not available for the UK as a whole; therefore, we present England data here (table 5) and data for the other UK countries in online supplementary tables. The rapid increase in the number of prescriptions for the treatment and prevention of CVD began in the late 1980s. In 2013, >300 million prescriptions were dispensed for CVD in England, more than six times as many as issued in 1981, and an increase of 2.2% from the number of prescriptions in 2012. Since 1990, the number of prescriptions dispensed for antiplatelet drugs has increased steadily; there are now >38 million prescriptions for antiplatelet drugs in England every year. The increase in the number of prescriptions of lipid-lowering drugs was slow until the late 1990s, but since then has been very rapid, with the number of prescriptions for lipid-lowering drugs now more than six times higher than in 2000. HSE data show that 16% of men and 12% of women report being prescribed lipid-lowering medicines. Also, 14% of men and 15% of women reported being prescribed antihypertensives specifically for hypertension (figure 3).

OPERATIONS

The total number of operations carried out to treat CHD is increasing in the UK. The number of PCIs carried out in the UK in 2012 was more than two times higher than a decade earlier; >90 000 procedures were carried out in 2012 in the UK. The number of CABGs reached a peak in the late 1990s/early 2000s. CABGs have become less common due to the more widespread use of less-invasive procedures such as PCIs. Just under 17 000 CABGs were carried out in the UK in 2012 (figure 4) and >6000 carotid endarterectomies in 2011/2012 (see online supplementary tables).

Table 5 Prescriptions used in the prevention and treatment of cardiovascular disease, England 1981–2013

Prescriptions	1981	1991	2001	2006	2007	2008	2009	2010	2011	2012	2013
Digoxin and other positive inotropic drugs (2.1)	4243	3822	4031	4126	4141	4149	4119	4088	4006	3900	3770
Diuretics (2.2)	20 678	22 195	30 203	37 582	37 355	37 536	37 511	37 687	37 563	37 258	36 650
Antiarrhythmic drugs (2.3)	232	532	1292	1265	1247	1226	1188	1174	1156	1129	1107
Beta-adrenoreceptor blocking drugs (2.4)	9827	14 282	20 439	27 378	26 810	27 634	28 529	29 686	30 924	32 355	33 597
Antihypertensive and heart failure drugs (2.5)	4912	6431	25 047	47 742	53 634	57 823	60 838	63 571	65 449	67 184	68 652
Nitrates, calcium blockers and other antianginal drugs (2.6)	5156	16 718	26 814	34 707	37 214	39 100	40 575	42 043	43 086	44 675	45 868
Anticoagulants and protamine (2.8)	629	1356	4609	6790	7309	7991	8546	9157	9773	10 723	11 906
Antiplatelet drugs (2.9)	281	3619	18 891	32 779	35 382	38 124	39 107	38 182	38 351	38 603	38 661
Antifibrinolytic drugs and haemostatics (2.11)			282	327	352	358	363	373	392	396	393
Lipid-lowering drugs (2.12)	295	1066	13 523	42 098	47 412	52 190	56 452	59 550	61 649	64 399	66 795
All prescriptions for disease of the circulatory system	46 252	70 022	145 131	234 793	250 855	266 130	277 244	285 530	292 370	300 647	307 424

The data up to 1990 are not consistent with data from 1991 onwards. Figures up to 1990 are based on fees and on a sample of 1 in 200 prescriptions dispensed by community pharmacists and appliance contractors only. Figures from 1991 are based on items and cover all prescriptions dispensed by community pharmacists, appliance contractors, dispensing doctors and prescriptions submitted by prescribing doctors for items personally administered. British National Formulary codes in parentheses.
Adapted from Office for National Statistics (2014). Prescription cost analysis 2013. Health and Social Care Information Centre, and previous editions.

COSTS OF CVD

Cost data are not available for the UK as a whole; therefore, we present England data here. More than £6.8 billion was spent on treating CVD within the NHS in England in 2012/2013. The highest expenditure was on secondary care with £4373 million spent on secondary care for CVD in England. Within secondary care, emergency admissions had the greatest expenditure. Within primary care, the second highest setting for expenditure, the majority of costs were due to prescribing (£1387.5 million). Economic cost data for Wales, Scotland and Northern Ireland come from different sources (see online supplementary tables) and so may not be comparable. In 2012/2013 in Wales, a total of £442.3 million was spent on CVD, in Northern Ireland, £393 million was spent and in Scotland it is estimated that >£750 million was spent on treatment of CVD (figure 5).

SUMMARY AND DISCUSSION

Although CVD is no longer the biggest cause of death overall in the UK, it is still the largest cause of death for women. Overall figures also mask substantial regional inequalities in mortality from CVD, with the highest CVD death rates occurring in Scotland and the North of England. Improved survival also means that there is a high prevalence of CVD conditions such as MI and angina; again, prevalence is higher in the North of England. There are also a large number of hospitalisations and operations resulting from CVD, which are in conjunction with an increase in the number of prescriptions dispensed for CVD conditions.

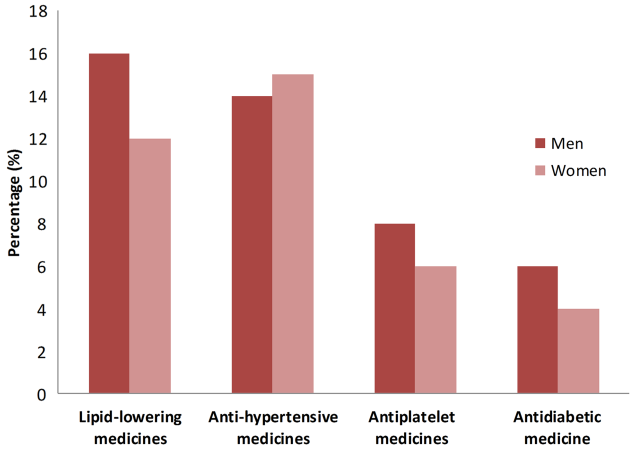

Figure 3 Percentage of individuals aged 16 and over taking cardiovascular-related prescriptions, by sex, England 2012–2013. Medicines are included in the 'Anti-hypertensive medicines' category only if they were specifically prescribed for hypertension. Adapted from Joint Health Surveys Unit. Health Survey for England 2013. London: Health and Social Care Information Centre 2014.

Cancer has overtaken CVD to become the main cause of death in a number of European countries, for example, in Belgium, Denmark and France,[2] indicating that the UK is one of many countries undergoing this change. The decrease in mortality from CVD in the UK is partially due to improved case fatality rates after MIs over the last decade and partially due to a decline in incidence.[3] Although the data we present here shows large increases in treatment over the past decade, Unal *et al*[10] estimated that between 1981 and 2000, 58% of the decline in deaths from CHD was due to improvements in risk factors, such as smoking, and 48% was due to treatments.

Accurate incidence data is difficult to obtain, but conditions such as MI can be measured using HES or general practice data linked to mortality, or through disease registries such as the Myocardial Ischaemia National Audit Project. These sources provide information on both new cases presenting to the health service and on those who die before reaching hospital. We have not presented incidence data in this review, but there is published evidence that the incidence of some CVDs is declining over time. Measured using HES linked to mortality, the incidence of MI has declined in many developed countries, including England, since the 1970s.[3 11 12] Measured using general practice data, between 1999 and 2008, the incidence of stroke in the UK dropped by 30%.[13] However, it has been demonstrated that only using one source of incidence data can underestimate MI by 25–50%.[14]

Despite the substantial shift towards PCIs in the past years, CABG procedures remain as one of the main surgical treatments for certain more complex conditions.[15] For example, it is recommended that CABGs remain as the standard revascularisation care for patients with complex coronary lesions or severe left main coronary disease. Where patients are eligible for both CABG and PCI, the National Institute for Health and Care Excellence reports that although CABG is still effective it is not cost-effective when compared with PCI and so the latter procedure should be performed.[16]

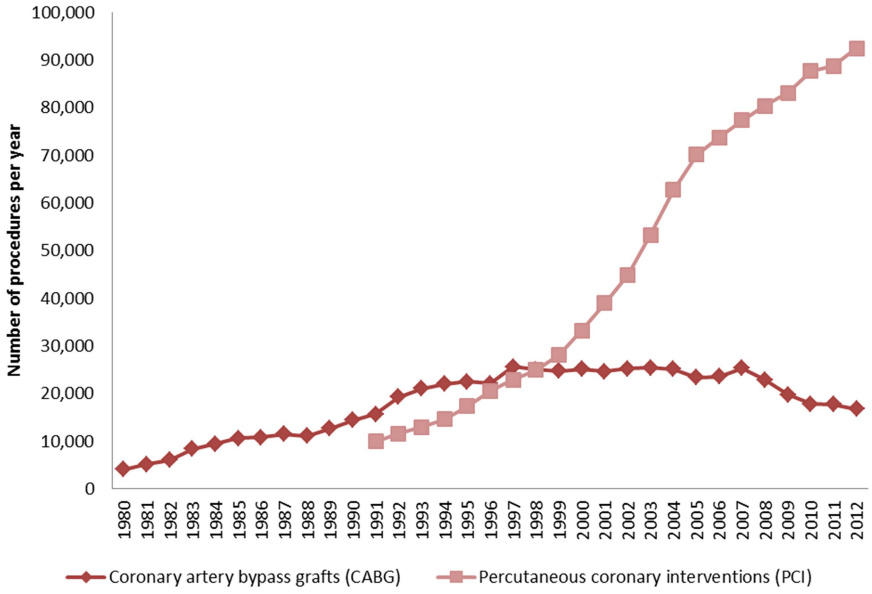

Figure 4 Number of coronary artery bypass operations and percutaneous coronary interventions per year, UK 1980 to 2012. Operations performed in NHS hospitals and selected private hospitals are included. Adapted from British Cardiovascular Intervention Society (2013). BCIS Audit returns. Personal communication; The Society for Cardiothoracic Surgery in Great Britain and Ireland (2014). http://bluebook.scts.org/#ActivityRates (accessed in March 2014).

While we aimed to use high-quality nationally representative data sources, all have their limitations. Mortality and HES cover the entire population; however, data from the CPRD database came from about 9% of the population. It is possible therefore that CPRD data are not nationally representative; however, the fact that QOF prevalence data (which covers virtually all general practices) supports CPRD prevalence estimates lends some credibility to the representativeness of the CPRD database.

CONCLUSION

CVD remains a substantial burden to the UK, both in terms of health and economic costs. Despite significant declines in incidence and mortality, CVD is still the biggest cause of mortality in women. The improvements in survival mean that there is now a high prevalence of people living with CVD, and consequently high numbers of prescriptions for secondary prevention. The most recent HSE reports that lipid-lowering drugs are the most prescribed medicine for men, and the second most prescribed for women.[17] This review highlights the stark regional inequalities in the mortality and prevalence of CVD. Prevention measures to improve diet, physical activity, binge drinking and tobacco use are necessary to tackle both these regional inequalities and premature mortality from CVD.

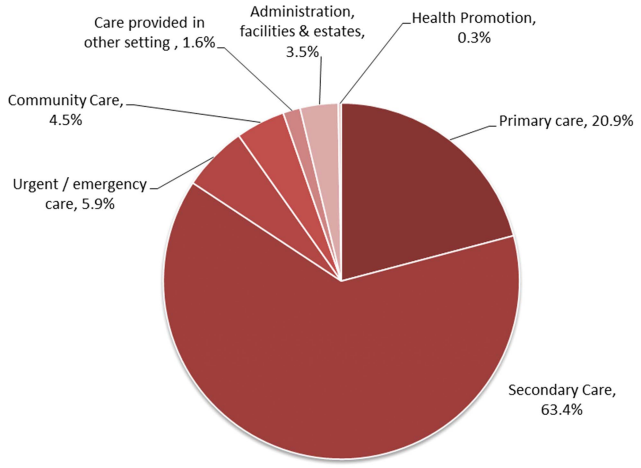

Figure 5 Percentage of National Health Service (NHS) expenditure on cardiovascular disease by care setting, England 2012/2013. Expenditure data included are taken from the 2012–2013 programme budgeting returns. Programme budgeting returns are based on a subset of primary care trust (PCT) accounts data and represent a subset of overall NHS expenditure data. Estimates of expenditure are calculated using price paid for specific activities and services purchased from healthcare providers. PCTs follow standard guidance, procedures and mappings when calculating programme budgeting data. Adapted from NHS England—Analytical services—Programme Budgeting Team (2014) 2012/2013 Programme Budgeting Benchmarking Tool. http://www.england.nhs.uk/resources/resources-for-ccgs/prog-budgeting/ (accessed February 2014).

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HEART

Cancer overtakes cardiovascular disease as UK's No 1 killer—but only among men

Cardiovascular disease still primary cause of death among women and kills more young women than breast cancer

Cancer has overtaken cardiovascular disease, which includes heart disease and stroke, as the UK's No 1 killer—but only among men, reveals research published online in the journal ***Heart.***

Cardiovascular disease is still the most common cause of death among women, and kills more young women than breast cancer, the figures show.

The researchers used the latest nationally available data (2012-13) for each of the four UK countries and the *Cardiovascular Disease Statistics 2014 report* compiled for the British Heart Foundation (BHF) to quantify the prevalence of cardiovascular disease, and find out how it's treated, how much it costs, and how many deaths it causes.

Cardiovascular disease includes coronary heart disease, stroke, high blood pressure, circulatory system disease, and other vascular/arterial disease.

The researchers analysed entries to the Clinical Practice Research Datalink GOLD database, the world's largest repository of anonymised records for primary care, plus information from the family doctor (GP) quality improvement scheme known as QOF, and figures on episodes of inpatient hospital care.

The analysis indicated that just short of 2.3 million people were living with some form of coronary heart disease in 2012. Around half a million were living with heart failure and a further 1.1 million were living with abnormal heart rhythm (atrial fibrillation).

England had the lowest prevalence of all cardiovascular conditions out of the four UK countries. But there were regional variations, with higher rates of cardiovascular disease in the North of England than in the South of the country.

Scotland had the highest prevalence of coronary heart disease, stroke, and peripheral vascular disease, while Wales had the highest prevalence of high blood pressure, heart failure, and atrial fibrillation.

For the first time since the middle of the 20th century, cancer overtook cardiovascular disease as the primary cause of death in 2012. The proportion of deaths attributable to cancer was 29% while cardiovascular disease accounted for 28%.

But this was only true of men; cardiovascular disease still killed more women than cancer.

Almost one in three deaths (32%) in men were caused by cancer compared with 29% for cardiovascular disease. The equivalent figures were 27% and 28%, respectively, for women.

Cardiovascular disease accounted for a total of nearly 42,000 premature deaths (before the age of 75) in 2012, accounting for more than one in four premature deaths in men and around one in five (18%) in women. But it still killed more young women than did breast cancer.

Once again, there were wide regional variations in death rates. There were higher rates in Scotland (347/100,000 of the population) and the North of England (320/100,000), and lower rates in the South of England.

The City of Glasgow topped the league table for death rates from cardiovascular disease for all ages, including premature deaths.

The number of surgical procedures and drugs prescribed to treat and prevent cardiovascular disease has risen substantially over the past two decades, and in 2012-13 the NHS spent just under £7 billion in England alone on cardiovascular disease, the largest chunk of which was spent on hospital care.

The equivalent cost in Wales was £442.3 million, £393 million in Northern Ireland, and more than £750 million in Scotland.

"Cardiovascular disease remains a substantial burden to the UK, both in terms of health and economic costs," write the researchers, highlighting the "stark regional inequalities in the mortality and prevalence of [cardiovascular disease]."

In a linked editorial, Dr Adam Timmis, of the NIHR Cardiovascular Biomedical Research Unit at Barts Health, London, describes the more than 40% drop in cardiovascular disease death rates since 1960 as “among the greatest public health triumphs in the past 50 years.” But the continuing North-South divide is a “stain on the UK’s public health record,” he writes.

The [BHF] report provides a timely reminder that in young women too [cardiovascular disease] kills more women than breast cancer. Most of these deaths in young women are caused by myocardial infarction [heart attack] which is largely preventable through modification of risk factors,” he points out.

“And if the national effort put into the detection of breast cancer could be matched in protecting young women against myocardial infarction many more lives would probably be saved,” he insists.

The epidemiology of cardiovascular disease in the UK 2014 - Supplementary files

Table 1 Deaths by cause, sex and age, United Kingdom 2012.

		All ages	Under 35	35-44	45-54	55-64	65-74	75-84	85+
All causes	MEN	273,347	7,452	6,279	13,625	28,214	54,073	86,332	77,372
	WOMEN	295,677	4,235	3,726	9,449	19,534	38,960	81,794	137,979
	Total	569,024	11,687	10,005	23,074	47,748	93,033	168,126	215,351
All diseases of the circulatory system (I00-I99)	MEN	79,050	476	1,163	3,603	7,631	15,224	26,349	24,604
	WOMEN	82,202	247	518	1,351	3,141	8,388	24,058	44,499
	Total	**161,252**	723	1,681	4,954	10,772	23,612	50,407	69,103
Chronic rheumatic heart diseases (I05-I09)	MEN	381	2	5	12	35	66	145	116
	WOMEN	850	4	6	17	41	118	324	340
	Total	**1,231**	6	11	29	76	184	469	456
Hypertensive diseases (I10-I15)	MEN	2,275	10	44	121	257	437	691	715
	WOMEN	3,267	4	14	50	135	351	832	1,881
	Total	**5,542**	14	58	171	392	788	1,523	2,596
Coronary heart disease (I20-I25)	MEN	42,819	119	596	2,250	5,033	9,256	14,129	11,436
	WOMEN	30,861	27	151	505	1,383	3,770	9,537	15,488
	Total	**73,680**	146	747	2,755	6,416	13,026	23,666	26,924
Other heart diseases (I26-I52)	MEN	10,614	221	236	489	778	1,516	3,162	4,212
	WOMEN	15,195	119	137	223	451	1,176	3,880	9,209

	Total	**25,809**	340	373	712	1,229	2,692	7,042	13,421
Stroke	MEN	16,196	80	174	477	934	2,438	5,774	6,319
(I60-I69)	WOMEN	25,202	56	131	394	824	2,073	7,100	14,624
	Total	**41,398**	136	305	871	1,758	4,511	12,874	20,943
Diseases of arteries,	MEN	5,367	19	47	129	345	1,160	2,075	1,592
arterioles and capillaries	WOMEN	4,790	11	18	48	134	582	1,713	2,284
(I70-I79)	**Total**	**10,157**	30	65	177	479	1,742	3,788	3,876
Diseases of veins, lymphatic	MEN	1,380	25	61	125	248	350	371	200
vessels and lymph nodes not	WOMEN	2,013	25	61	114	173	318	667	655
classified elsewhere (I80-I89)	**Total**	**3,393**	50	122	239	421	668	1,038	855
Cancer	MEN	87,061	654	1,045	4,026	12,195	23,739	29,070	16,332
(C00-D48)	WOMEN	78757	710	1,491	4,838	10,653	18,402	24,099	18,564
	Total	165818	1,364	2,536	8,864	22,848	42,141	53,169	34,896
Colo-rectal cancer	MEN	8,918	32	115	447	1,288	2,295	3,051	1,690
(C18-C21)	WOMEN	7,594	51	110	361	850	1,493	2,413	2,316
	Total	16,512	83	225	808	2,138	3,788	5,464	4,006
Lung cancer	MEN	19,333	13	129	781	3,100	6,238	6,392	2,680
(C33,C34)	WOMEN	16,086	17	108	698	2,520	4,762	5,251	2,730
	Total	35,419	30	237	1,479	5,620	11,000	11,643	5,410

Breast cancer	MEN	74	1	1	1	9	18	26	18
(C50)	WOMEN	11,662	79	494	1,427	1,938	2,317	2,790	2,617
	Total	11,736	80	495	1,428	1,947	2,335	2,816	2,635
Prostate cancer	MEN	10,846	0	2	74	604	2,093	4,287	3,786
(C61)	WOMEN	-	-	-	-	-	-	-	-
	Total	10,846	0	2	74	604	2,093	4,287	3,786
Other cancers	MEN	47,890	608	798	2,723	7,194	13,095	15,314	8,158
(C00-C17, C22-C32,	WOMEN	43,415	563	779	2,352	5,345	9,830	13,645	10,901
C35-C49, C51-D48)	**Total**	91,305	1,171	1,577	5,075	12,539	22,925	28,959	19,059
Respiratory disease	MEN	37,673	182	213	661	2,251	6,412	13,049	14,905
(J00-J99)	WOMEN	42,226	137	155	463	1,737	4,991	12,047	22,696
	Total	**79,899**	319	368	1,124	3,988	11,403	25,096	37,601
Diabetes	MEN	3,625	167	125	205	377	650	1,163	938
(E10-E14)	WOMEN	4,013	132	80	140	257	501	1,184	1,719
	Total	**7,638**	299	205	345	634	1,151	2,347	2,657
Dementia and Alzheimer's	MEN	15,804	0	1	26	153	1,063	5,616	8,945
(F01-03, G30)	WOMEN	34,082	1	2	26	183	1,106	8,100	24,664
	Total	49,886	1	3	52	336	2,169	13,716	33,609

All other causes	MEN	50,134	5,973	3,732	5,104	5,607	6,985	11,085	11,648
	WOMEN	54,397	3,008	1,480	2,631	3,563	5,572	12,306	25,837
	Total	**113,390**	8,981	5,212	7,747	9,290	13,096	26,135	42,929

Notes: ICD-10 codes in parentheses. This table complies data from the four countries of the UK. In Northern Ireland, the data for Lung Cancer only includes ICD-10 code C34.

Source: England and Wales, Office for National Statistics (2014) Deaths registered by cause, sex and age. www.statistics.gov.uk (accessed January 2014); Scotland, National Records of Scotland (2014) Deaths, by sex, age and cause. www.gro-scotland.gov.uk (accessed January 2014); Northern Ireland, Statistics and Research Agency (2014) Registrar General Annual Report. NISRA: Belfast.

Table 2 Deaths by cause, by sex and age, England, Wales, Scotland, Northern Ireland and United Kingdom 2012

		All ages					Under 75				
		England	**Wales**	**Scotland**	**Northern Ireland**	**United Kingdom**	**England**	**Wales**	**Scotland**	**Northern Ireland**	**United Kingdom**
All causes	MEN	224,460	15,172	26,015	7,094	273,347	87,986	6,132	11,938	3,140	109,643
	WOMEN	242,319	16,330	28,922	7,662	295,677	60,721	4,298	8,508	2,090	75,904
	Total	**466,779**	**31,502**	**54,937**	**14,756**	**569,024**	**148,707**	**10,430**	**20,446**	**5,230**	**85,547**
All diseases of the circulatory system (I00-I99)	MEN	64,659	,608	7,610	1,924	79,050	22,437	1,614	3,127	748	28,097
	WOMEN	67,000	4,688	8,279	2,077	82,202	10,821	807	1,610	320	13,645
	Total	**131,659**	**9,296**	**15,889**	**4,001**	**161,252**	**33,258**	**2,421**	**4,737**	**1,068**	**41,742**
Chronic rheumatic heart diseases (I05-I09)	MEN	329	19	26	4	381	97	9	10	3	120
	WOMEN	697	60	72	17	850	140	13	26	5	186
	Total	**1,026**	**79**	**98**	**21**	**1,231**	**237**	**22**	**36**	**8**	**306**
Hypertensive diseases (I10-I15)	MEN	1,895	126	207	38	2,275	692	53	101	16	869
	WOMEN	2,740	187	265	68	3,267	461	28	55	7	554
	Total	**4,635**	**313**	**472**	**106**	**5,542**	**1,153**	**81**	**156**	**23**	**1,423**
Coronary heart disease (I20-I25)	MEN	34,726	2,554	4,258	1,138	42,819	13,638	995	2,015	500	17,254
	WOMEN	24,904	1,776	3,283	837	30,861	4,509	388	738	163	5,836
	Total	**59,630**	**4,330**	**7,541**	**1,975**	**73,680**	**18,147**	**1,383**	**2,753**	**663**	**23,090**

Other heart diseases	MEN	8,851	602	903	237	10,614	2,641	175	330	83	3,240
(I26-I52)	WOMEN	12,624	861	1,316	366	15,195	1,729	106	223	36	2,106
	Total	**21,475**	**1,463**	**2,219**	**603**	**25,809**	**4,370**	**281**	**553**	**119**	**5,346**
Stroke	MEN	13,145	929	1,686	394	16,196	3,248	261	463	106	4,103
(I60-I69)	WOMEN	20,312	1,381	2,789	683	25,202	2,751	189	433	81	3,478
	Total	**33,457**	**2,310**	**4,475**	**1,077**	**41,398**	**5,999**	**450**	**896**	**187**	**7,581**
Diseases of arteries,	MEN	4,480	308	457	98	5,367	1,419	85	155	27	1,700
arterioles and capillaries	WOMEN	3,908	304	471	89	4,790	634	44	91	16	793
(I70-I79)	**Total**	**8,388**	**612**	**928**	**187**	**10,157**	**2,053**	**129**	**246**	**43**	**2,493**
Diseases of veins, lymphatic	MEN	1,217	70	71	15	1,380	701	36	52	13	809
vessels and lymph nodes*	WOMEN	1,794	119	80	17	2,013	596	39	44	12	691
(I80-I89)	**Total**	**3,011**	**189**	**151**	**32**	**3,393**	**1,297**	**75**	**96**	**25**	**1,500**
All other cardiovascular	MEN	16	0	2	0	18	2	0	1	0	2
conditions (I95-I99, I00-I04, I16-I19, I53-I59,	WOMEN	21	0	3	0	24	0	0	0	0	1
I90-I94)	**Total**	**37**	**0**	**5**	**0**	**42**	**2**	**0**	**1**	**0**	**3**
Cancer	MEN	71,892	4,637	8,134	2,232	87,061	33,954	2,262	4,161	1,174	41,659
(C00-D48)	WOMEN	64,275	4,275	8,029	2,028	78757	29,248	1,983	3,790	972	36,094
	Total	**136,167**	**8,912**	**16,163**	**4,260**	**165818**	**63,202**	**4,245**	**7,951**	**2,146**	**77,753**

Colo-rectal cancer	MEN	7,297	534	844	233	8,918	3,387	267	398	122	4,177
(C18-C21)	WOMEN	6,190	399	804	190	7,594	2,295	159	328	76	2,865
	Total	**13,487**	**933**	**1,648**	**423**	**16,512**	**5,682**	**426**	**726**	**198**	**7,042**
Lung cancer	MEN	15,618	1,045	2,094	541	19,333	8,181	585	1,160	314	10,261
(C33,C34)	WOMEN	12,697	849	2,095	416	16,086	6,323	447	1,085	236	8,105
	Total	**28,315**	**1,894**	**4,189**	**957**	**35,419**	**14,504**	**1,032**	**2,245**	**550**	**18,366**
Breast cancer	MEN	58	3	8	4	74	23	0	5	1	30
(C50)	WOMEN	9,698	594	1,063	288	11,662	5,150	322	608	159	6,255
	Total	**9,756**	**597**	**1,071**	**292**	**11,736**	**5,173**	**322**	**613**	**160**	**6,285**
Prostate cancer	MEN	9,133	556	881	267	10,846	2,294	131	250	93	2,773
(C61)	WOMEN	-	-	-	-	-	-	-	-	-	-
	Total	**9,133**	**556**	**881**	**267**	**10,846**	**2,294**	**131**	**250**	**93**	**2,773**
Other cancers	MEN	39,786	2,499	4,307	1,187	47,890	20,069	1,279	2,348	644	24,418
(C00-C17, C22-C32,	WOMEN	35,690	2,433	4,067	1,134	43,415	15,480	1,055	1,769	501	18,869
C35-C49, C51-D48)	**Total**	**75,476**	**4,932**	**8,374**	**2,321**	**91,305**	**35,549**	**2,334**	**4,117**	**1,145**	**43,287**
Respiratory disease	MEN	31,277	2,166	3,233	977	37,673	7,893	564	999	248	9,719
(J00-J99)	WOMEN	34,778	2,437	3,935	1,046	42,226	5,911	441	935	185	7,483
	Total	**66,055**	**4,603**	**7,168**	**2,023**	**79,899**	**13,804**	**1,005**	**1,934**	**433**	**17,202**

Diabetes	MEN	2,188	150	407	86	3,625	754	53	195	27	1,524
(E10-E14)	WOMEN	2,428	156	347	88	4,013	487	33	115	22	1,110
	Total	**4,616**	**306**	**754**	**174**	**7,638**	**1,241**	**86**	**310**	**49**	**2,634**
Dementia and Alzheimer's	MEN	13,154	823	1,385	435	15,804	987	71	133	51	1,243
(F01-03, G30)	WOMEN	28,033	1,836	3,224	985	34,082	1,026	90	156	46	1,318
	Total	**41,187**	**2,659**	**4,609**	**1,420**	**49,886**	**2,013**	**161**	**289**	**97**	**2,561**
All other causes	MEN	41,290	2,788	5,246	1,440	50,134	21,961	1,568	3,323	2,332	27,401
	WOMEN	45,805	2,938	5,108	1,438	54,397	13,228	944	1,902	1,983	16,254
	Total	87,095	5,726	**10,354**	**2,878**	**113,390**	**35,189**	**2,512**	**5,225**	**4,315**	**44,326**

*Notes: ICD-10 codes in parentheses; *Not classified elsewhere; This table complies data from the four countries of the UK. In Northern Ireland, the data for Lung Cancer only includes ICD-10 code C34; The four countries in this table do not always add up to the United Kingdom totals, as the separate England and Wales figures are only for people who were residing in the country at the time of death; therefore the mortality figures for England and Wales separately are lower than the published mortality figures for England and Wales together.*

Source: England and Wales, Office for National Statistics (2014) Deaths registered by cause, sex and age. www.statistics.gov.uk (accessed January 2014); Scotland, National Records of Scotland (2014) Deaths, by sex, age and cause. www.gro-scotland.gov.uk (accessed January 2014); Northern Ireland, Statistics and Research Agency (2014) Registrar General Annual Report. NISRA: Belfast.

Table 3 Numbers of deaths and age-standardised death rates from cardiovascular disease (CVD) in men and women, all ages and under 75, by government office region, United Kingdom 2010/12

	All ages						Under 75					
	Age-standardised death rates/100,000			Average numbers of CVD deaths per year 2010 to 2012			Age-standardised death rates/100,000			Average numbers of CVD deaths per year 2010 to 2012		
	Men	Women	Both	Men	Women	Both	Men	Women	Both	Men	Women	Both
UK	**358.19**	**246.37**	**296.36**	**81,680**	**84,541**	**166,222**	**109.18**	**48.68**	**77.98**	**29,423**	**13,854**	**43,277**
ENGLAND	**350.03**	**240.16**	**289.36**	**67,137**	**69,253**	**136,391**	**105.51**	**46.59**	**75.17**	**23,714**	**11,018**	**34,732**
North East	368.66	248.55	301.74	3,599	3,567	7,166	119.00	54.12	85.46	1,400	677	2,077
Yorkshire and The Humber	384.54	258.60	314.12	7,299	7,376	14,675	118.71	52.56	84.67	2,709	1,265	3,974
North West	386.97	266.93	320.51	9,798	10,036	19,834	124.89	58.55	90.79	3,853	1,897	5,750
East Midlands	354.93	241.90	292.90	6,082	6,010	12,092	106.30	47.74	76.48	2,180	1,005	3,185
West Midlands	360.35	239.94	293.61	7,391	7,360	14,751	109.90	47.72	78.09	2,686	1,217	3,903
East of England	332.26	231.80	276.89	7,600	7,951	15,551	93.98	41.70	67.11	2,445	1,139	3,584
South East	323.53	228.31	271.24	10,745	11,853	22,598	89.93	38.77	63.54	3,370	1,532	4,902
London	337.45	229.21	277.76	7,111	7,025	14,136	110.10	47.58	77.34	2,799	1,296	4,096
South West	324.96	222.94	268.62	7,513	8,076	15,589	89.99	37.20	62.81	2,271	990	3,261
WALES	**389.20**	**265.56**	**320.60**	**4,722**	**4,860**	**9,583**	**117.61**	**55.39**	**85.65**	**1,680**	**834**	**2,514**
SCOTLAND	**416.58**	**292.39**	**347.31**	**7,791**	**8,315**	**16,106**	**137.89**	**64.02**	**99.19**	**3,217**	**1,633**	**4,850**

NORTHERN IRELAND	**373.95**	**54.58**	**07.02**	**2,030**	**2,112**	**4,142**	**114.32**	**48.73**	**80.27**	**811**	**370**	**1,181**

Notes: ICD-10 codes I00-I99. Directly standardised using the 2013 European Standard Population.

Source: England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: Rates calculated in partnership with the General Register Office for Scotland; Northern Ireland: Rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 4 Numbers of deaths and age-standardised death rates from coronary heart disease (CHD) in men and women, all ages and under 75, by government office region, United Kingdom 2010/12

	All ages						Under 75					
	Age-standardised death rates/100,000			Average numbers of CHD deaths per year 2010 to 2012			Age-standardised death rates/100,000			Average numbers of CHD deaths per year 2010 to 2012		
	Men	Women	Both	Men	Women	Both	Men	Women	Both	Men	Women	Both
UK	**189.90**	**93.90**	**135.60**	**44,049**	**31,823**	**75,872**	**66.67**	**21.06**	**43.15**	**17,978**	**5,966**	**23,945**
ENGLAND	**184.06**	**90.27**	**131.10**	**35,864**	**25,702**	**61,567**	**63.88**	**19.80**	41.19	**14,359**	**4,658**	**19,016**
North East	195.57	96.26	139.52	1,957	1,371	3,328	73.46	23.29	47.55	869	291	1,160
Yorkshire and The Humber	210.17	105.45	150.87	4,072	2,978	7,049	74.36	23.67	48.30	1,703	568	2,271
North West	212.01	108.41	153.40	5,474	4,039	9,513	77.69	26.18	51.22	2,401	847	3,248
East Midlands	192.63	93.83	137.53	3,367	2,309	5,677	67.20	20.39	43.35	1,381	428	1,809
West Midlands	190.35	87.57	132.48	3,993	2,652	6,645	68.98	20.44	44.14	1,687	519	2,206
East of England	172.77	88.38	125.20	3,994	2,999	6,993	55.37	17.78	36.05	1,440	484	1,924
South East	161.39	77.91	114.02	5,422	3,987	9,409	51.90	15.23	32.99	1,948	598	2,547
London	172.99	84.54	123.01	3,673	2,546	6,220	63.55	19.67	40.53	1,582	519	2,102
South West	167.61	78.89	117.17	3,911	2,821	6,732	53.25	15.09	33.61	1,348	403	1,750
WALES	**210.55**	**103.82**	**150.08**	**2,597**	**1,878**	**4,476**	**71.94**	**24.44**	**47.54**	**1,031**	**368**	**1,399**
SCOTLAND	**228.58**	**119.73**	**166.33**	**4,392**	**3,379**	**7,772**	**87.80**	**30.13**	**57.56**	**2,056**	**768**	**2,823**

NORTHERN IRELAND	**214.90**	**104.69**	**151.20**	**1,195**	**863**	**2,058**	**74.87**	**22.88**	**47.90**	**533**	**173**	**706**

Notes: ICD-10 codes I20-I25. Directly standardised using the 2013 European Standard Population.

Source: England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: Rates calculated in partnership with the General Register Office for Scotland; Northern Ireland: Rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 5 Numbers of deaths and age-standardised death rates from stroke in men and women, all ages and under 75, by government office region, United Kingdom 2010/12

	All ages						Under 75					
	Age-standardised death rates/100,000			Average numbers of Stroke deaths per year 2010 to 2012			Age-standardised death rates/100,000			Average numbers of Stroke deaths per year 2010 to 2012		
	Men	Women	Both	Men	Women	Both	Men	Women	Both	Men	Women	Both
UK	**78.57**	**77.05**	**78.44**	**17,292**	**26,776**	**44,069**	**16.66**	**12.48**	**13.88**	**4,425**	**3,545**	**6,353**
ENGLAND	**76.12**	**74.49**	**75.87**	**14,117**	**21,757**	**35,874**	**15.98**	**11.92**	**13.88**	**3,540**	**2,813**	**6,353**
North East	83.74	79.70	82.09	781	1,155	1,936	19.32	14.03	16.57	225	175	400
Yorkshire and The Humber	84.37	79.66	82.29	1,534	2,303	3,837	18.29	13.18	15.63	407	316	723
North West	83.32	81.36	82.93	2,022	3,090	5,112	19.43	15.56	17.42	591	504	1,095
East Midlands	72.70	72.14	72.87	1,194	1,813	3,007	14.71	11.81	13.23	296	249	545
West Midlands	80.86	79.26	80.53	1,587	2,461	4,048	15.82	12.40	14.07	382	314	697
East of England	70.31	69.18	70.21	1,565	2,406	3,971	13.84	10.13	11.92	356	276	632
South East	70.45	71.91	72.18	2,289	3,787	6,075	13.69	10.09	11.83	508	397	905
London	70.46	62.38	66.25	1,440	1,919	3,359	17.85	11.96	14.75	447	328	775
South West	75.22	76.36	76.72	1,706	2,823	4,529	13.13	9.51	11.26	329	252	581
WALES	**81.90**	**80.20**	**81.73**	**963**	**1,486**	**2,449**	**17.94**	**14.40**	**16.12**	**254**	**216**	**470**
SCOTLAND	**100.56**	**98.52**	**100.57**	**1,781**	**2,830**	**4,611**	**22.22**	**16.41**	**19.16**	**508**	**418**	**926**

NORTHERN IRELAND	**83.63**	**84.26**	**85.23**	**432**	**704**	**1,135**	**17.66**	**13.00**	**15.24**	**124**	**98**	**222**

Notes: ICD-10 codes I20-I25. Directly standardised using the 2013 European Standard Population.

Source: England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: Rates calculated in partnership with the General Register Office for Scotland; Northern Ireland: Rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 6 Rankings for ten local authorities with highest coronary heart disease mortality rates and ten local authorities with the lowest coronary heart disease mortality rates, United Kingdom 2010/2012

All ages				Under 75			
Code	**Local authority**	**Region**	**Age-standardised death rate per 100,000**	**Code**	**Local authority**	**Region**	**Age-standardised death rate per 100,000**
10 HIGHEST DEATH RATES				**10 HIGHEST DEATH RATES**			
00BT	Tameside	North West	235.07	00QS	Glasgow City	Scotland	85.56
30UG	Hyndburn	North West	217.56	00BN	Manchester	North West	74.82
00EX	Blackburn with Darwen UA	North West	215.29	00QG	West Dunbartonshire	Scotland	74.04
00QS	Glasgow City	Scotland	198.34	00QJ	Dundee City	Scotland	73.76
30UD	Burnley	North West	198.07	00BT	Tameside	North West	72.78
00QG	West Dunbartonshire	Scotland	195.32	00EX	Blackburn with Darwen UA	North West	71.73
00RJ	Eilean Siar	Scotland	189.44	00QZ	North Lanarkshire	Scotland	71.40
95N	Craigavon	Northern Ireland	189.06	30UD	Burnley	North West	69.79
00QZ	North Lanarkshire	Scotland	186.67	00EY	Blackpool UA	North West	69.08
95M	Dungannon	Scotland	186.31	00KA	Luton UA	East of England	68.21
MIDDLE TWO DEATH RATES				**MIDDLE TWO DEATH RATES**			
00KB	Bedford UA	East of England	131.59	00GA	Herefordshire, County of UA	West Midlands	40.59
36UH	Selby	Yorkshire & The Humber	131.35	95C	Coleraine	Northern Ireland	40.55
10 LOWEST DEATH RATES				**10 LOWEST DEATH RATES**			
00BK	Westminster	London	94.51	22UQ	Uttlesford	East of England	23.16
38UD	South Oxfordshire	South East	94.42	45UF	Horsham	South East	23.10
00BD	Richmond upon Thames	London	93.65	43UE	Mole Valley	South East	23.09
43UK	Tandridge	South East	91.79	43UL	Waverley	South East	22.82
12UG	South Cambridgeshire	East of England	90.54	11UE	South Bucks	South East	22.56
29UK	Sevenoaks	South East	89.48	21UF	Lewes	South East	22.29

24UG	Hart	South East	86.51	24UC	East Hampshire	South East	20.94
00HF	Isles of Scilly UA	South West	74.83	00AW	Kensington and Chelsea	London	20.54
00AW	Kensington and Chelsea	London	73.55	24UG	Hart	South East	17.13
00AA	City of London	London	71.97	00HF	Isles of Scilly UA	South West	0.00

Source: England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: Rates calculated in partnership with the General Register Office for Scotland; Northern Ireland: Rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 7 Rankings for ten local authorities with highest stroke mortality rates and ten local authorities with the lowest stroke mortality rates, United Kingdom 2010/2012

Code	Local authority	Region	Age-standardised death rate per 100,000	Code	Local authority	Region	Age-standardised death rate per 100,000
10 HIGHEST DEATH RATES				**10 HIGHEST DEATH RATES**			
95G	Ballymena	Northern Ireland	139.73	00QU	Inverclyde	Scotland	31.22
95I	Cookstown	Northern Ireland	139.73	00QS	Glasgow City	Scotland	27.09
00RC	Renfrewshire	Scotland	135.87	00BN	Manchester	North West	26.88
00QU	Inverclyde	Scotland	122.58	00RC	Renfrewshire	Scotland	26.63
36UG	Scarborough	Yorkshire & The Humber	120.05	95I	Cookstown	Northern Ireland	24.99
00RA	Orkney Islands	Scotland	117.65	00RJ	Eilean Siar	Scotland	24.94
00QS	Glasgow City	Scotland	114.74	00EY	Blackpool UA	North West	23.90
95B	Limavady	Northern Ireland	114.40	00EX	Blackburn with Darwen UA	North West	23.83
00QG	West Dunbartonshire	Scotland	111.34	00QZ	North Lanarkshire	Scotland	23.68
00QQ	Falkirk	Scotland	109.99	34UB	Corby	Northern Ireland	23.09
MIDDLE TWO DEATH RATES				**MIDDLE TWO DEATH RATES**			
00CU	Walsall	West Midlands	76.46	29UB	Ashford	South East	13.47
40UC	Sedgemoor	South West	76.43	00FK	Derby UA	East Midlands	13.45
10 LOWEST DEATH RATES				**10 LOWEST DEATH RATES**			
95E	Moyle	Northern Ireland	57.44	24UP	Winchester	South East	7.48
43UD	Guildford	South East	56.39	23UF	Stroud	South West	7.12
00BD	Richmond upon Thames	London	55.15	22UE	Castle Point	East of England	6.98
42UB	Babergh	East of England	53.17	17UF	Derbyshire Dales	East Midlands	6.79
00AW	Kensington and Chelsea	London	53.03	19UG	Purbeck	South West	6.31
00BK	Westminster	London	53.00	95K	Omagh	Northern Ireland	6.20
00AG	Camden	London	52.37	24UN	Test Valley	South East	6.17

00AQ	Harrow	London	52.30	24UG	Hart	South East	6.05
00HF	Isles of Scilly UA	South West	42.86	26UJ	Three Rivers	East of England	6.03
00AA	City of London	London	40.83	00HF	Isles of Scilly UA	South West	0.00

Source: England and Wales: rates calculated in partnership with the Office for National Statistics; Scotland: Rates calculated in partnership with the General Register Office for Scotland; Northern Ireland: Rates calculated in partnership with Northern Ireland Statistics and Research Agency.

Table 8 Prevalence of selected cardiovascular conditions by Government Office Region and country, United Kingdom 2012/13

Country / Government Office Region (GOR)	Population	Coronary Heart Disease Register		Stroke or Transient Ischaemic Attacks (TIA) Register		Hypertension Register		Heart Failure Register		Atrial Fibrillation Register		Peripheral Arterial Disease (PAD) Register	
		n	%	n	%		%	n	%	n	%	n	%
East Midlands	4,735,883	170,392	3.6	84,601	1.8	676,809	14.3	37,662	0.8	75,494	1.6	30,443	0.6
East of England	6,113,986	199,093	3.3	101,965	1.7	859,211	14.1	44,340	0.7	98,755	1.6	34,950	0.6
London	9,056,401	193,614	2.1	94,989	1.0	999,576	11.0	44,179	0.5	80,989	0.9	35,140	0.4
North East	2,696,547	121,807	4.5	57,845	2.1	418,078	15.5	23,603	0.9	45,050	1.7	26,520	1.0
North West	7,397,503	292,461	4.0	139,228	1.9	1,051,020	14.2	62,564	0.8	117,998	1.6	65,560	0.9
South East	9,074,471	275,806	3.0	150,792	1.7	1,213,525	13.4	55,659	0.6	147,135	1.6	51,394	0.6
South West	5,536,574	196,447	3.5	112,083	2.0	801,615	14.5	42,997	0.8	105,323	1.9	37,902	0.7
West Midlands	5,880,643	202,258	3.4	104,690	1.8	864,902	14.7	44,561	0.8	90,844	1.5	39,829	0.7
Yorkshire and The Humber	5,524,195	218,663	4.0	105,366	1.9	775,989	14.0	42,028	0.8	87,908	1.6	43,682	0.8
England	56,016,203	1,870,541	3.4	951,559	1.7	7,660,725	13.7	397,593	0.7	849,496	1.5	365,420	0.7
Scotland	5,552,133	236,466	4.3	116,879	2.1	760,317	13.7	45,074	0.8	84,250	1.5	48,521	0.9
Wales	3,180,153	125,421	3.9	63,634	2.0	493,266	15.5	29,613	0.9	58,698	1.8	22,912	0.7
Northern Ireland	1,909,338	74,648	3.9	33,470	1.8	245,730	12.9	14,400	0.8	27,756	1.5	13,802	0.7
UK	**66,657,827**	**2,307,076**	**3.5**	**1,165,542**	**1.7**	**9,160,038**	**13.7**	**486,680**	**0.7**	**1,020,200**	**1.5**	**450,655**	**0.7**

Note: England - Copyright © Health and Social Care Information Centre 2014.

Source: England - Information Centre QOF achievement data 2012/13; Wales - StatsWales. QOF 20012/13 achievement data; Scotland - ISD Scotland. QOF achievement data 2013/13; Northern Ireland - Department of Health, Social Services and Public Safety. QOF achievement data 2012/13

Table 9 Prescriptions used in the prevention and treatment of cardiovascular disease, Wales 2005 to 2013

	Thousands (000s)								
Prescriptions	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Digoxin and other positive inotropic drugs (2.1)	362	357	337	319	307	296	284	273	259
Diuretics (2.2)	3,083	3,091	3,028	3,000	2,979	2,971	2,960	2,940	2,897
Anti-arrhythmic drugs (2.3)	99	94	87	81	75	68	64	62	60
Beta-adrenoreceptor blocking drugs (2.4)	2,093	2,110	2,071	2,116	2,165	2,237	2,322	2,424	2,505
Antihypertensive and heart failure drugs (2.5)	3,442	3,774	4,124	4,402	4,601	4,781	4,920	5,063	5,173
Nitrates, calcium blockers & other antianginal drugs (2.6)	2,731	2,892	3,032	3,135	3,205	3,263	3,314	3,390	3,437
Anticoagulants and protamine (2.8)	576	612	650	689	723	764	808	874	944
Antiplatelet drugs (2.9)	2,563	2,716	2,846	3,011	3,045	2,933	2,905	2,890	2,859
Anti-fibrinolytic drugs and haemostatics (2.11)	23	24	28	30	30	31	33	34	33
Lipid-lowering drugs (2.12)	3,103	3,626	3,985	4,297	4,562	4,693	4,788	4,956	5,076
All prescriptions for disease of the circulatory system	**18,073**	**19,296**	**20,188**	**21,082**	**21,691**	**22,037**	**22,399**	**22,906**	**23,247**

Notes: British National Formulary (BNF) codes in parentheses.

Source: Health Statistics and Analysis Unit (2014). Prescription cost analysis 2013. Welsh Government: Cardiff and previous editions.

Table 10 Prescriptions used in the prevention and treatment of cardiovascular disease, Scotland 2001/02 to 2013/14

	Thousands (000s)									
Prescriptions	**2001/02**	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**
Digoxin and other positive inotropic drugs (2.1)	358	323	315	305	296	291	283	276	269	260
Diuretics (2.2)	3,469	3,914	3,810	3,680	3,597	3,544	3,457	3,382	3,269	3,154
Anti-arrhythmic drugs (2.3)	102	90	85	81	77	73	70	71	69	68
Beta-adrenoreceptor blocking drugs (2.4)	2,508	3,027	2,940	2,853	2,850	2,883	2,909	2,957	2,998	3,048
Antihypertensive and heart failure drugs (2.5)	2,298	3,777	4,127	4,462	4,693	4,875	4,965	5,045	5,095	5,160
Nitrates, calcium blockers & other antianginal drugs (2.6)	3,278	3,542	3,625	3,666	3,683	3,714	3,697	3,699	3,716	3,735
Anticoagulants and protamine (2.8)	489	612	646	676	707	743	773	819	884	958
Antiplatelet drugs (2.9)	2,461	3,448	3,545	3,652	3,743	3,724	3,577	3,506	3,404	3,295
Anti-fibrinolytic drugs and haemostatics (2.11)	35	36	38	39	41	42	43	44	47	47
Lipid-lowering drugs (2.12)	1,667	3,649	4,081	4,376	4,624	4,826	4,875	4,861	4,907	4,977
All prescriptions for disease of the circulatory system	**16,667**	**22,418**	**23,212**	**23,791**	**24,312**	**24,716**	**24,649**	**24,660**	**24,657**	**24,703**

Notes: British National Formulary (BNF) codes in parentheses.

Source: ISD Scotland (2014). Prescription Cost Analysis 2013/14. NHS National Services: Edinburgh. and previous editions.

Table 11 Prescriptions used in the prevention and treatment of cardiovascular disease, Northern Ireland 2000 to 2013

	Thousands (000s)									
Prescriptions	**2000**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Digoxin and other positive inotropic drugs (2.1)	132	107	104	101	99	96	95	93	92	90
Diuretics (2.2)	819	1,015	1,009	992	983	983	992	1,002	996	978
Anti-arrhythmic drugs (2.3)	41	38	36	35	34	32	31	32	31	30
Beta-adrenoreceptor blocking drugs (2.4)	641	908	918	915	937	967	1,020	1,059	1,108	1,150
Antihypertensive and heart failure drugs (2.5)	602	1,145	1,247	1,364	1,445	1,517	1,595	1,640	1,689	1,728
Nitrates, calcium blockers & other antianginal drugs (2.6)	928	1,001	1,039	1,080	1,089	1,097	1,124	1,154	1,188	1,218
Anticoagulants and protamine (2.8)	138	183	194	207	220	233	249	274	300	334
Antiplatelet drugs (2.9)	539	957	1,026	1,095	1,151	1,177	1,192	1,223	1,239	1,239
Anti-fibrinolytic drugs and haemostatics (2.11)	0	12	12	13	13	14	14	16	17	16
Lipid-lowering drugs (2.12)	9	1,047	1,227	1,393	1,534	1,652	1,761	1,838	1,901	1,954
All prescriptions for disease of the circulatory system	**4,226**	**6,413**	**6,812**	**7,195**	**7,505**	**7,769**	**8,073**	**8,331**	**8,560**	**8,736**

Notes: British National Formulary (BNF) codes in parentheses.

Source: HSC (2014). Prescription Cost Analysis 2013. Business Services Organisation: Belfast.

Table 12 Number of CABGs and PCIs, United Kingdom 1977 to 2012

	Coronary artery bypass surgery (CABG)	Percutaneous coronary interventions (PCI)
1977	2,297	
1978	2,653	
1979	2,918	
1980	4,057	
1981	5,130	
1982	6,008	
1983	8,332	
1984	9,433	
1985	10,667	
1986	10,767	
1987	11,521	
1988	11,113	
1989	12,648	
1990	14,431	
1991	15,659	9,933
1992	19,241	11,575
1993	21,031	12,937
1994	22,056	14,624
1995	22,475	17,344
1996	22,160	20,511
1997	25,639	22,902
1998	25,083	24,899
1999	24,733	28,133
2000	25,127	33,256
2001	24,663	38,992
2002	25,277	44,913
2003	25,461	53,261
2004	25,160	62,780
2005	23,412	70,142
2006	23,623	73,692
2007	25,372	77,373
2008	22,846	80,331
2009	19,766	83,130
2010	17,986	87,676
2011	17,751	88,692
2012	16,791	92,445

Notes: Operations performed in NHS hospitals and selected private hospitals are included.

Source: British Cardiovascular Intervention Society (2013). BCIS Audit returns . Personal communication. The Society for Cardiothoracic Surgery in Great Britain & Ireland (2014). http://bluebook.scts.org/#ActivityRates. Accessed in March 2014

Table 13 Number of carotid endarterectomy cases reported in Hospital Episodes Statistics, by audit reporting period, Strategic Health Authority and country, United Kingdom 2005 to 2012

	Round 1 **operations 1st December 2005 to 31st December 2007**	Round 2 **operations 1st January 2008 to 30th September 2008**	Round 3 **operations 1st October 2009 to 30th September 2011**	Round 4 **operations 1st October 2010 to 30th September 2011**	Round 5 **operations 1st October 2011 to 30th September 2012**
East Midlands	404	477	382	405	401
East of England	641	477	586	556	588
London	918	1017	584	597	531
North East	545	483	265	283	292
North West	1,079	1421	1008	1077	1016
South Central	163	649	370	392	380
South East Coast	373	579	321	358	425
South West	1,047	972	584	577	587
West Midlands	985	1032	619	602	527
Yorkshire and The Humber	901	923	538	519	599
ENGLAND	**7,056**	**8345**	**5257**	**5366**	**5346**
NORTHERN IRELAND	**324**	**252**	**182**	**154**	
SCOTLAND	**793**	**822**	**494**	**395**	**451**
WALES	**530**	**601**	**328**	**362**	**319**
UK TOTAL	**9,703**	**10,020**	**6,261**	**6,277**	**N/A**

Notes: Data were sourced by the Vascular Services Quality Improvement Programme to compare the completeness of audit data with cases reported in Hospital Episode Statistics (HES). Each Round refers to the UK carotid endarterectomy audit period .Audit data are less complete than HES and have not been included in this table.

Source: Waton S, Johal A, Groene O, Cromwell D, Mitchell D, Loftus I. UK Carotid Endarterectomy Audit. Round 5. London: The Royal College of Surgeons of England, October 2013.

Table 14 NHS expenditure in £millions on CVD by care setting and CVD type, England 2012/13

	Prevention/Health Promotion	Primary care			Secondary care				
		Primary care	Primary prescribing	Total Primary Care	Inpatient: Elective and Daycase	Inpatient: Non-elective	Outpatient	Other secondary care	Total Secondary Care
Coronary heart disease	2.5	5.4	574.1	579.5	246.1	527.6	8.0	66.8	848.5
Stroke	0.7	0.2	25.8	26.1	46.3	444.1	19.7	60.9	571.0
Other CVD	16.0	47.8	787.6	835.4	556.3	952.7	520.8	923.9	2953.7
Total CVD	**19.2**	**53.5**	**1387.5**	**1441.0**	**848.6**	**1924.5**	**548.6**	**1051.5**	**4373.2**

	Urgent / emergency care		Community Care	Care provided in other setting	Administration, facilities & estates	Total expenditure
	Ambulance	Accident & Emergency				
Coronary heart disease	33.0	0.0	60.6	18.5	55.2	**1597.9**
Stroke	61.6	16.3	80.6	34.9	27.9	**819.1**
Other CVD	224.6	73.0	167.4	55.1	155.0	**4480.3**
Total CVD	**319.2**	**89.4**	**308.6**	**108.5**	**238.1**	**6897.2**

Notes: Expenditure data included within this table are taken from the 2012-13 programme budgeting returns. Programme budgeting returns are based on a subset of PCT accounts data and represent a subset of overall NHS expenditure data. Estimates of expenditure are calculated using price paid for specific activities and services purchased from healthcare providers. PCTs follow standard guidance, procedures and mappings when calculating programme budgeting data. The analysis of programme budgeting data by care setting was introduced for the first time in 2010/11. For this reason, programme budgeting data within individual care settings should be interpreted with caution. The allocation of expenditure to programme budgeting subcategories is not always straightforward, and subcategory level data should therefore be used with caution. Due to differences in the level of information available to PCTs on A&E attendances a national split has been applied to PCT total A&E expenditure to apportion it across programme budgeting categories. When converting A&E diagnosis codes to Programme Budgeting subcategories of disease, no codes are included in CHD, with MI and other CHD included in Other CVD, resulting in no A&E spend for CHD.

Source: NHS England - Analytical services - Programme Budgeting Team (2014) 2012/13 Programme Budgeting Benchmarking Tool. http://www.england.nhs.uk/resources/resources-for-ccgs/prog-budgeting/ (accessed February 2014).

Table 15 NHS expenditure on CVD by Health Board, Wales 2012/13

	Expenditure per head / £				Total expenditure (£ millions)			
HSC Trust Name	**CHD**	**Stroke**	**Other CVD**	**Total CVD**	**CHD**	**Stroke**	**Other CVD**	**Total CVD**
Abertawe Bro Morgannwg UHB	43.87	26.69	72.16	142.72	22.8	13.9	37.5	74.1
Aneurin Bevan LHB	40.58	19.61	76.69	136.89	23.5	11.3	44.3	79.1
Betsi Cadwaladr UHB	41.68	28.80	85.36	155.84	28.8	19.9	58.9	107.6
Cardiff & Vale UHB	34.15	19.65	57.69	111.49	16.2	9.3	27.4	53.0
Cwm Taf LHB	43.60	27.61	82.82	154.03	12.8	8.1	24.4	45.4
Hywel Dda LHB	47.19	26.58	78.23	152.00	18.1	10.2	30.0	58.3
Powys Teaching LHB	47.11	58.03	81.68	186.82	6.3	7.7	10.9	24.8
Wales	**41.79**	**26.17**	**75.93**	**143.89**	**128.5**	**80.4**	**233.4**	**442.3**

Notes: HBs allocate as much expenditure as they can, given the activity information available. The apportionment of the remainder means that some figures are approximate. HBs are commissioned on a 'host' authority basis and have not been recharged to HB area. Programme budget categories are defined by reference to ICD 10 codes. To calculate expenditure per head of population, the ONS revised mid-year population 2013 estimates were used.

Source: Financial Information Strategy, Public Health Wales (2014) Personal communication.

Table 16 NHS expenditure on CVD by Health and Social Care Trust, Northern Ireland 2012/13

	Expenditure per head of population /£				CVD expenditure (£ millions)			
HSC Trust Name	**CHD**	**Stroke**	**Other CVD**	**Total CVD**	**CHD**	**Stroke**	**Other CVD**	**Total CVD**
Belfast	163.67	22.68	246.95	433.31	57.0	7.9	86.0	150.9
Northern	48.76	9.02	66.81	124.59	22.7	4.2	31.1	58.0
Southern	71.12	11.71	90.26	173.09	24.9	4.1	31.6	60.6
South Eastern	65.26	9.64	116.76	191.66	23.7	3.5	42.4	69.6
Western	65.41	13.15	103.17	181.72	19.4	3.9	30.6	53.9
Northern Ireland	**80.99**	**12.94**	**121.57**	**215.50**	**147.7**	**23.6**	**221.7**	**393.0**

Notes: Hospital Information Branch identifies finished consultant episodes where a patient was treated for a diagnosis of coronary heart disease, cardiovascular disease or stroke using the relevant ICD 10 codes. To this activity information, Finance Directorate has applied 2012/13. HRG reference costs derived from annual trust costing returns, in order to produce an estimate of the total cost. All costs relate only to inpatient and daycase admitted care. Substantial A&E, outpatient, primary care, community and personal social services may also be provided to patients. Costs for these services are not collected at the level of detail required to enable an estimate on what has been spent on individuals with specific diagnoses.

Source: Hospital Information Branch, Department of Health, Social Services and Public Safety, Northern Ireland Executive (2014) Personal communication.