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:160–69); 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):10:100–99), 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 variety of national 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.6 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; 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.

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 cost.

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** | **Median death rates** | **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 |
| 00JR | Eilean Siar | Scotland | 386.95 | 00QJ | 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 |
| 00FH | Isles of Scilly | South West | 157.34 | 00FH | 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.

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

|                         | England Men | England Women | Scotland Men | Scotland Women | Wales Men | Wales Women | Northern Ireland Men | Northern Ireland Women | UK Men | UK 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| 104 637     | 4700                  | 6969                  | 29 311  | 34 549   |
| Hypertensive diseases (I10–I15) | 7444 8541 | 876 873       | 652 669      | 492 554        | 5464 10637| 8469 323  | 9786                  | 5469                  | 23 378  | 169 545  |
| Ischaemic heart disease (I20–I25) | 265 102 138 987 | 31 576 16 645 | 17 112 9214 | 1559 1569 | 539 714 | 5469 323  | 9786                  | 5469                  | 23 378  | 169 545  |
| Pulmonary heart disease and diseases of pulmonary circulation (I26–I28) | 24 185 | 29 394 | 2398 2872 | 1559 | 1569 | 539 | 714 | 9786 | 5469 |
| Other forms of heart disease (I30–I52) | 217 761 174 427 | 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 | 141 1307 | 953 | 833 | 459 | 376 | 22 576 | 20 746 |

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).

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 for 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 CABGs 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   | 4243  | 3822  | 4031  | 4126  | 4141  | 4149  | 4119  | 4088  | 4006  | 3900  | 3770  |
| Diuretics                                    | 20,678| 22,195| 30,203| 37,582| 37,355| 37,536| 37,511| 37,687| 37,563| 37,258| 36,650|
| Antiarrhythmic drugs                         | 232   | 532   | 1292  | 1265  | 1247  | 1226  | 1188  | 1174  | 1156  | 1129  | 1107  |
| Beta-adrenoceptor blocking drugs              | 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     | 4912  | 6,431 | 25,047| 47,742| 53,634| 57,823| 60,838| 63,571| 65,449| 67,184| 68,652|
| Nitrates, calcium blockers and other antiangiual drugs | 5156  | 16,718| 26,814| 34,707| 37,211| 39,701| 40,575| 42,043| 43,086| 44,675| 45,868|
| Anticoagulants and protamine                 | 629   | 13,564| 46,099| 67,909| 73,099| 79,991| 85,465| 91,577| 107,223| 11,906|
| Antiplatelet drugs                           | 271   | 3619  | 18,991| 16,843| 27,392| 32,196| 39,817| 43,204| 43,317| 39,570| 35,741|
| Antifibrinolytic drugs and haemostatics      | 282   | 327   | 352   | 358   | 363   | 373   | 392   | 396   | 393   | 396   | 396   |
| Lipid-lowering drugs                         | 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 pharmacies 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 £4.37 billion 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 £4.423 billion 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.

Cancer has overtaken CVD to become the main cause of death in a number of European countries, for example, in Belgium, Denmark and France, 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. Although the data we present here shows large increases in treatment over the past decade, Unal et al. 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. Measured using general practice data, between 1999 and 2008, the incidence of stroke in the UK dropped by 30%. However, it has been demonstrated that only using one source of incidence data can underestimate MI by 25–50%.

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. 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.
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. 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.

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

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

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

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

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

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

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

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

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

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

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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

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

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

Table 16 NHS expenditure on CVD by Health and Social Care Trust, Northern Ireland 2012/13
### Table 1 Deaths by cause, sex and age, United Kingdom 2012.

| Cause of Death                      | 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                              | **26,810** | 339     | 373   | 712   | 1,229 | 2,692 | 6,942 | 12,012|
| Disease Category                                                                 | MEN                      | WOMEN                   | Total   | 25,809 | 340 | 373 | 712 | 1,229 | 2,692 | 7,042 | 13,421 |
|---------------------------------------------------------------------------------|--------------------------|-------------------------|---------|--------|-----|-----|-----|-------|-------|-------|--------|
| Stroke (I60-I69)                                                                 | 16,196                   | 25,202                  | 41,398  |        |     |     |     |       |       |       |        |
| Disease of arteries, arterioles and capillaries (I70-I79)                       | 5,367                    | 4,790                   | 10,157  |        |     |     |     |       |       |       |        |
| Disease of veins, lymphatic vessels and lymph nodes not classified elsewhere (I80-I89) | 1,380                    | 2,013                   | 3,393   |        |     |     |     |       |       |       |        |
| Cancer (C00-D48)                                                                | 87,061                   | 78,757                  | 165,818 |        |     |     |     |       |       |       |        |
| Colo-rectal cancer (C18-C21)                                                    | 8,918                    | 7,594                   | 16,512  |        |     |     |     |       |       |       |        |
| Lung cancer (C33,C34)                                                           | 19,333                   | 16,086                  | 35,419  |        |     |     |     |       |       |       |        |
## Breast cancer (C50)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 74  | 1     | 1     | 1    | 9    | 18   | 26   | 18   |
|       | 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 (C61)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 10,846 | 0  | 2    | 74   | 604  | 2,093 | 4,287 | 3,786 |
| **Total** | **10,846** | **0** | **2** | **74** | **604** | **2,093** | **4,287** | **3,786** |

## Other cancers (C00-C17, C22-C32, C35-C49, C51-D48)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 47,890 | 608 | 798 | 2,723 | 7,194 | 13,095 | 15,314 | 8,158 |
|       | 43,415 | 563 | 779 | 2,352 | 5,345 | 9,830  | 13,645 | 10,901 |
| **Total** | **91,305** | **1,171** | **1,577** | **5,075** | **12,539** | **22,925** | **28,959** | **19,059** |

## Respiratory disease (J00-J99)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 37,673 | 182 | 213 | 661  | 2,251 | 6,412 | 13,049 | 14,905 |
|       | 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 (E10-E14)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 3,625 | 167 | 125 | 205  | 377  | 650  | 1,163 | 938  |
|       | 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 (F01-03, G30)

|       | MEN | WOMEN | Total |
|-------|-----|-------|-------|
|       | 15,804 | 0  | 1    | 26   | 153  | 1,063 | 5,616 | 8,945 |
|       | 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            | 113,900 | 8,981 | 5,212 | 7,747 | 9,290 | 13,096 | 26,135 | 42,929 |

Notes: ICD-10 codes in parentheses. This table compiles 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

| Cause                        | All ages | Under 75 |
|------------------------------|----------|----------|
|                              | England  | Wales    | Scotland | Northern Ireland | United Kingdom | England | Wales | Scotland | Northern Ireland | United Kingdom |
| All causes                   | 224,460  | 15,172   | 26,015   | 7,094      | 273,347       | 87,986  | 6,132 | 11,938    | 3,140             | 109,643         |
| MEN                          | 242,319  | 16,330   | 28,922   | 7,662      | 295,777       | 60,721  | 4,298 | 8,508     | 2,090             | 75,904          |
| WOMEN                        |          |          |          |            |               |         |       |           |                  |                 |
| Total                        | 466,779  | 31,502   | 54,937   | 14,756     | 569,024       | 148,707 | 10,430| 20,446    | 5,230             | 85,547          |
| All causes                   |          |          |          |            |               |         |       |           |                  |                 |
| All diseases of the          |          |          |          |            |               |         |       |           |                  |                 |
| circulatory system           |          |          |          |            |               |         |       |           |                  |                 |
| (I00-I99)                    |          |          |          |            |               |         |       |           |                  |                 |
| MEN                          | 64,659   | 1,608    | 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          |
| Category                                                                 | MEN          | WOMEN        | Total       |
|--------------------------------------------------------------------------|--------------|--------------|-------------|
| **Other heart diseases**                                                 |              |              |             |
| (I26-I52)                                                               | 8,851        | 12,624       | 21,475      |
| **Stroke**                                                              | 13,145       | 20,312       | 33,457      |
| (I60-I69)                                                               | 4,480        | 3,908        | 8,388       |
| Diseases of arteries, arterioles and capillaries                         |              |              |             |
| (I70-I79)                                                               | 1,217        | 1,794        | 3,011       |
| Diseases of veins, lymphatic vessels and lymph nodes*                    |              |              |             |
| (I80-I89)                                                               |              |              |             |
| All other cardiovascular conditions (I95-I99, I00-I04, I16-I19, I53-I59, I90-I94) |              |              |             |
| Cancer                                                                  |              |              |             |
| (C00-D48)                                                               |              |              |             |
| **Total**                                                               | 71,892       | 64,275       | 136,167     |

- **MEN** represents the data for males.
- **WOMEN** represents the data for females.
- **Total** represents the sum of the data for males and females.
| Cancer Type                  | MEN      | WOMEN    | Total     |
|-----------------------------|----------|----------|-----------|
| Colo-rectal cancer (C18-C21) |          |          |           |
| MEN                         | 7,297    | 534      | 13,487    |
| WOMEN                       | 6,190    | 399      | 13,487    |
| Total                       | 13,487   | 933      | 23,920    |
| Lung cancer (C33,C34)       |          |          |           |
| MEN                         | 15,618   | 1,045    | 28,315    |
| WOMEN                       | 12,697   | 849      | 28,315    |
| Total                       | 28,315   | 1,894    | 54,011    |
| Breast cancer (C50)         |          |          |           |
| MEN                         | 58       | 8        | 97,756    |
| WOMEN                       | 9,698    | 1,071    | 97,756    |
| Total                       | 9,756    | 597      | 107,573   |
| Prostate cancer (C61)       |          |          |           |
| MEN                         | 9,133    | 556      | 9,133     |
| WOMEN                       | -        | -        | -         |
| Total                       | 9,133    | 556      | 9,133     |
| Other cancers (C00-C17, C22-C32, C35-C49, C51-D48) |          |          |           |
| MEN                         | 39,786   | 2,499    | 39,786    |
| WOMEN                       | 35,690   | 2,348    | 35,690    |
| Total                       | 75,476   | 4,847    | 75,476    |
| Respiratory disease (J00-J99) |          |          |           |
| MEN                         | 31,277   | 2,166    | 31,277    |
| WOMEN                       | 34,778   | 2,437    | 34,778    |
| Total                       | 66,055   | 4,603    | 66,055    |
|                      | MEN            |   |   |   |   |   |   |   |   |               |
|----------------------|----------------|---|---|---|---|---|---|---|---|----------------|
| **Diabetes**         |                |   |   |   |   |   |   |   |   |               |
| **(E10-E14)**        |                |   |   |   |   |   |   |   |   |               |
| MEN                  | 2,188          | 150|407| 86|3,625| 754| 53| 195| 27| 1,524          |
| 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** |            |   |   |   |   |   |   |   |   |               |
| **(F01-03, G30)**    |                |   |   |   |   |   |   |   |   |               |
| MEN                  | 13,154         | 823|1,385|435|15,804| 987| 71|133 | 51| 1,243          |
| 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 composes 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

| Region           | All ages | Under 75 |
|------------------|----------|----------|
|                  | 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 |
| 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       |          |       |      |     |       |      |     |       |      |
| Yorkshire and The Humber | 368.66 | 266.39 | 301.74 | 3,599 | 3,567 | 7,166 | 119.00 | 54.12 | 85.46 | 2,709 | 1,265 | 3,974 |
| North West       |          |       |      |     |       |      |     |       |      |
| 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  |          |       |      |     |       |      |     |       |      |
| South East       | 332.26   | 231.80 | 276.89 | 7,600 | 7,951 | 15,551 | 93.98 | 41.70 | 67.11 | 2,445 | 1,139 | 3,584 |
| London           | 323.53   | 228.31 | 271.24 | 10,745 | 11,853 | 22,598 | 89.93 | 38.77 | 63.54 | 3,370 | 1,532 | 4,902 |
| South West       |          |       |      |     |       |      |     |       |      |
| 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

| Region                      | 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

| Region                  | 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 |
|-------------------------|--------------------------------------|--------------------------------------------------------|--------------------------------------|--------------------------------------------------------|
|                         | All ages                              | Under 75                                               | All ages                              | Under 75                                               |
|                         | Men        | Women      | Both       | Men        | Women      | Both       | Men        | Women      | Both       | Men        | Women      | Both       |
| UK                      |            |            |            |            |            |            |            |            |            |            |            |            |            |
| All ages                | 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                 |            |            |            |            |            |            |            |            |            |            |            |            |            |
| North East              | 76.12      | 74.49      | 75.87      | 14,117     | 21,757     | 35,874     | 15.98      | 11.92      | 13.88      | 3,540      | 2,813      | 6,353      |
| 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        | 404        | 995        |
| 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

| Code | Local authority          | Region           | Age-standardised death rate per 100,000 | Code | Local authority          | Region           | Age-standardised death rate per 100,000 |
|------|--------------------------|------------------|----------------------------------------|------|--------------------------|------------------|----------------------------------------|
|      | All ages                 |                  |                                        |      | Under 75                 |                  |                                        |
| 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                                 | 008N | 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         | 184.44                                 | 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                                  |
| Code | Area          | Region     | Rate  | Code          | Area          | Region     | Rate  |
|------|---------------|------------|-------|---------------|---------------|------------|-------|
| 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 |
|------|----------------------------|-------------------------|----------------------------------------|
| 95G  | Ballymena                  | Northern Ireland        | 139.73                                 |
| 95I  | Cookstown                  | Northern Ireland        | 139.73                                 |
| 00RC | Renfrewshire               | Scotland                | 135.87                                 |
| 00QU | Inverclyde                 | Scotland                | 122.58                                 |
| 36UG | Scarborough               | Yorkshire & The Humber  | 120.05                                 |
| 00RA | Orkney Islands             | Scotland                | 117.65                                 |
| 00QS | Glasgow City               | Scotland                | 114.74                                 |
| 95B  | Limavady                   | Northern Ireland        | 114.40                                 |
| 00QG | West Dunbartonshire        | Scotland                | 111.34                                 |
| 00QQ | Falkirk                    | Scotland                | 109.99                                 |

| Code | Local authority            | Region                  | Age-standardised death rate per 100,000 |
|------|----------------------------|-------------------------|----------------------------------------|
| 10 HIGHEST DEATH RATES | | | |
| 00QU | Inverclyde                 | Scotland                | 31.22                                  |
| 00QS | Glasgow City               | Scotland                | 27.09                                  |
| 00BN | Manchester                | North West              | 26.88                                  |
| 00RC | Renfrewshire               | Scotland                | 26.63                                  |
| 00QS | Glasgow City               | Scotland                | 24.99                                  |
| 00RA | Orkney Islands             | Scotland                | 24.94                                  |
| 00EY | Blackpool UA               | North West              | 23.90                                  |
| 00EX | Blackburn with Darwen UA   | North West              | 23.83                                  |
| 00QZ | North Lanarkshire          | Scotland                | 23.68                                  |
| 34UB | Corby                      | Northern Ireland        | 23.09                                  |

| Code | Local authority            | Region                  | Age-standardised death rate per 100,000 |
|------|----------------------------|-------------------------|----------------------------------------|
| MIDDLE TWO DEATH RATES | | | |
| 00CU | Walsall                    | West Midlands           | 76.46                                  |
| 40UC | Sedgemoor                  | South West              | 76.43                                  |

| Code | Local authority            | Region                  | Age-standardised death rate per 100,000 |
|------|----------------------------|-------------------------|----------------------------------------|
| 10 LOWEST DEATH RATES | | | |
| 95E  | Moyle                      | Northern Ireland        | 57.44                                  |
| 43UD | Guildford                  | South East              | 56.39                                  |
| 00BD | Richmond upon Thames       | London                  | 55.15                                  |
| 42UB | Bambergh                   | East of England         | 53.17                                  |
| 00AW | Kensington and Chelsea     | London                  | 53.03                                  |
| 00BK | Westminster                | London                  | 53.00                                  |
| 00AG | Camden                     | London                  | 52.37                                  |

| Code | Local authority            | Region                  | Age-standardised death rate per 100,000 |
|------|----------------------------|-------------------------|----------------------------------------|
| 10 LOWEST DEATH RATES | | | |
| 24UP | Winchester                 | South East              | 7.48                                   |
| 23UF | Stroud                     | South West              | 7.12                                   |
| 22UE | Castle Point               | East of England         | 6.98                                   |
| 17UF | Derbyshire Dales           | East Midlands           | 6.79                                   |
| 19UG | Purbeck                    | South West              | 6.31                                   |
| 95K  | Omagh                      | Northern Ireland        | 6.20                                   |
| 24UN | Test Valley                | South East              | 6.17                                   |
| Code | Area Name          | Region         | Rate | Code | Area Name         | Region        | Rate |
|------|-------------------|----------------|------|------|-------------------|---------------|------|
| 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  | %  | 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 | 1.6 | 26,520 | 1.0 |
| North West                              | 7,397,503   | 292,461 | 4.0 | 139,228 | 1.9 | 1,051,520 | 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 | 44,516 | 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

| 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

| 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   |
| Nitrate, 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.
| Prescriptions                                                                 | Thousands (000s) |
|------------------------------------------------------------------------------|------------------|
|                                                                              | 2000  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  |
| Digoxin and other positive inotropic drugs (2.1)                            | 2,106 | 1,015 | 1,009 | 992   | 983   | 983   | 992   | 1,002 | 996   | 978   |
| Diuretics (2.2)                                                              | 612   | 1,015 | 1,009 | 992   | 983   | 983   | 992   | 1,002 | 996   | 978   |
| Anti-arrhythmic drugs (2.3)                                                  | 42    | 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 |
| Nitrate, 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

| Year | 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
|                | 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, Cramwell 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 | Inpatient: Elective and Daycase | Inpatient: Non-elective | Outpatient | Other secondary care | Total Secondary Care |
|                             | Primary prescribing | Total Primary 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-cclfn-ccgs/prog-budgeting/ (accessed February 2014).
Table 15 NHS expenditure on CVD by Health Board, Wales 2012/13

| 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

| HSC Trust Name | CHD  | Stroke | Other CVD | Total CVD | Expenditure per head of population /£ | CHD  | Stroke | Other CVD | Total CVD | CVD expenditure (£ millions) |
|----------------|------|--------|-----------|-----------|--------------------------------------|------|--------|-----------|-----------|-------------------------------|
| 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.