Dr Foster's case notes

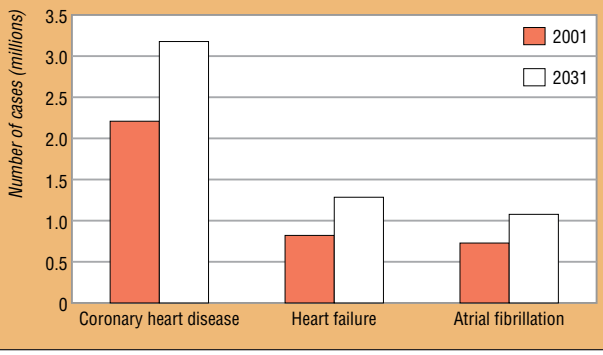
The ageing population of the United Kingdom and cardiovascular disease

The number of people aged 65 and over is predicted to increase by about 53% between 2001 and 2031, but the number of people aged under 65 will change little during this period (table). The increase in the number of older people will likely lead to an increase in the number of people who have chronic diseases, including cardiovascular disease. This will impose further workload and financial pressures on the NHS. We examined the possible impact of the ageing population on the expected number of people with three cardiovascular disorders: coronary heart disease, heart failure, and atrial fibrillation.

Change in population (thousands) of United Kingdom by age group, 2001-31

	Males			Females		
Age group	2001	2031	Change (%)	2001	2031	Change (%)
Under 65	24 689	24 256	-1.8	24 790	25 047	1.0
65-74	2 304	3 523	52.9	2 636	3 906	48.2
75-84	1 306	2 186	67.4	1 983	2 697	36.0
≥85	312	798	155.8	816	1 242	52.2
Total	28 611	30 764	7.5	30 225	32 893	8.8

Estimated number of cases of coronary heart disease, heart failure and atrial fibrillation in the United Kingdom 2001-31



Diseases of the cardiovascular system are the commonest cause of death in the United Kingdom and are responsible for a significant proportion of NHS spending.[1] We examined the possible impact of the ageing population on the expected number of people with coronary heart disease, heart failure, and atrial fibrillation. The data for the estimates of prevalence came from 211 general practices (total list size 1.4 million) contributing data to the general practice research database (GPRD).[2] The data for hospital admissions came from English hospital episode statistics.[3]

The total number of cases and inpatient admissions for coronary heart disease, heart failure, and atrial fibrillation in the United Kingdom in 2001 and 2031 were estimated by applying age-sex specific rates to the number of people in each age-sex group in the relevant year. The numbers for each age-sex group were then summed to give the overall total number of cases. This method assumes that the age-sex specific prevalence and admission rates of these diseases will not change in the future.

The estimated numbers of cases of coronary heart disease, heart failure, and atrial fibrillation in the United Kingdom in 2001 and 2031 are contained in the figure. The estimated numbers of inpatient admissions for coronary heart disease, heart failure, and atrial fibrillation in the United Kingdom in 2001 and 2031 are in the figure on bmj.com.

If realised, these increases will have important implications for the NHS. Statins have become the single biggest component of the NHS prescribing budget, and their cost to the NHS is likely to increase further. So too will the costs of other drugs, as well as the costs of diagnostic tests and surgical procedures and of regular monitoring of patients by general practitioners, cardiologists, and nurses. New medical technologies may have a considerable impact on future caseloads.[4]

Similar changes in the number of people with cardiovascular disorders will be seen in most other developed countries, as they all tend to have low birth rates and increasing life expectancy, leading to an increasingly elderly population. Some of the expected increases in the number of cases could be attenuated by people leading healthier lifestyles—but recent trends suggest this may not happen. Obesity, diabetes, and high blood pressure increase the risk of developing heart disease. A key aim of government policy should therefore be to encourage people to remain active, engage in regular physical exercise, and refrain from behaviours that could have a detrimental effect on their health, such as binge drinking, smoking, and overeating.[5]

The basic figures

- The number of cases of coronary heart disease is predicted to increase by 44% to 3 190 000 in 2031; the number of hospital admissions is predicted to increase by 32% to 265 000
- The number of cases of heart failure is predicted to increase by 54% to 1 303 000 in 2031; the number of admissions is predicted to increase by 55% to 124 000
- The number of cases of atrial fibrillation is predicted to increase by 46% to 1 093 000 in 2031; the number of admissions is predicted to increase by 39% to 85 000

This month's Dr Foster's case notes were compiled by Azeem Majeed and Paul Aylin. Dr Foster is an independent research and publishing organisation created to examine measures of clinical performance.

References, methodology, and a figure are on **bmj.com**