Stroke

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Topic owner	*Rachel Sokal*
Topic author(s)	*Ian Bowns*
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Executive summary

Introduction

Stroke is one of the diseases of the arteries – these are known collectively as cardiovascular disease (CVD). A stroke is a type of brain injury which usually occurs without warning, cutting off the blood supply to part of the brain, depriving brain cells of oxygen. Stroke can occur in two ways:

1. Ischaemic stroke – The most common cause of stroke which accounts for 85% of all strokes, caused by the blockage of an artery cutting off the supply of oxygen to parts of the brain (Royal College of Physicians, 2012).

2. Haemorrhagic stroke - caused when a blood vessel in the brain bursts, producing bleeding into the brain which causes damage to the brain cells.

A Transient Ischemic Attack (TIA) or 'mini stroke' is caused by a brief interruption to the blood supply to a particular area of the brain. A TIA does not last as long as a stroke, with effects lasting minutes for hours. The term TIA is defined as having effects lasting less than 24 hours. A TIA is an important warning sign of a more serious stroke, heart attack or other vascular event.

Stroke is the fourth biggest cause of death in England after cancer, heart disease and respiratory disease causing almost 50,000 deaths (British Heart Foundation, BHF,2012) and the largest single cause of severe disability (DH, 2007):

- There are an estimated 152,000 strokes in the UK every year (BHF, 2012).
- Stroke causes a greater range of disabilities than any other condition, of those who survive, approximately:

- 42% will be independent
- 22% will have a mild disability
- 14% will have a moderate disability
- 12% will have a severe disability

(Royal College of Physicians, 2011)

- It is estimated that stroke costs the UK economy around £8.2 billion per year (Stroke Association, 2013)
- Production losses due to mortality and morbidity associated with stroke cost the UK almost £1 billion. The cost of informal care for people with stroke was £1 billion in 2009 (BHF, 2012).
- Stroke costs the health care system in the UK around £1.8 billion; this represents a cost per capita of £29 (BHF 2012).
- Nationally 86.1% of patients admitted with a stroke spent 90% of their time on a stroke unit.
- For TIA nationally 74.5% of those patients with a higher risk of stroke presenting in an outpatient setting were treated within 24 hours.
- The death rate from stroke for men is 2.9 times higher in routine and manual socioeconomic status than in the higher managerial socioeconomic status (BHF, 2012).

This chapter considers the epidemiology, diagnosis and treatment of stroke. Cardiovascular Disease as a whole and lifestyle risk factors are considered in separate chapters: Smoking, Physical Activity, Diet and nutrition, Alcohol, Adult obesity. Also relevant to stroke care, are the chapters on End of Life, and Carers.

Unmet need and gaps

In addition to the eight priority areas identified within the 2010 Nottingham City Stroke Strategy (see Recommendations for consideration by commissioners) local data analysis has identified the following priority issues for Nottingham City:

- Nottingham's mortality rates from stroke have fallen and the male death rate is now similar to females and both rates are similar to the England averages. Admission rates are now also similar to the England average and our ONS cluster group (Cardiovascular Disease profiles, PHE).
- It appears services may be under-utilised by people from Asian and African-Caribbean groups.
- In 2015/16, 74,834 people were eligible (not already diagnosed as having a cardiovascular condition and aged 40-74 years) for a Health Check. The Health Check programme aims to invite all of those eligible over a five-year period. Two years into the programme, 25,196 people (33.7%) had been invited to take part, short of the intended 40%. Of those invited, 12,412 (49.3% of those invited and just over 16.6% of the entire eligible population) took up the invitation (NHS Health Check, 2015/16, PHE http://fingertips.phe.org.uk/profile/nhs-health-check-detailed/data#page/1/gid/1938132726/pat/6/par/E12000004/ati/102/are/E06000018).

The Care Quality Commission (CQC) national review of services for people who have had a stroke and their carers published in January 2011, identified the following priority areas for development:

- Provision of services for carers;
- The provision of information for stroke patients and their carers;
- Secondary prevention.

Recommendations for consideration by commissioners

Key strategic issues the CCG should consider are:

1. Support practices to increase the detection, diagnosis and effective treatment of high blood pressure and atrial fibrillation in the community, to prevent cardiovascular and other disease generally, and stroke in particular.

2. There appears to be a case for increased access to atrial ablation procedures for the population of Derbyshire and Nottinghamshire.

3. Continuous improvement of the management of transient ischaemic attack and acute stroke to improve outcomes for patients.

4. The provision of rehabilitation services for all patients with residual problems following stroke. Particular current issues are: access to psychological support for patients and carers, speech and language therapy, and the rehabilitation of complex stroke cases.

5. Pending the completion of the research, consider making use of the findings of the Interim Report Increasing the uptake of primary and community long-term conditions services in Black and Minority Ethnic (BME) communities in Nottingham - an exploratory research study, to improve access to long-term conditions services for people from BME communities.

6. Implement the recommendations of NICE IPG548 on mechanical clot retrieval in acute stroke.

7. Providers should make a full contribution to the Sentinel Stroke National Audit Programme.

8. Providers of care should record the ethnicity more completely and systematically so that equity of access to services can be assessed robustly.

What do we know?

1) Who is at risk and why?

The following risk factors are recognised for stroke and TIA:

Modifiable risk factors for stroke

- Hypertension is one of the most important risk factors for stroke because it weakens the artery walls contributing to about 50% of all strokes (Lancet, 2008).
- Atrial Fibrillation is a significant risk factor for stroke. People with atrial fibrillation have a five-fold greater risk of stroke and thromboembolism (NICE, 2006).
- People with diabetes are two times more likely to die from a stroke (BHF, 2012)
- Smoking: A person who smokes 20 cigarettes a day has six times the risk of stroke compared with a non-smoker (BHF, 2012). 24.2% of patients with a long term condition in Nottingham City are estimated to smoke. This is significantly higher than the rate in England (17.5%) and significantly higher than the rate in Centres with Industry (21.0%). Cardiovascular Disease Health Profile 10/11 – Nottingham City, SEPHO, 2012).
- Alcohol: People who regularly consume a large amount of alcohol have a three-fold increased risk of stroke (BHF, 2012)
- Cholesterol: high cholesterol contributes to the development of atherosclerosis, which increases the risk of stroke (BHF, 2012).
- A recent study based on Scottish primary-care records suggested that many patients with a history of either stroke or TIA also had other long-term conditions: high blood pressure (61%), coronary heart disease (29%), a painful condition (22%), depression (21%), diabetes (19%), atrial fibrillation (13%), COPD (13%) and heart failure (8%). Only 6% only had stroke/TIA (Barnett et al, 2012).
- Other risk factors include obesity, low levels of physical activity and a diet high in salt and saturated fat, as they all contribute to the development of high blood pressure and atherosclerosis (BHF, 2009).

Fixed risk factors for stroke

- Age: risk increases with age – 75% of strokes occur in people over 65 years (DH, 2007)
- Those with a family history of stroke are more likely to have a stroke than the average population (Stroke Association, 2009).
- Ethnicity: People from Asian, African and African-Caribbean communities are more likely to have a stroke than other ethnic groups (Stroke Association, 2013). For example, men born in Bangladesh have a stroke mortality rate three times higher than those born in England or Wales (BHF, 2012)
- 10–20% of those who have had a TIA will go on to have a stroke within a month. The greatest risk is within the first 72 hours. The risk of a recurrent stroke is 30–43% within five years. (Stroke Association, 2013).

The varied risk factors for stroke do not combine in a simple way, so that the risk for an individual with more than one risk factor (e.g. smoking and high blood pressure) is often greater than might be expected from the risk posed by each individual factor. Consequently, the possible benefits for an individual from changing modifiable risk factors can be greater than expected.

2) Size of the issue locally

In Nottingham City these identified risk factors can be reflected as follows:

- Hypertension: In 2014/15, 90.29% of those aged 45 and registered with City practices had a comparatively recent (within 5 years) blood pressure measurement recorded (QOF, 2014/15, indicator BP002). There are approximately 37,714 people diagnosed with high blood pressure in Nottingham, of which almost 20% are not well-controlled (BP 150/90 or greater in last 12 months, QOF, 2014/15, indicator HYP006). The observed prevalence for hypertension in Nottingham City (10.5%) is 50% of the estimated prevalence (SEPHO, 2012). Diagnosis of hypertension is low compared with neighbouring CCGs, CCGs with similar populations and the national average (NCVIN, Cardiovascular Disease, PHE 2015). Effective treatment is slightly below neighbouring CCGs, CCGs with similar populations and the national average. Both offer considerable opportunities to improve detection and management of high blood pressure, which will reduce or delay future strokes and other serious cardiovascular disease. The Sentinel Stroke National Audit Programme (SSNAP) found that 44.4% of acute stroke patients had high blood pressure before admission (compared with 54.4% national average). This may reflect the younger age profile of stroke patients in the City (SSNAP, 2015).
- Atrial Fibrillation: In 2013/14, there were 3,693 people (just over 1% of the population) in Nottingham diagnosed with atrial fibrillation (AF). This was 63% of the estimated number of people with AF, which is low compared with neighbouring CCGs and CCGs with similar populations (NCVIN, Cardiovascular Disease Profiles, PHE 2015). In 2014/15, this has increased to 3,861 (almost 1.1% of the population). Among the 2,078 people with AF who are at highest risk of stroke (CHAD-VASc score of 1 or greater), some 65.9% are being treated with anticoagulants (comparatively low), 18.7% have a reason not to be treated, leaving 15.4% untreated despite no recorded reason (QOF 2014/15, indicators AF004 and AF005). It has been estimated that if anti-coagulation therapy (warfarin or other, newer drugs) was given to all patients over 65 with atrial fibrillation, 7 male and 12 female stroke deaths could be averted each year (DH, 2009). The Sentinel Stroke National Audit Programme (SSNAP) found that 17.5% of acute stroke patients had AF before admission (compared with 20.4% national average). This may reflect the younger age profile of stroke patients in the City (SSNAP, 2015).
- Diabetes: Nottingham City CCG recently commissioned an audit of the care of patients with diabetes. This identified 16,194 people in Nottingham whose GP records show they have a diabetes diagnosis (Diabetes UK, 2015). The Sentinel Stroke National Audit Programme (SSNAP) found that 19% of acute stroke patients had diabetes (compared with 20.6% national average). This probably reflects the younger age profile of stroke patients in the City (SSNAP, 2015).
- Smoking: In Nottingham, approximately 27% of people are current smokers; however prevalence is lower among those over 65. Smoking rates were significantly higher for men (29.6%) compared to women (25%) (Nottingham Citizens Survey, 2012-2014 pooled. Some 23.1% of patients with a long term condition in Nottingham City are estimated to smoke. This is significantly higher than the rate in England (16.6%; QoF, 2013/14).

- The prevalence of CHD recorded in Nottingham City practices (2.7%) is significantly less that the national average (3.34%) and that of the Centres with Industry comparator areas (3.2%). (NCVIN, Cardiovascular Disease Profiles, PHE 2015).
- Ethnicity: Nottingham has a higher than average population of people from Asian and African-Caribbean groups, which have a higher risk of stroke, although these tend to be within the younger age groups (see Demography chapter)

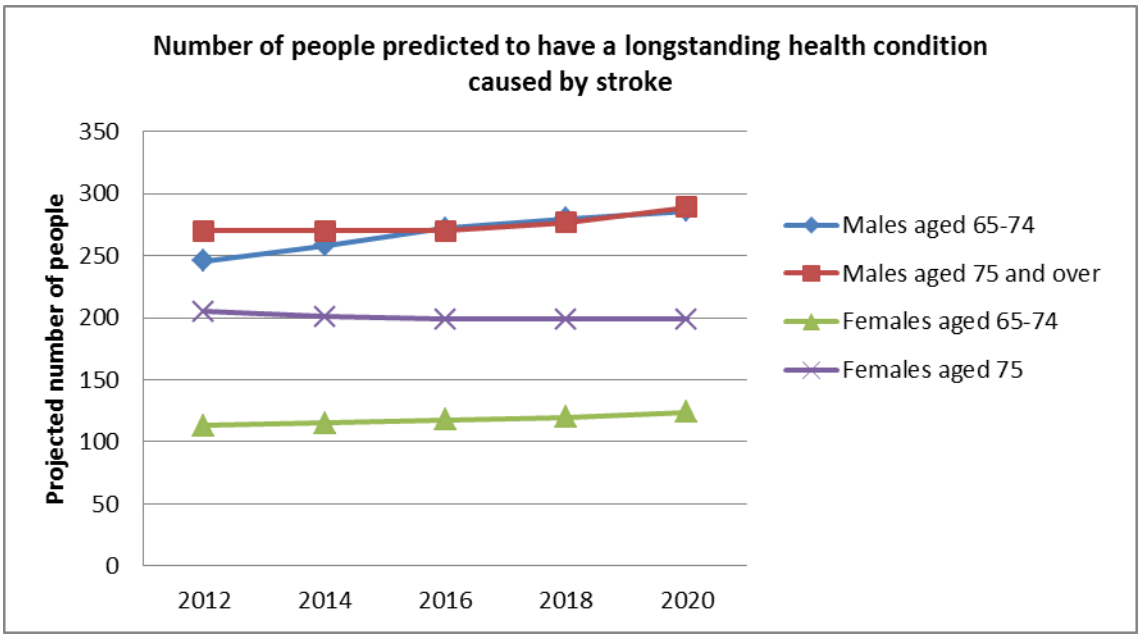
Prevalence of stroke/TIA

- There are 4,818 people diagnosed with stroke or TIA in Nottingham, which is 1.4%, compared with 1.7% nationally and 1.9% for comparator CCGs (QOF, 2013/14). The number had only increased slightly in 2014/15 to 4,879 (QOF, 2014/15).
- The observed prevalence for stroke in Nottingham City is 78% of the estimated prevalence. This compares to an average of 85% for England (NCVIN, Cardiovascular Disease Profiles, PHE 2015).
- In 2013/14 the admission rate for stroke in Nottingham City was 172.3 per 100,000 (354 admissions). This is similar to England (174.3 per 100,000; NCVIN, Cardiovascular Disease Profiles, PHE 2015).
- It is estimated that the actual prevalence of stroke/TIA is 1.8%, which suggests there are an additional 1,359 people who have had a stroke, but are not on primary care registers. This compares with an average estimated prevalence for England of 2.0%. (NCVIN, Cardiovascular Disease Profiles, PHE 2015).
- It appears that people from Black and Minority Ethnic groups may not be accessing specialist services. Analysis of admission from April 2011 to March 2014 found that age/sex standardised admission rates for the Asian/British Asian population were similar to those for the White British population, though we might expect them to be higher. For the Black/Black British population, rates were lower than for the other two large populations, when again they would be expected to be higher, based on what is known about stroke risk and incidence in different ethnic groups. However, a similar number of patients (91) did not have their ethnicity recorded to those who were recorded as being Black/Black British (80) or Asian/British Asian (116). This group could include a disproportionate number of people from ethnic minority populations and might reduce the accuracy of the figures.
- Atrial fibrillation is a known risk factor for stroke. The diagnosed prevalence in this CCG is 1.0% and the estimated prevalence is 1.7%. There could be an additional 2,300 people with undiagnosed atrial fibrillation in the CCG.
- The estimated prevalence of stroke in Nottingham City is projected to remain fairly stable at 2.57% between 2010 and 2020, however this will result in an increase in the actual number of people from approximately 6693 to 7249 due to population increases. Nationally, there is a projected increase from 2.5% to 2.7% between 2010 and 2020 (ERPHO, 2008).

However, the number of people living with a longstanding health condition caused by stroke is projected to steadily increase in both men and women across Nottingham between 2010 and 2020 (Figure 1).

Primary prevention work such as the NHS Health Checks and CVD prevention programme should help to reduce the prevalence.

Figure 1 – Projected increase in people who have had a stroke in Nottingham (POPPI)



- As more patients survive for longer, there will be increased demand for community support services.
- In particular, interventions should be targeted towards males.

3) Targets and performance

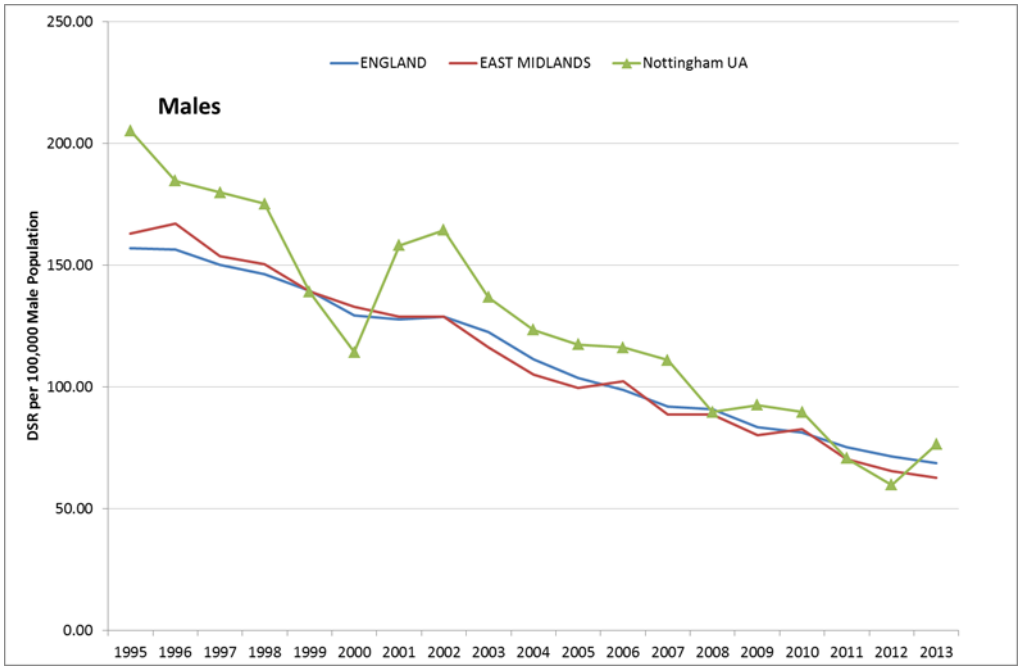
Mortality

- In 2013 the All Circulatory Disease mortality rate in Nottingham City for persons under 75 years was 107.5 per 100,000, a decrease of 52% since 1995. *The former CVD target was set to reduce mortality rates from all CVD by 2009-11 by at least 40% in people under 75 years from a 1995/97 baseline. This target has already been met in England and in the Centres with Industry region and has been met in Nottingham City. The target ended in June 2010 (SEPHO, 2012)*
- Nationally, the directly age-standardised rate of stroke deaths in men is significantly higher than that in women. In Nottingham, the rate for males is also higher than for females but the difference is not statistically significant (2011-2013 pooled data). Due to population differences (women outnumber men in the older age groups), a higher number of women die from the disease.
- Nottingham's male stroke death rate has fallen steadily since 2002 closing the gap between the city and England (Figure 2a).
- The stroke death rate for Nottingham females fluctuates from year to year but is close to or lower than the England average (Figure 2b).

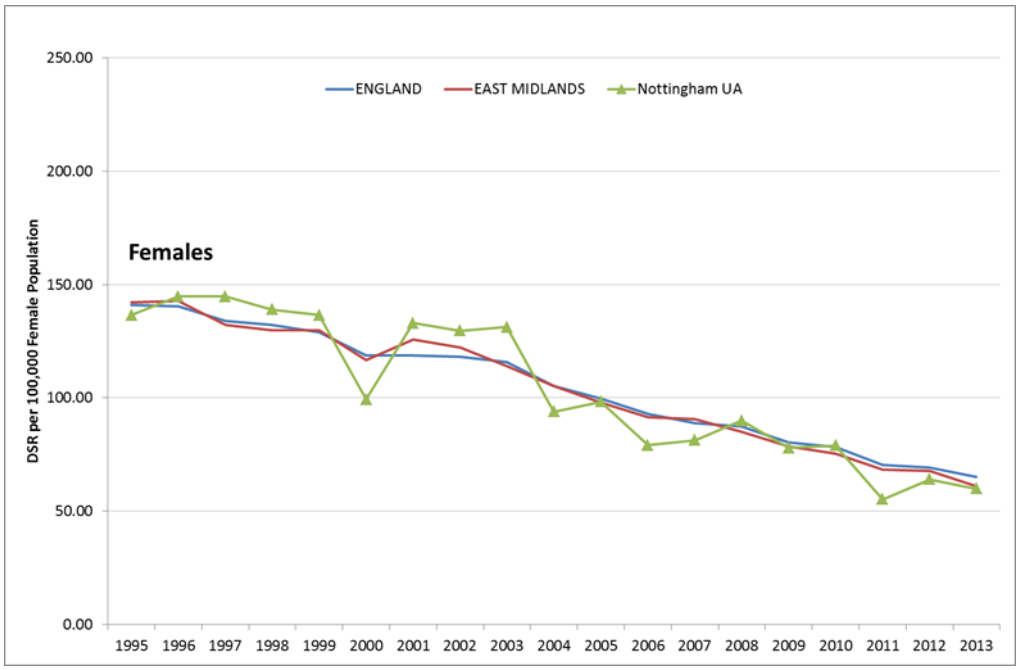
Figure 2 – Directly age-standardised stroke death rates for males (a) and females (b) in Nottingham, compared with the East Midlands and England average

(Source: HSCIC Indicator portal, 2015)

a) *Male death rate from stroke*



b) Female death rate from stroke



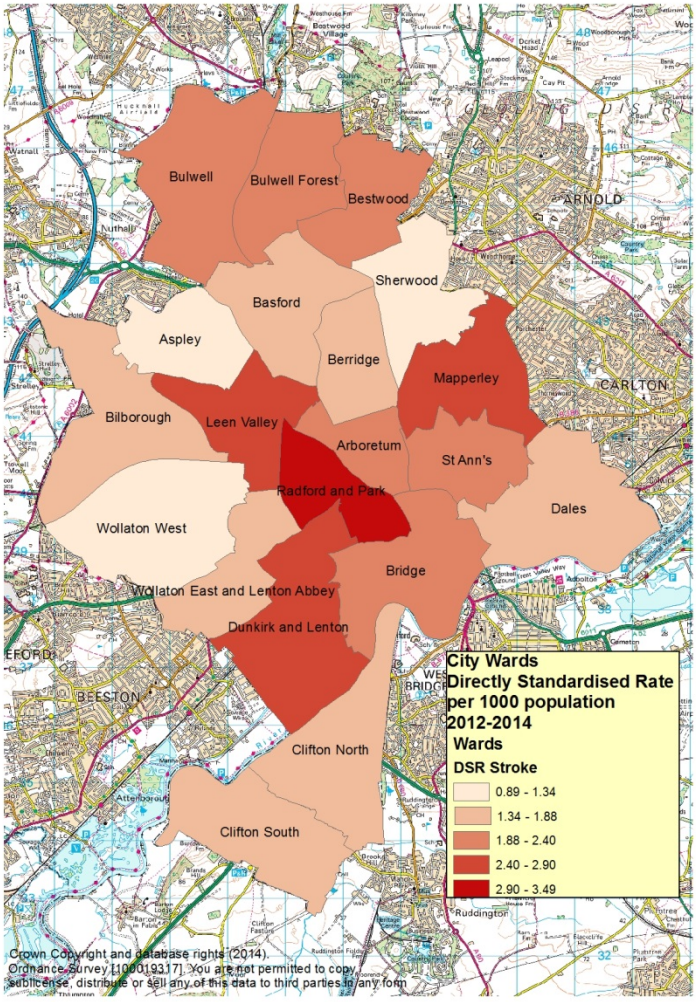
Early mortality rates (under 75 years of age) for stroke in NHS Nottingham City CCG were 21.7 per 100,000 people. This was significantly higher than the England rate (13.7 per 100,000).

Later mortality (over 75 years of age) rates from stroke in NHS Nottingham City CCG were 528.5 per 100,000 people. This was slightly lower than the England rate (601.8 per 100,000).

The forecast decrease in the mortality rate for stroke between 1996 and 2012 for Nottingham City is 58.4% for males and 52.3% for females. For England, the forecast decrease is 55.3% and 50.2% for males and females and for Centres with Industry it is 53.1% and 49.8% respectively.

The death rate from stroke varies between wards across Nottingham (Figure 3)

Figure 3 – Directly age-standardised rate of stroke mortality per 1000, all ages, 2012-2014, for Nottingham City wards (Source: Public Health Mortality File)



Management of stroke risk

- From QOF 2013/14 figures, of those people diagnosed with stroke:
- 10% have uncontrolled high blood pressure (BP > 150/90 mmHg)
- 26% have high cholesterol (total cholesterol > 5 mmol/L)
- 96% of those deemed suitable for anti-platelet or anti-coagulant therapy have been prescribed medication (e.g. aspirin or warfarin or other, newer drugs).

Sentinel Audit

The National Clinical Sentinel Audit evaluates acute stroke care against a range of indicators across every PCT and Acute Trust in the country every two years. The process involves two data collections namely; organisation of care and the clinical and process of care. The results for the first quarter of 2015/16 (April-June 2015) clinical audit for NHS Nottingham City with Nottingham University Hospitals NHS Trust showed that local stroke patients tend to be younger than average, with fewer, known previous risk factors (hypertension, diabetes and AF). Although the number of cases identified are lower than expected (between 50-65% of expected numbers) a high proportion are treated in a stroke unit. Selected available indicators for NUH as provider against national compliance are shown below:

Indicator	**Average % compliance (national)**	**Nottingham % of audit (Q1, 2015)**
Admitted to stroke unit	59.3	72.6
Receive thrombolysis	11.4	14.3
Percentage of eligible patients receiving thrombolysis	83.5	100

Temporary staffing problems impaired the quality of data collected in Q1 of 2015. Based on the reported results the standards of stroke care at NUH were assessed to be within the third quartile of stroke care nationally, having been in the second quartile recently. A fuller assessment can be made on the next report, which should have more complete data.

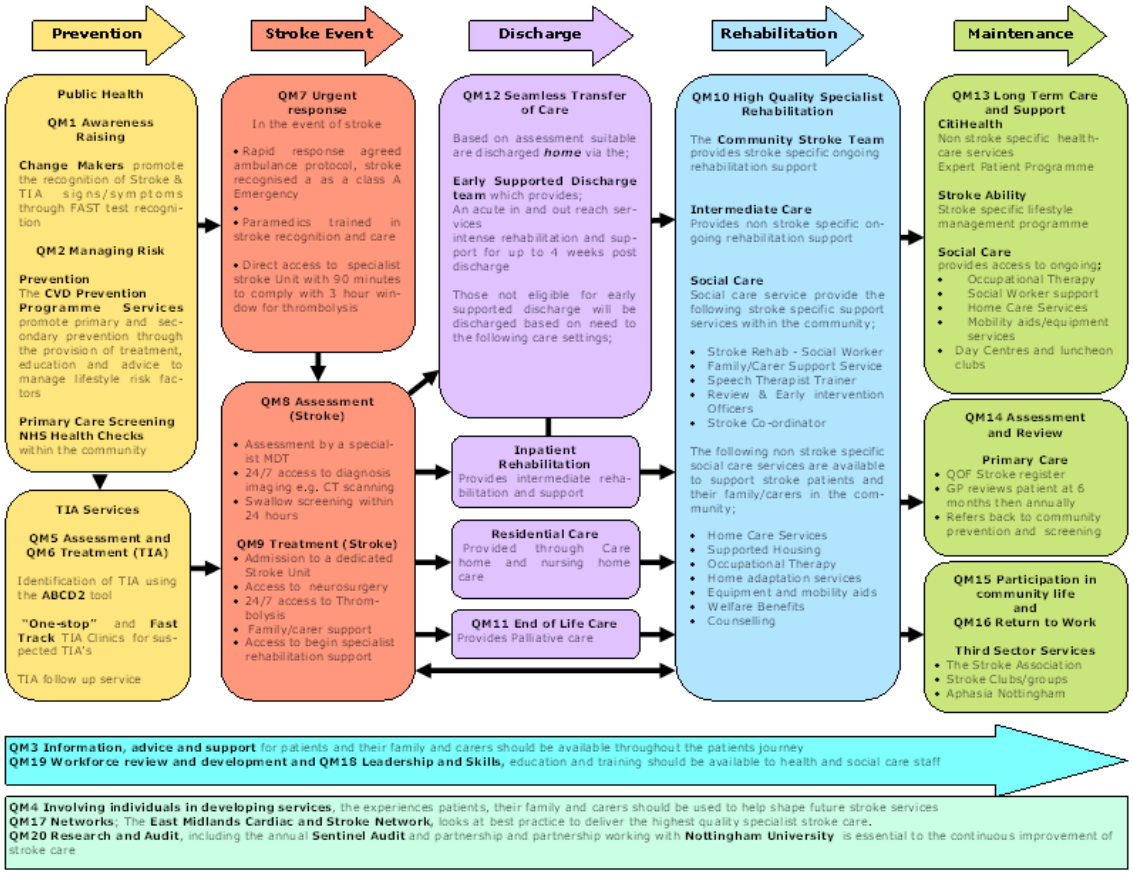
Previously identified issues relate to:

- speed of CT scan, which has taken longer than the national average
- % time spent on stroke unit
- Swallowing screen (now at national average levels)
- Physiotherapy assessment
- OT assessment
- Mood assessment

4) Current activity, service provision and assets

In May 2010, NHS Nottingham City and Nottingham City Council published their joint Strategy for Stroke Services. This was developed by a range of stakeholders from extensive review of current services, unmet needs and evidence for effective stroke prevention and care. The vision for stroke care in Nottingham City is to reduce the incidence of TIA and stroke; ensuring that when a stroke or TIA does occur patients have timely assessment and treatment in an appropriate setting, by competent and trained clinicians who link seamlessly with the community teams in order to provide comprehensive, local, personalised care packages to both patient and carer in line with the Nottingham stroke and TIA pathway illustrated below.

The following services have been mapped against the strategy's stroke pathway to illustrate the stroke patient / carer journey.



Awareness Raising and Prevention

Across Nottingham City a range of services exist to support the prevention and early identification of cardiovascular disease, targeted towards priority areas and population groups who have the most need including stroke. These services include:

Adult Healthy Living Referral - A range of community-based services which support behavioural change to reduce lifestyle risk factors including stopping smoking, increasing physical activity, improving diet, and reducing obesity.

NHS Health Checks - A national service for cardiovascular risk assessment. In Nottingham this service was initially launched as the Happy Hearts pilot service in 2008, and is now provided through a GP Local Enhanced Service.

Change Makers for Heart Health - A community development approach which has built on an initial Healthy Communities Collaborative project. A team of volunteers from our CVD priority areas work to raise awareness of lifestyle risk factors, signs and symptoms, and signpost to support service for lifestyle changes. The volunteers promote early presentation to primary care and therefore support early diagnosis and treatment. Over the two years, teams have increased their focus on stroke and supported national awareness campaigns such as FAST.

For more details on each of these services, see the Cardiovascular Disease chapter.

Atrial Ablation

The standard treatment for atrial fibrillation has been to use drugs to slow down the patient's heart rate, so that it pumps effectively and enables them to be as active as possible, and to use anticoagulant drugs to reduce considerable the risk the blood clots caused by the AF lead to TIAs and strokes. A newer alternative is to remove or destroy very small areas of the heart that are causing the AF. This is called atrial ablation, and can be carried out using catheters introduced into the circulation via an artery in the groin, or by a more traditional operation on the chest. The procedure is now established and practice has been the subject of a national register of procedures for the last ten years, with the latest data being for 2013/14 (NICOR< 2015). Nationally, procedures have increased between 2007 and 2010, but remaining relatively steady since then. Other trends are that an increasing proportion of these procedures are for AF (now the single most common reason) and have become more complex. Research suggests, however, that more complex procedures are more likely to offer relief from the AF for several years in most patients.

This service is deemed "specialist" and is not commissioned by the Nottingham City CCG, but by NHS England's Local Area Team for Derbyshire and Nottinghamshire. Consequently, national figures are analysed by local area team (LAT).

Data quality remains a problem (though it appears good for NUH), but the audit suggests that:

- Nationally, some 17,106 procedures were carried out in 2013.
- Atrial ablation is carried out less frequently in the UK than in most Western European countries.
- Some 386 ablations were carried out on residents of Derbyshire and Nottinghamshire, the equivalent of 197/million population. Many other areas carried out more than 3-400/million population.
- In 2013, 106 ablations were carried out on residents of Derbyshire and Nottinghamshire for AF.

The original register has been replaced with a more extensive data set from 2014, which will include patient reported outcomes (PROMs).

There appears to be a case for increased to atrial ablation procedures for the population of Derbyshire and Nottinghamshire.

TIA Services

NHS Nottingham City has developed a TIA specific pathway which emphasises the need to treat TIA as a medical emergency. EMAS staff are trained to assess anyone displaying signs and symptoms of TIA against the ABCD2 scale to determine their level of risk before initiating a direct referral into the specialist TIA clinic based within the Stroke Unit of Nottingham University Hospitals NHS Trust (NUH).

Since the last edition of this JSNA chapter (2013) the TIA clinic service provided by NUH has been extended from 5 to 7 days with patients admitted during the out of hour's period. This now meets the requirements of the national Stroke Strategy.

The management of TIA patients referred to the service is governed by stringent indictors identified within the national Stroke Strategy, which include at high risk TIAs to be investigated and treatment initiated within 24 hours of presentation and are incentivise through the national best practice tariff to be implemented from April 2011.

As part of the best practice tariff for TIA to be introduced from April 2011 NUH will offer all TIA positive patients a follow up appointment at 4 weeks post discharge. Follow up will include a medication review and will promote referral to lifestyle management services to support long term prevention.

NHS Nottingham City now has a referral pathway into the Cardiac Rehabilitation service for stroke patients, providing continued access to life style management and advice. Further details on the latest national audit of cardiac rehabilitation services are in the chapter on CVD.

Acute Stroke Care

NUH Nottingham City's acute stroke provider was awarded regional comprehensive status as part of the 2010 East Midlands Stroke and Cardiac Network exercise to develop a hyper acute Stroke Centre of the East Midlands. There is a hyper acute status, and 24/7 access to thrombolysis and telemedicine.

Community Stroke Discharge and Rehabilitation Services

Nottingham CityCare Partnership is responsible for the provision of the integrated Community Stroke Discharge and Rehabilitation Service, which includes provision of the following service elements:

Early Supported Discharge Team

The multidisciplinary team (Physiotherapists, Occupational therapists, Nurses, Mental health Nurse, Speech and Language Therapist, Stroke Rehabilitation Community Care Officers, and support workers) has been established to help and support stroke patients immediately after their discharge from hospital. The team provides intensive support for up to 7 days a week, for four to six weeks after discharge. The team facilitate and early discharge and ensure specialist rehabilitation continues at home to optimise the person's independence and function. The rehabilitation is carried out in either the patient's home or residential home.

Community Stroke Team – This multi-disciplinary team provides longer-term community rehabilitation services for stroke survivors, either following a period of supported discharge or for stroke survivors in the community for up to two years post-stroke. All people seen by the Community Stroke Team are required to have been through the 'Stroke Pathway'. They can then be referred by their GP, other health care staff, or self-referral.

StrokeAbility – A community education programme for people who have had a stroke, which incorporates exercise, health education, secondary prevention advice and relaxation, over a 12 week period. The programme is delivered by health professionals, and involves input from a variety of other services, and voluntary and third-sector organisations.

Care Home Education – Following an initial three-year contract, this service has now been commissioned as part of the community service for stroke to provide a rolling programme of education to care home staff. The programme will educate care staff about what a stroke is, signs and symptoms of stroke, risk factors, primary and secondary prevention, the effects of stroke, and how to support residents following a stroke.

Stroke Review and Early Intervention Officers – Following a Reviewing Officer pilot, initially funded by a grant following publication of the national Stroke Strategy, this service has been commissioned recurrently to undertake 6 and 12 month reviews for all Nottingham City patients discharged from hospital as required by the Stroke Strategy Quality Marker 14. The review includes a holistic assessment of stroke survivors' on-going or unmet health, psychological and social care needs, and provides signposting information for relevant services.

From January 2013 all referrals are made through the Nottingham Health and Care Point.

The following support services are also available to stroke patients and their families/carers in Nottingham City:

Family Carer Scheme - A joint project between Nottingham City Council, Nottinghamshire County Council and the Nottingham CCGs. The service became operational in January 2010. The overall purpose of the service is to provide information, emotional support and advice to people affected by stroke, their families and carers working alongside a multi-disciplinary team of professionals. The service will also have a focus on supporting families and carers from Black Minority Ethnic communities, meeting and addressing the cultural issues that affect these groups. From October 2013 there will be a new carers' hub providing advice, support and signposting for all carers.

Long Meadow Day Centre

Stroke survivors can attend the Day Centre each week between 2 and 4 times a week (depending on their need), for specialist support. In addition to Day Care services the Long Meadow Stroke Group meets fortnightly, providing much needed support both for the person with the stroke and their carers.

Key concerns expressed by the Stroke Team within CityCare are:

- A lack of commissioned rehabilitation in community settings for the most seriously affected stroke survivors, who cannot easily access services at NUH;
- A recent fall in referrals, which is thought to follow from falling admissions for acute stroke at NUH;
- Difficulties obtaining a timely response form social care;
- Ensuring that any modifications to the tariff structure, such as 'unbundling' the tariff into its components, adequately meets the costs of each element;
- Communication support, where additional speech and language therapist (SALT) time is a perceived need;
- Psychological support – although psychological support is provided, this is mainly provided by a nurse specialist and not by a clinical psychologist. Although the local view is that this is appropriate for most cases, only support provided by a clinical psychologist is recognised in the national audit (SSNAP). There are, however, some local concerns that access to a clinical psychologist for more severe or complex cases is currently limited. The CCG commissions psychological support for patients with any long-term condition from the mental health trust, although access may be problematic for patients with mobility problems.

Until March 2016, the Nottingham City CCG and Nottingham City Council had jointly commissioned an Information, Advice and Support Service from the Stroke Association. This was decommissioned, based on the commissioners' judgement that the ESD service provides such support to patients and carers and that there are alternative sources of information, such as the National Helpline of the Stroke Association.

5) Evidence of what works

The key evidence on effective prevention, treatment and rehabilitation form stroke is contained and summarised in the following publications:

- The National Stroke Strategy (2007), Department of Health, presents 20 quality markers outlining the features of a good service.
- National Service Framework for Older People, Standard five, (2001) Department of Health
- National Service Framework for Limiting Long Term Conditions (2004) Department of Health.
- NICE CG34 (2006) – Management of hypertension in adults in primary care
- NICE CG36 (2006) – Management of atrial fibrillation
- NICE Guidance (CG 67) 2008 – Lipid modification and risk assessment
- NICE CG180 (2014) and NICE TA275 (2013) – this guidance outlines in detail the management of patients with atrial fibrillation (permanent or intermittent/paroxysmal), and supports the option of using novel oral anticoagulant drugs (NOACs) as an alternative to Warfarin in certain circumstances.
- NICE CG162 (2013) – contains evidence-based advice on the rehabilitation of adult survivors of a stroke.
- NICE IPG548 (2016) – supports the routine use of mechanical clot retrieval in appropriately selected cases of ischaemic stroke. Treatment is most effective if undertaken within 8 hours on onset of the stroke.

6) What is on the horizon?

There are on-going developments involving several approaches to the treatment of acute stroke:

- Dissolving the clots that cause many strokes by injecting drugs into the affected artery.
- Opening narrowed arteries and/or removing clots from larger arteries.
- Blocking blood vessels that have ruptured, causing a stroke by bleeding into the brain.
- The use of drugs intended to protect the brain from the damage caused by the stroke (neuro-protective drugs).
- The use of stem cells to assist recovery following stroke.

Research continues on all of these areas, to improve the techniques and determine which patients might benefit most from these treatments. Implementation will take time, as they all require skilled staff and a technical infrastructure. NICE are keeping these areas under review, with some guidance due early in 2016.

7) Local Views

National user views

Global Stroke Survey

Results were presented in March 2007 from this survey which interviewed 2,263 stroke patients from France, Germany, Italy, Spain, Sweden, Australia, China, Canada the USA and Great Britain.

It concluded that more education is needed to raise the profile of the risk factors associated with stroke and to help people to identify the signs and symptoms to prevent the debilitating consequences of stroke - less than half of those interviewed contacted the emergency services once they had noticed the signs and symptoms of the stroke. The survey also identified the need for psychological support for stroke survivors - two in three said that they felt depressed as a result of their stroke and just under a third reported experiencing depression several times a month.

Local user views

Stroke Association

The local Stroke Association identified their key local priorities as:

- Follow-up of stroke survivors six months after their stroke (six-month reviews);
- Communication support (i.e. SALT input);
- Improving support for family and other informal carers;
- Improving reablement services.

As part of the local patient and public agenda NHS Nottingham City has also been involved in a number of activities aimed at increasing public awareness of stroke and learning from patient experience.

Carers Support Service

This service brings carers together to provide support and will be replaced by the carers' hub.

Increasing the uptake of primary and community long-term conditions services in Black and Minority Ethnic (BME) communities in Nottingham - an exploratory research study - Interim Report

This, interim report of on-going research commissioned by the City's CCG, has reviewed previously published research and identified a number of potential barriers to uptake by minority ethnic groups and also likely enablers of improved access. Enablers were categorised as:

- Use of evidence
- Communication and trust
- Culturally-adapted interventions/training
- Community links
- Finance
- Family support and social networks
- Patient involvement

What does this tell us?

8) Unmet needs and service gaps

Eight priority areas were identified in the 2010 Nottingham City Stroke Strategy. This updated JSNA chapter suggests:

- Admissions to hospital for stroke or TIA are no longer higher than the England average, and remain similar to our comparator PCTs (Office of National Statistics cluster).
- Nottingham's mortality rate from strokes for males and females are very similar, and similar to the England average, having previously been above the average.
- It appears services may be under-utilised by people from Asian and African-Caribbean groups.

The Care Quality Commission (CQC) review of services for people who have had a stroke and their carers published in January 2011, identified the following priority areas for development:

- Provision of services for carers;
- The provision of information for stroke patients and their carers;
- Secondary prevention.

In addition, this JSNA indicates that there is considerable potential to further reduce the burden of cardiovascular and other disease, and most particularly stroke, by increasing the detection of those with undiagnosed risk factors, especially high blood pressure and atrial fibrillation. Although the CCG has implemented recent initiatives on AF, there have not been similar interventions/initiatives to detect unrecognised high blood pressure. There is considerable potential to cost-effectively improve outcomes by doing so.

9) Knowledge gaps

There are indications that BME populations may not access preventative and acute treatment services as frequently as we might expect from our knowledge of the distribution of risk factors across the population. More compete recording of ethnic origin of patients would improve our ability to assess fully the scale of this challenge and develop services that are more accessible to all groups in the City.

The main providers of healthcare for stroke patients in the City are not currently contributing full, high-quality data for the national audit of stroke care (SSNAP). The commissioners must hold them to account to redress this at the earliest opportunity.

What should we do next?

10) Recommendations for consideration by commissioners

Key strategic issues the CCG should consider are:

1. Support practices to increase the detection, diagnosis and effective treatment of high blood pressure and atrial fibrillation in the community, to prevent cardiovascular and other disease generally, and stroke in particular.
2. There appears to be a case for increased access to atrial ablation procedures for the population of Derbyshire and Nottinghamshire.
3. Continuous improvement of the management of transient ischaemic attack and acute stroke to improve outcomes for patients.
4. The provision of rehabilitation services for all patients with residual problems following stroke. Particular current issues are: access to psychological support for patients and carers, speech and language therapy, and the rehabilitation of complex stroke cases.
5. Pending the completion of the research, consider making use of the findings of the Interim Report *Increasing the uptake of primary and community long-term conditions services in Black and Minority Ethnic (BME) communities in Nottingham - an exploratory research study,* to improve access to long-term conditions services for people from BME communities.
6. Implement the recommendations of NICE IPG548 on mechanical clot retrieval in acute stroke.
7. Providers should make a full contribution to the Sentinel Stroke National Audit Programme.
8. Providers of care should record the ethnicity more completely and systematically so that equity of access to services can be assessed robustly.

Key contacts

Rachel Sokal, Consultant in Public Health, Nottingham City Council,
Rachel.Sokal@nottinghamcity.gov.uk

Hazel Wigginton, Assistant Director of Community Services and Integration, Nottingham City CCG, Hazel.Wigginton@nottinghamcity.nhs.uk

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