

SECTION 7: STROKE

Introduction

Strokes are the third biggest cause of death and the most common cause of serious disability in adults in the UK. There are an estimated 111,000 first strokes in the UK every year (BHF 2009). In Darlington there are on average about 190 strokes every year. Of these about 33 (17%) patients aged less than 75 years die as an immediate outcome of a stroke, and about 158 are admitted to hospital. Of those that survive about half are left with a permanent physical disability and are in some way dependent on others for everyday activities.

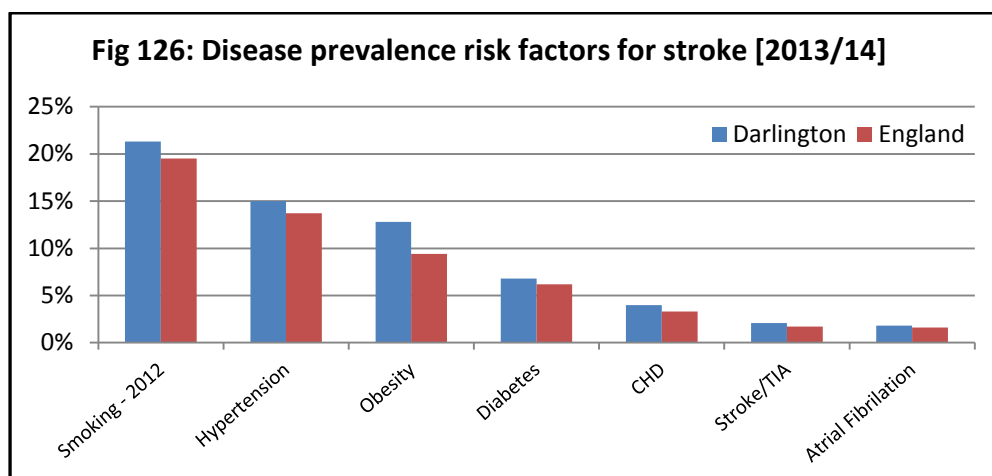
300,000 people in England live with moderate to severe disability as result of stroke. The effects can include physical disability, aphasia (language impairment), loss of cognitive and communication skills, and depression (DH 2007).

It is estimated that stroke costs the UK economy around £7 billion per year - £2.8 billion in direct costs to the NHS, £2.4 billion in costs for informal social care, and £1.8 billion in income lost due to productivity and disability (DH 2007). The management of strokes costs NHS County Durham and NHS Darlington about £10 million per year which represents 1.2% of the total NHS programme budget. The impact on social care costs and the wider support needs of stroke victims is even greater.

Strokes are also a major cause of morbidity; they are a contributing factor for entry into a care home for between 20% and 40% of residents. The death rate from stroke for men under 65 years is three and a half times higher in the most deprived 20th of England and Wales (BHF 2009).

The prevention of strokes is therefore an important component of the National Stroke Strategy. There are two main preventable causes of stroke; high blood pressure and atrial fibrillation (AF). The identification and management of high blood pressure is well established in primary care. The identification and management of AF is less well developed.

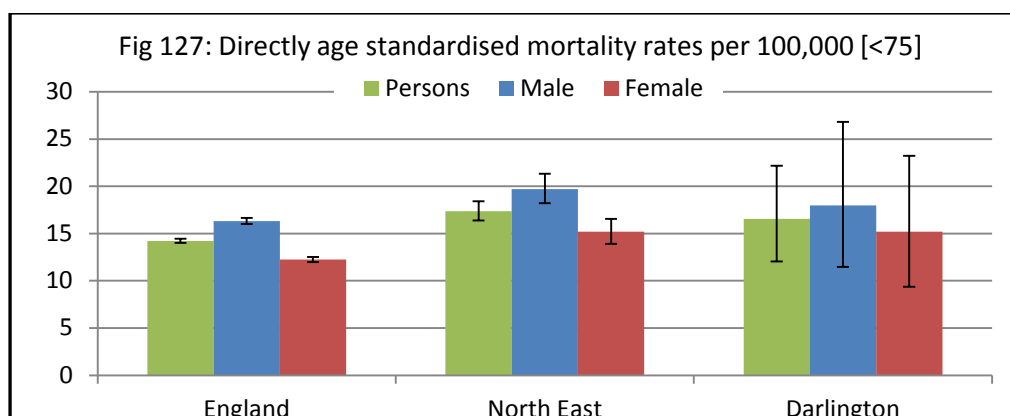
Stroke prevalence and the prevalence of risk factors for stroke are greater in Darlington than England. The table below illustrates these factors.



[Source: NHS IC QOF data 2013-14]

- In 2013/14 the prevalence of Stroke or Transient Ischaemic Attacks (TIA) was 2.1% compared to 1.7% nationally.
- The 2013/14 QOF indicates greater prevalence for stroke risk factors in Darlington than England. Smoking, hypertension, obesity, diabetes, CHD, stroke and AF practice registers all show greater prevalence in Darlington than England.
- 16,137 people in Darlington are on the hypertension register.
- 4,235 people in Darlington are on the CHD register.
- 1,963 people in Darlington are on the AF register. The number of people with AF may increase 2.5 fold by 2050 due to an aging population and improved survival of people with conditions that predispose to AF e.g. coronary heart disease.

The table below shows the pooled mortality for stroke between 2011 and 2013.

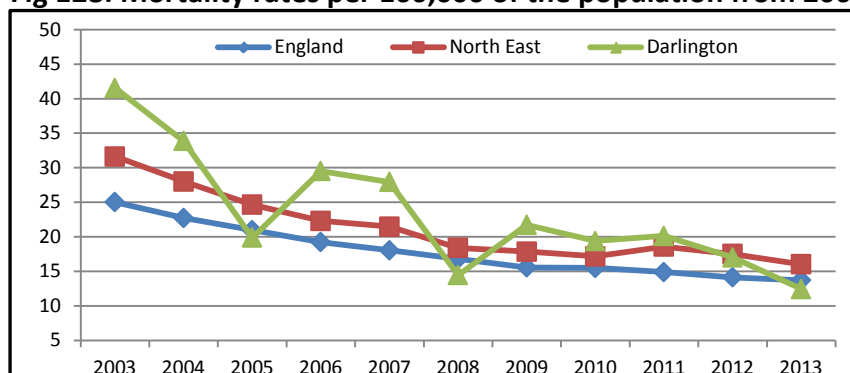


[Source: Health & Social Care Information Centre (HSCIC)]

- Premature stroke mortality rates for the period 2011-13 (pooled) show a greater difference between Darlington and England for males and females
- In England and the North East stroke mortality for the period 2011-13 is significantly higher for males than females. This is also the case in Darlington where there is a significant difference between the genders.
- 45 people died prematurely from stroke/TIA between 2011 and 2013 (24 men and 21 women). Between 2003 and 2013 an average of 22 people in Darlington died prematurely (under the age of 75 years) per year from stroke/TIA.
- Annual stroke mortality rates in Darlington have been falling over time but did experience increases in rates in 2006 and 2009. Annual rates are subject to fluctuation when the number of deaths is relatively low (n<50).

The following table shows mortality rates for stroke per 100,000 of the population from 2003 to 2013;

Fig 128: Mortality rates per 100,000 of the population from 2003 to 2013



Risks

Risk factors for stroke can be divided into two separate groups—modifiable and non-modifiable (or fixed) risks. Individual and potentially reversible behaviours (lifestyle) are an important determinant of stroke and include smoking, unhealthy eating and insufficient physical activity. These modifiable or potentially reversible behaviours account for a large proportion of the risk of stroke.

There are non-modifiable risks for stroke:

- **Age:** The chance of having a stroke approximately doubles for each decade of life after age 55. While stroke is common among the elderly, a lot of people under 65 also have strokes.
- **Family history:** The risk of stroke is greater if a parent, grandparent, sister or brother has had a stroke.
- **Ethnicity:** People from BME communities experience a 60% greater incidence of stroke. People from Black African and Black Caribbean communities are twice as likely to have a stroke as those from White communities¹
- **Sex (gender):** Stroke is more common in men than in women. In most age groups, more men than women will have a stroke in a given year. However, more than half of total stroke deaths occur in women. At all ages, more women than men die of stroke. Use of birth control pills and pregnancy pose special stroke risks for women.
- **Previous medical history:** The risk of stroke for someone who has already had one is many times that of a person who has not. Transient ischemic attacks (TIAs) are "warning strokes" that produce stroke-like symptoms but no lasting damage. TIAs are strong predictors of stroke. A person who's had one or more TIAs is almost 10 times more likely to have a stroke than someone of the same age and sex who hasn't. Recognising and treating TIAs can reduce the risk of a major stroke. If you've had a heart attack, you're at higher risk of having a stroke.
- **People living in deprived areas:** Stroke mortality within Darlington is not evenly distributed; it is higher in more deprived areas than more affluent ones. Reasons for this unequal distribution include socio-economic factors, such as higher rates of unemployment, poorer quality housing, as well as lifestyle factors such as higher rates of smoking, higher rates of excessive drinking and poor diet.

Risks which may be modified are:

- **High blood pressure:** High blood pressure is the most important controllable risk factor for stroke. Many people believe the effective treatment of high blood pressure is a key reason for the accelerated decline in the death rates for stroke.
- **Smoking:** Evidence suggests that smoking approximately doubles the risk of stroke, and is therefore a significant risk factor. A reduction in smoking would be the single most effective way of reducing stroke mortality (and the inequalities seen in stroke mortality rates within Darlington).
- **Diabetes mellitus:** Diabetes is an independent risk factor for stroke. Many people with diabetes also have high blood pressure, high blood cholesterol and are overweight. This increases their risk even more. While diabetes is treatable, the presence of the disease still increases your risk of stroke.
- **Atrial fibrillation:** This heart rhythm disorder raises the risk for stroke. The heart's upper chambers quiver instead of beating effectively, which can let the blood pool and clot. If a

¹ Stewart, J., Dundas, R., et al, C.D.A., "Ethnic Differences in Incidence of Stroke: Prospective study with stroke register", 1999, *BMJ*, Vol 318, No 7, p967–971

clot breaks off, enters the bloodstream and lodges in an artery leading to the brain, a stroke results.

- **Other heart disease:** People with coronary heart disease or heart failure have a higher risk of stroke than those with hearts that work normally. Dilated cardiomyopathy (an enlarged heart), heart valve disease and some types of congenital heart defects also raise the risk of stroke.
- **High blood cholesterol:** People with high blood cholesterol have an increased risk for stroke. Also, it appears that low HDL (“good”) cholesterol is a risk factor for stroke in men, but more data are needed to verify its effect in women.
- **Poor diet:** Diets high in saturated fat, trans-fats and cholesterol can raise blood cholesterol levels. Diets high in sodium (salt) can contribute to increased blood pressure. Diets with excess calories can contribute to obesity. Also, a diet containing five or more servings of fruits and vegetables per day may reduce the risk of stroke.
- **Physical inactivity and obesity:** Being inactive, obese or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease and stroke. So go on a brisk walk, take the stairs, and do whatever you can to make your life more active. Try to get a total of at least 30minutes of physical activity a day.

How to improve for the future

- Improve the early detection of AF by checking the pulse on everyone going through the NHS Health Checks programme and other opportunistic contacts with older people such as the seasonal influenza immunisation.
- Support primary care teams to investigate abnormal heart rhythms, to accurately diagnose AF and carry out a risk assessment for stroke.
- Increase the proportion of patients with AF who have a high risk of stroke to be treated with anticoagulation.
- Provide an early supported discharge service backed up by a specialist stroke rehabilitation service.