State of the nation

Stroke statistics
January 2017

Together we can conquer stroke
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Glossary

- **Ischaemic stroke:**
  A stroke caused by a clot.

- **Haemorrhagic stroke:**
  A stroke caused by a bleed.

- **Transient ischaemic attack (TIA):**
  Sometimes referred to as a ‘mini-stroke’ or ‘warning stroke’ – an event is defined as a TIA if the symptoms resolve within 24 hours.

- **Incidence:**
  The number of stroke occurrences.

- **Prevalence:**
  The number of living stroke survivors.

- **Mortality:**
  The number of deaths caused by stroke.

- **Aphasia:**
  Aphasia is a complex disorder of language and communication caused by damage to the language centres of the brain. People with aphasia may have difficulty speaking, reading, writing or understanding language.

- **Speech and language therapy (SALT):**
  Speech and language therapy provides treatment, support and care for people who have difficulties with communication, or with eating, drinking and swallowing.

- **Daily living activities:**
  Everyday activities generally involving functional mobility and personal care, such as bathing, dressing, going to the toilet and meal preparation.

- **Onset:**
  When the symptoms of stroke first started. Also referred to medically as ‘ictus’.

- **Thrombolysis:**
  A clot-busting treatment to dissolve the clot and restore blood flow. Also referred to as ‘rt-PA’ and ‘alteplase’.

- **Door to needle:**
  The time it takes from admission to hospital (door) to administering thrombolysis treatment (needle).

- **Thrombectomy:**
  A mechanical clot retrieval procedure that pulls the blood clot out of the brain.

- **Early supported discharge (ESD):**
  Designed for stroke survivors with mild to moderate disability who can be discharged home from hospital sooner to receive the necessary therapy at home.
Key statistics

- There are more than **100,000 strokes** in the UK each year; that is around one stroke every five minutes.
- There are over **1.2 million stroke survivors** in the UK.
- Every **two seconds**, someone in the world will have a **stroke**.
- Stroke is the **fourth single leading cause of death** in the UK.
- There are over **400 childhood strokes** a year in the UK.
- Black people are **twice** as likely to have a **stroke** compared to white people.
- Stroke is a leading cause of disability in the UK – **almost two thirds of stroke survivors** leave hospital with a **disability**.
- More than **8 out of 10 people** in the UK who are **eligible** for the **emergency clot-busting treatment thrombolysis** receive it.
- Only **3 out of 10 stroke survivors** who need a **six month assessment** of their health and social care needs receive one.
- The **NHS and social care costs of stroke** are around **£1.7 billion** a year in England.
What is stroke?
There are two main types of stroke – ischaemic (due to a blocked blood vessel in the brain) and haemorrhagic (due to bleeding in the brain).

About 85% of all strokes are ischaemic and 15% haemorrhagic\(^1\)

**Ischaemic strokes** are caused by a blockage cutting off the blood supply to the brain. This can cause damage to brain cells.

**Haemorrhagic strokes** are caused when a blood vessel bursts within or on the surface of the brain. Haemorrhagic strokes are generally more severe and are associated with a considerably higher risk of dying within three months and beyond, when compared to ischaemic strokes.\(^2\)

- 10-15% of people with subarachnoid haemorrhage die before reaching hospital.\(^1\) Subarachnoid haemorrhage is an uncommon type of stroke caused by bleeding on the surface of the brain.

**Haemorrhagic stroke research**

As part of our five-year research strategy we made a commitment to work with others to achieve a clear vision about the future priorities for stroke research. We want to ensure that these priorities reflect expert opinion as well as the views of stroke survivors and their families.

One of these priorities is research into haemorrhagic stroke (bleeds on the brain). Our understanding and treatment of haemorrhagic stroke lags behind what we know and what can be done for the more common, ischaemic (blood blockage) stroke. The Priority Programme for haemorrhagic stroke research aims to fund research that will address these gaps.
**Transient ischaemic attack (TIA), also known as mini-stroke**

- Transient ischaemic attack, or TIA (often referred to as a ‘mini-stroke’ or ‘warning stroke’) is the same as a stroke, except that the symptoms last for less than 24 hours. When symptoms first start, there is no way of knowing whether someone is having a TIA or a full stroke. Always call 999 if you spot the signs of a stroke.

- A TIA should be treated as seriously as a full stroke.

- About half of all strokes after TIA occur in the first 24 hours.³

**Risk of stroke following a TIA**

- 5% at 48 hours
- 8% at one week
- 12% at one month
- 17% at three months⁴ ⁵

- 1 in 12 people could have a stroke within a week of having a TIA.⁶

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**Guideline on TIA**

A new National Clinical Guideline for Stroke was published in 2016. The fifth edition of the guideline on how stroke care should be provided in the UK recommends that:

- All patients with a suspected TIA should be given aspirin and assessed urgently by a neurological specialist or on an acute stroke unit. When symptoms first start, there is no way of knowing whether someone is having a TIA or a full stroke. Always call 999 if you spot the signs of a stroke.

- Patients with a confirmed diagnosis of TIA should receive the appropriate drug treatment to reduce their risk of stroke.¹
Vascular dementia

Vascular dementia has similar symptoms to other types of dementia, but it is caused by a loss of blood supply to the brain, which often happens over a long period of time. Vascular dementia can happen through a single stroke, and through diseases of the small vessels of the brain. At the moment, relatively little is known about how to diagnose, treat or prevent vascular dementia.

- It is estimated that vascular dementia accounts for around 20% of all cases of dementia.6
- It is estimated that around 7 out of 10 65-year-olds and almost all 90-year-olds show signs of small vessel disease in the brain.7 8 This is thought to be a contributing factor in 4 out of 10 people with dementia.9
- Stroke and vascular dementia are linked by these small vessel diseases.10

Vascular dementia research

There is still a lot we do not know about vascular dementia and the relationship with stroke, and we lack the of treatments or preventative measures to stop progression of the disease in people who develop it. The Stroke Association is working in collaboration with the British Heart Foundation and Alzheimer’s Society to fund urgent and important research to discover more about this condition as well as how we can diagnose, treat and prevent it.
The stroke population
How common is stroke in the UK?

- There are more than 100,000 strokes in the UK each year.\(^{11}\)
- That is around one stroke every five minutes in the UK.
- Stroke incidence rates fell 19% from 1990 to 2010 in the UK.\(^ {14}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>2005</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age standardised stroke incidence per 100,000 people</td>
<td>142</td>
<td>116</td>
<td>115</td>
</tr>
</tbody>
</table>

Recurrence

- Stroke survivors are at greatest risk of having another stroke in the first 30 days following a stroke.\(^ {15}\)
- Around 1 in 4 stroke survivors will experience another stroke within five years.\(^ {15}\)
- 1 in 20 stroke patients have another stroke while still in hospital.\(^ {12}\)
- Over a quarter of people who have a stroke have had a previous stroke or TIA.\(^ {12}\)
Age

- In England, Wales and Northern Ireland the average age for men to have a stroke is 74 and the average age for women to have a stroke is 80.12
- In Scotland the average age for men to have a stroke is 71 and the average age for women to have a stroke is 76.13
- Around a quarter of strokes happen in people of working age.16
- The average age of stroke has decreased in recent years.
- People are most likely to have a stroke over the age of 55.17

Childhood stroke

- There are over 400 childhood strokes a year in the UK.16
- Around a quarter of these are in children under a year old, half are in children aged 1-10 and a quarter are in children aged 11 and over.
- Strokes caused by a bleed are more common in children than in adults.
- Only around 15% of adult strokes are due to a bleed, but it is thought that up to half of childhood strokes are due to a bleed.18,19,20

Childhood stroke risk

- In children, the risk of a stroke caused by a clot is six times higher following recent illness, such as cold and flu.21
- For children who have had none or some of their routine vaccinations, the risk of a stroke caused by a clot is eight times higher compared to those who had all their routine vaccinations.21
- Risk of stroke in children is 19 times higher in children with congenital heart disease.22
# Gender, ethnicity and social deprivation

## Gender
- Men are at higher risk of having a stroke at a younger age than women.\(^{12,16}\)
- There are a greater number of stroke related deaths in women.\(^{23,24,25}\) This is because women live longer than men, and women tend to have their strokes when they are older.

## Ethnicity
- White people are more likely to have an irregular heartbeat (such as atrial fibrillation), smoke and drink alcohol than black people.\(^{26}\) These are all factors that increase the risk of stroke.
- Black people are twice as likely to have a stroke and at a younger age than white people.\(^{26}\)
- Black people are more likely to have high blood pressure and diabetes than white people. This may contribute to higher stroke risk in black people.\(^{26}\)
- Black people are also more likely to have sickle cell disease, which increases the risk of a stroke.\(^{27}\)
- People with their origins in South Asian countries like India, Pakistan, Nepal, Sri Lanka and Bangladesh, are more likely to have a stroke at a younger age than white people.\(^{28}\)
- People with South Asian origins are more likely to have high blood pressure, high cholesterol and diabetes than white people. These are all factors that increase the risk of stroke.\(^{28}\)

## Social deprivation
- In general, people from more deprived areas have an increased risk of stroke.\(^{29}\)
- In general, people from more deprived areas are likely to experience more severe strokes.\(^{29}\)
- On average, people from low and middle income countries have strokes at a younger age than people from higher income countries.\(^{14}\)

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There are a greater number of stroke related deaths in women.
Surviving stroke

- More people are surviving stroke than ever before.\textsuperscript{14}
- There are over 1.2 million stroke survivors in the UK.\textsuperscript{30,31,32,33}

Stroke prevalence:
% of UK population who are stroke survivors

- 85\% of stroke patients in England, Wales and Northern Ireland survive their stay in hospital, and two thirds of stroke survivors return home or have supported discharge in their community when they leave hospital.\textsuperscript{12}
- 9 out of 10 stroke survivors in England, Wales and Northern Ireland are living at home six months after their stroke.\textsuperscript{12}
- A quarter of all stroke survivors in England, Wales and Northern Ireland who return home live alone.\textsuperscript{12}

\begin{center}
\begin{tabular}{l|c}
Scotland & 2.2\% \\
Wales & 2.0\% \\
Northern Ireland & 1.8\% \\
England & 1.7\% \\
\end{tabular}
\end{center}
Deaths from stroke in the UK

- Stroke is the fourth biggest killer in the UK, but the third biggest killer in Scotland.\(^{23,24,25}\)
- Over 40,000 people died of stroke in the UK in 2015.\(^{23,24,25}\) That’s a life lost every 13 minutes.
- 7% of all deaths in the UK are caused by stroke (6% of all deaths in men, and 8% of all deaths in women.\(^{23,24,25}\))
- 1 in 8 strokes are fatal within the first 30 days.\(^{34}\)
- Stroke death rates in the UK fell by almost half in the period from 1990 to 2010.\(^{14}\)
- Stroke causes twice as many deaths a year in women than breast cancer.\(^{23,24,25}\)
- Stroke causes twice as many deaths a year in men than prostate and testicular cancer combined.\(^{23,24,25}\)

![Stroke mortality trend in the UK](chart)

### Stroke mortality trend in the UK

#### Stroke mortality in the UK 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>England and Wales</td>
<td>14,414</td>
<td>20,469</td>
<td>34,883</td>
</tr>
<tr>
<td>Scotland</td>
<td>1,728</td>
<td>2,574</td>
<td>4,302</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>419</td>
<td>569</td>
<td>988</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16,561</strong></td>
<td><strong>23,612</strong></td>
<td><strong>40,173</strong></td>
</tr>
</tbody>
</table>
Stroke worldwide

- Every two seconds, someone in the world will have a stroke.
- There were almost 17 million incidences of first-time stroke worldwide in 2010.14
- Stroke is the second most common cause of death in the world, causing around 6.7 million deaths each year, taking a life every five seconds.35
- The burden of stroke due to illness, disability and early death it causes is set to double worldwide within the next 15 years.14
- Almost 1 in 8 deaths worldwide are caused by stroke.35

The 10 leading causes of death in the world

- Ischaemic heart disease 7.4m
- Stroke 6.7m
- COPD 3.1m
- Lower respiratory infections 3.1m
- Trachea bronchus lung cancers 1.6m
- HIV / AIDS 1.5m
- Diarrhoeal diseases 1.5m
- Diabetes mellitus 1.5m
- Road injury 1.3m
- Hypertensive heart disease 1.1m

Our international work

The Stroke Association is the second largest Stroke Support Organisation (SSO) in the world. In partnership with the World Stroke Organisation (WSO) and the Stroke Alliance for Europe, the Stroke Association supports new and emerging Stroke Support Organisations across the world. These emerging Stroke Support Organisations add a vital lifeline to stroke survivors in their communities by:

- helping people who make decisions about stroke care understand what is important to people affected by stroke
- providing support for people affected by stroke that nobody else can or will provide
- advocating on behalf of people affected by stroke.

In 2016 there were 23 SSOs registered as members of the WSO from across Europe and 12 other countries worldwide.
The devastating effects of stroke
The effects of a stroke depend on where it takes place in the brain, and how big the damaged area is.

**Some effects of a stroke:**

- weakness in arms and legs
- problems with speaking, understanding, reading and writing
- swallowing problems
- losing bowel and bladder control
- pain and headaches
- fatigue – tiredness that does not go away
- problems with memory and thinking
- eyesight problems
- numb skin, and pins and needles.
Disability after stroke

• Stroke is a leading cause of disability in the UK – almost two thirds of stroke survivors in England, Wales and Northern Ireland leave hospital with a disability.  

• Stroke causes a greater range of disabilities than any other condition. 

• In a survey of over 1000 stroke survivors last year, 4 in 10 told us the physical impact of stroke was the hardest to deal with. 

• It is estimated that 60% of stroke survivors have visual problems immediately after their stroke and this reduces to about 20% by three months after stroke. 

• Around a third of stroke survivors experience some level of aphasia (sometimes called dysphasia). Aphasia is a complex disorder of language and communication caused by damage to the language centres of the brain. People with aphasia may have difficulty speaking, reading, writing or understanding language. 

• Limb weakness is common after stroke: 
  • Over three quarters of stroke survivors report arm weakness, which can make it difficult for people to carry out daily living activities. 
  • Almost three quarters of stroke survivors report leg weakness, which can cause difficulty walking and balancing.

60% of stroke survivors have visual problems immediately after their stroke. 

1 in 3 stroke survivors have aphasia.
Living with the effects of stroke

- Around half of stroke survivors require speech and language therapy during their hospital stay after a stroke in England, Wales and Northern Ireland.\(^2\)

- Fatigue is common after a stroke: half of stroke survivors report fatigue. It can affect many aspects of daily life. It can be a serious problem for people returning to work and is associated with depression after stroke.\(^3\)

- Around half of stroke survivors have problems swallowing.\(^4\) This can make eating and drinking difficult, and delays in hospital assessments for swallowing are associated with a higher risk of pneumonia.\(^5\)

- Loss of bladder and bowel control is a common problem for stroke survivors. Around half of stroke survivors experience problems with bladder control.\(^6\)

- Emotionalism, or difficulty controlling emotional responses such as crying or laughing, is common after stroke. Emotionalism affects about 1 in 5 stroke survivors in the first six months after stroke.\(^7\)
Impact on daily life

• 4 out of 10 stroke survivors leave hospital requiring help with daily living activities but almost a third receive no social service visits.  

• In Scotland, over half of people who have a stroke need help from another person to be able to walk.  

• Around a third of stroke survivors experience depression after their stroke.  

• Over half of stroke survivors experience symptoms of anxiety at some point in the 10 years after their stroke.  

• In a survey of over a thousand stroke survivors last year, 1 in 5 told us the emotional impact of stroke was hard to deal with.  

• 42% of people report a negative change in their relationship with their partner after a stroke.  

• A quarter of people report that stroke had a negative impact on their family.  

• People of working age who have had a stroke are two to three times more likely to be unemployed 8 years after their stroke.  

• Around 1 in 6 stroke survivors experience a loss of income after stroke.  

• Almost a third of stroke survivors say they have to spend more on daily living costs.
Stroke risk factors and prevention
High blood pressure

- There are 9.5 million people in the UK diagnosed as having high blood pressure, also known as hypertension.\textsuperscript{30,31,32,33} That is 1 in 7 people in the UK.

- For every 10 people diagnosed with high blood pressure, seven remain undiagnosed and untreated - this is more than 5.5 million people in England alone.\textsuperscript{49}

- Treatment for high blood pressure significantly reduces the risk of heart attacks, stroke and heart failure: Every 10mmHg reduction in systolic BP reduces the risk of major cardiovascular events by 20%.\textsuperscript{49}

- High blood pressure is a contributing factor in around half of strokes in England, Wales and Northern Ireland.\textsuperscript{12}

- The number of people diagnosed as having high blood pressure has consistently increased since 2005.\textsuperscript{30,31,32,33}

<table>
<thead>
<tr>
<th>Country (2014/15)</th>
<th>% High blood pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>15.6%</td>
</tr>
<tr>
<td>Scotland</td>
<td>14.1%</td>
</tr>
<tr>
<td>England</td>
<td>13.8%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>13.3%</td>
</tr>
<tr>
<td><strong>UK average</strong></td>
<td><strong>13.9%</strong></td>
</tr>
</tbody>
</table>

Prevalence of high blood pressure in the UK

Blood pressure is the measure of how strongly blood presses against the walls of the arteries when it is pumped around the body. Blood pressure is measured in millimetres of mercury (mmHg) and is given as two figures:

1. systolic pressure – the pressure when your heart pushes blood out.
2. diastolic pressure – the pressure when your heart rests between beats.

Normal blood pressure is around 120/80. High blood pressure is considered to be 140/90 or higher.
Diabetes

- There are 3.6 million people over 17 years old diagnosed as diabetic in the UK – about 5% of the population.\textsuperscript{30,31,32,33}

- It is estimated there are another 850,000 people with undiagnosed diabetes.\textsuperscript{50}

- Diabetes almost doubles the risk of stroke\textsuperscript{50} and is a contributing factor in up to 1 in 5 strokes in England, Wales and Northern Ireland.\textsuperscript{12}

<table>
<thead>
<tr>
<th>Country (2015-16)</th>
<th>% with diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>5.9%</td>
</tr>
<tr>
<td>England</td>
<td>5.3%</td>
</tr>
<tr>
<td>Scotland</td>
<td>5.0%</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>4.5%</td>
</tr>
<tr>
<td>UK average</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Diabetes is a condition that causes a person’s blood sugar level to become too high. There are two main types of diabetes:

1. Type 1 diabetes develops when the immune system attacks and destroys the cells producing insulin. Insulin is a hormone that moves glucose from the bloodstream into body cells to produce energy.

2. Type 2 diabetes develops when the body does not produce enough insulin or when the body does not react to it in the right way.

Persistently elevated glucose levels from diabetes can increase the likelihood of atherosclerosis, where the blood vessels become clogged up and narrowed by fatty substances. This can increase the risk of stroke.\textsuperscript{51}
Atrial fibrillation

- Atrial fibrillation (AF) is a heart condition that causes an irregular and often abnormally fast heart rate.

- There are about 1.2 million people with AF in the UK.\(^{30,31,32,33}\)

- Stroke risk increases five-fold for people with AF.\(^{53}\)

- AF is a contributing factor in up to 1 in 5 strokes in the UK.\(^{12,13}\)

- AF often goes undiagnosed. It is estimated there could be another half a million people in the UK with undiagnosed AF.\(^{52}\)

Treatment for AF

- Anticoagulant drugs, such as warfarin, can be given to people with AF to reduce the risk of blood clots forming. But, anticoagulants continue to be under-prescribed.

- In the UK, around a quarter (24%) of eligible patients with AF do not receive anticoagulation.\(^{52}\)

- It is estimated that if AF were adequately treated, around 7,000 strokes would be prevented and over 2,000 lives saved every year in England alone.\(^{54}\)

- Less than half (45%) of UK patients with known AF are on anticoagulant medication when they go to hospital with a stroke.\(^{12,13}\)

- 8 out of 10 UK stroke survivors with AF are prescribed anticoagulant medication on discharge from hospital.\(^{12,13}\)

Example of AF heartbeat
Other risk factors

A hole in the heart (PFO)

A patent foramen ovale (PFO) is also known as a hole in the heart. It is an abnormal opening between the left and right upper chambers of the heart, which can allow a clot to travel through the heart to the brain. It is unclear, though, whether a PFO increases the risk of stroke as some studies have shown that someone with a PFO is at no higher risk of stroke than someone who does not have a PFO.

High cholesterol

- Cholesterol is a fatty substance in the blood. It is a vital to the healthy working of the body, but too much cholesterol in the blood can cause deposits on artery walls and restrict blood flow. It can also raise the risk of developing a blood clot which can lead to stroke.
- The use of statins in people at high risk of a cardiovascular event reduces the risk of stroke by 25%.
- Reducing cholesterol by 1mmol/L reduces stroke risk by 21%.

<table>
<thead>
<tr>
<th>The most common causes of high cholesterol are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>eating a diet that is high in saturated fat</td>
</tr>
<tr>
<td>smoking</td>
</tr>
<tr>
<td>lack of exercise</td>
</tr>
<tr>
<td>high alcohol intake</td>
</tr>
<tr>
<td>liver and/or kidney disease</td>
</tr>
<tr>
<td>genetics</td>
</tr>
</tbody>
</table>

Sickle cell disease

- In sickle cell disease, red blood cells change from a round shape to a crescent shape which can become stuck in the blood vessels. This can cause health problems. It mainly affects people of African, African-Caribbean, Asian and Mediterranean heritage.
- A quarter of people with sickle cell disease will have a stroke before the age of 45.
- Children with sickle cell disease have 333 times greater risk of stroke than children without sickle cell disease.
Alcohol

- Regular consumption of large quantities of alcohol greatly increases the risk of having a stroke.\textsuperscript{60}

- When asked, 31\% of adults in the UK reported drinking more than recommended at least one day in the previous week.\textsuperscript{61} Drinking over the recommended weekly amount of alcohol was most common among adults aged 55 to 64.

Smoking

- Smoking doubles the risk of death from stroke.\textsuperscript{62}

- 1 in 6 (18\%) people in the UK are active smokers.\textsuperscript{61}

- There are about 1.9 million visits to UK hospitals a year for conditions related to smoking.\textsuperscript{63,64,65,66}

- Shisha smoking carries the same risks as cigarette smoking.

- In 2012, a study found that half of those younger than 45 who had a stroke were active smokers; this rose to two thirds when including ex-smokers.\textsuperscript{67}

Drugs

- The same study found that 1 in 5 (20\%) of those under 45 who had a stroke had used illegal drugs.

- Cocaine increases risk of stroke in the 24 hours following use.\textsuperscript{68}

Physical activity

- Physical inactivity and a sedentary lifestyle increases your risk of an ischaemic stroke by 50\%.\textsuperscript{84}

- Being overweight increases your risk of ischaemic stroke by 22\% and being obese by 64\%.\textsuperscript{85}

- Moderate exercise can reduce your risk of stroke by up to 27\%.\textsuperscript{86}

Modifiable risk factors

Many stroke risk factors are known as modifiable risk factors: factors that people can try to manage or improve through their own behaviour. Managing modifiable risk factors, such as poor diet, smoking or being overweight can help with other risk factors, such as high blood pressure and diabetes, and in turn reduce stroke risk.

A large international study published in 2016 found that 10 modifiable risk factors are associated with 9 out of 10 strokes worldwide.\textsuperscript{69}
Stroke treatment and care
To receive the best possible treatment and care it is vital that everyone with a suspected stroke arrives at hospital as quickly as possible and receives timely diagnosis. Public awareness of the FAST test can help people to identify the signs of stroke and call 999 as quickly as possible.

- Almost a third of people who went to hospital with a stroke in England, Wales and Northern Ireland in 2015–16 did not know what time their symptoms started.\(^{12}\)

- 82% of people having a stroke arrived at hospital by ambulance.\(^{12}\)

- About half of patients who go to hospital while having a stroke in England, Wales and Northern Ireland receive a brain scan within an hour of arriving. In Scotland, just over half receive a brain scan within four hours.\(^{12,13}\)

- Across the UK, almost 9 out of 10 of stroke patients receive a brain scan within 12 hours.\(^{12,13}\)

- More than half of patients who received the clot-busting treatment, thrombolysis, in the UK received it within an hour of arriving in hospital in 2015–16. If the time when symptoms started is unknown, or it is more than four and a half hours after symptoms started, the treatment cannot be provided.\(^{12,13}\)

- 1 in 5 patients are not assessed to see if they can swallow properly within four hours of arriving in hospital. In Scotland, 20% do not have their swallow assessed on the day they are admitted,\(^{12,13}\) although this is improving each year.

- It takes an average of seven hours from the onset of symptoms to be admitted to a stroke unit.\(^{12}\)

- In Scotland, 8 out of 10 people are admitted to a stroke unit within 24 hours.\(^{12}\)

Guideline for scanning times

A new National Clinical Guideline for Stroke was published in 2016. The fifth edition of the guideline on how stroke care should be provided in the UK recommends that patients with suspected acute stroke should now receive a brain scan within one hour of arrival at hospital. The previous edition of the guideline, published in 2012, recommended scanning some patients within one hour (such as people who may be eligible for thrombolysis) and all other patients should be scanned within 12 hours.\(^{1}\)
A stroke unit is a specialist hospital ward where stroke patients are cared for by a team of professionals who specialise in stroke care.\textsuperscript{70}

9 out of 10 stroke patients are cared for on a stroke unit.\textsuperscript{12,13}

Only 77\% of patients are taken straight to a stroke unit in England, Wales and Northern Ireland. This means that 23\% of people are treated on general wards without stroke specialists early in their treatment.\textsuperscript{12}

Stroke patients who are cared for on stroke units are more likely to be alive and living independently a year after having a stroke than those cared for on other wards.\textsuperscript{71}

4 out of 10 hospitals in England, Wales and Northern Ireland have a shortage of stroke consultants.\textsuperscript{72}

**Hyper-acute stroke units (HASU)**

HASUs are a type of stroke unit that exist in some hospitals in the UK. HASUs should bring experts and specialist equipment under one roof to provide world-class treatment 24 hours a day, seven days a week.

HASUs have been adopted in several locations. In London the model saves an extra 96 lives each year. In Greater Manchester it has reduced the length of hospital stays by two days.
Treatments for ischaemic stroke (due to a clot)

Clot-busting treatment (thrombolysis)

Thrombolysis is a treatment that uses drugs to break down and disperse a clot for people who have had an ischaemic stroke. It is licenced to be used up to four and a half hours from the onset of stroke symptoms.73 74

- An estimated 1.9 million neurons are lost every minute a stroke is untreated.75

- 12% of stroke emergencies in the UK are eligible to receive thrombolysis12, this is around 10,000 people. Of these, 85% receive thrombolysis treatment.12 13

- 6 out of 10 stroke patients in England, Wales and Northern Ireland arrived at hospital after the 4.5 hour time window in 2015–16, or had a stroke during sleep so the time could not be calculated.12

- The average door-to-needle time in the UK is around 55 minutes.12 13

- When thrombolysis is given within three hours, 1 in 10 more eligible patients will be alive and living independently.76

Mechanical clot retrieval (thrombectomy)

Thrombectomy is a procedure that mechanically pulls the blood clot out of the brain. It can be performed in the early hours after a stroke happens.

- About 9,000 patients per year may be eligible for thrombectomy,77 it is shown to reduce the chance of disability after stroke and NICE guidance says it is safe and effective.78

- There are a few centres where thrombectomy is available in the UK, but there are not enough of trained professionals for the service to be rolled out across the UK:
  - Because the treatment is not fully commissioned yet, almost a third of hospitals have no access to thrombectomy either on site or by referring to another hospital.72
  - Just 83 consultants in England, Wales and Northern Ireland reported they could undertake the procedure as of 2016.72
  - Adoption of thrombectomy treatment has been slow in the UK compared to Germany, France and the US.
  - About 400 patients received thrombectomy treatment in England, Wales and Northern Ireland in 2015–16,72 but as many as 9,000 UK patients could have been eligible.77
Rehabilitation and life after stroke support

Rehabilitation

• Although the biggest steps in recovery are usually in the first few weeks after a stroke, the brain’s ability to ‘re-wire’ itself, known as neuroplasticity, means it is possible to improve for months or years. 79

• Over a third of stroke survivors are discharged to an Early Supported Discharge (ESD) or community rehabilitation team in England, Wales and Northern Ireland. The majority of stroke survivors discharged via these routes are cared for by stroke or neurology specialist teams. 12

• 19% of hospitals in England, Wales and Northern Ireland do not offer ESD services. 72

• 56% of stroke survivors are discharged from hospital having been assessed for all appropriate therapies and with agreed goals for their rehabilitation. 72

• 1 million stroke survivors in England, Wales and Northern Ireland need post-acute care (care received after a stay in hospital). 80

Early Supported Discharge (ESD)

ESD is the discharge of a stroke survivor from hospital to their own home, co-ordinated by a team of therapists, nurses and a doctor. Rehabilitation is then provided in the patient’s own home instead of in hospital.
Life after stroke support

• Only 3 out of 10 stroke survivors who need a six month assessment receive one. A six month review monitors how well stroke survivors are recovering and identifies additional, tailored support that may be needed to prevent unnecessary readmissions to hospital and care homes.

• 20% of stroke survivors who have a psychological assessment at their six month review in England, Wales and Northern Ireland need support. However, stroke survivors wait an average of 10 weeks after referral to receive psychological treatment.

• In 2015, only 15% of post-acute services in England, Wales and Northern Ireland were commissioned to help people return to work after their stroke.

• In 2015, 1 in 3 commissioning areas in England, Wales and Northern Ireland did not commission family and carer support services.

• In 2015, 1 in 5 commissioning areas in the England, Wales and Northern Ireland did not offer access to speech and language therapy for stroke survivors.

Guideline for six month reviews

A new National Clinical Guideline for Stroke was published in 2016. The fifth edition of the guideline on how stroke care should be provided in the UK recommends that stroke survivors, including those living in a care home, should be offered a structured health and social care review at six months and 1 year after the stroke, and then annually. The review should consider whether further interventions are needed, and the person should be referred for further specialist assessment if:

• new problems are present;
• the person’s physical or psychological condition, or social environment has changed.

Life After Stroke Services

The Stroke Association is UK’s leading stroke service provider, working with stroke survivors and their families to help them to make the best possible recovery by:

• Giving 80,000 people the information they need through the Stroke Association website, our helpline and stroke information resources.
• Offering vital support to around 60,000 people after a stroke through our Life After Stroke services.
• Making support available for recovery in the long-term through our ~457 stroke clubs and groups.
Economic impact of stroke
The cost of stroke to health and social care

- The NHS and social care costs of stroke are around £1.7 billion a year in England.\textsuperscript{81}

- The average NHS and social care cost for each person that has a stroke is about £22,000 a year, and around £45,000 over five years.\textsuperscript{81}

- The older you are when you have a stroke, the more expensive the care.\textsuperscript{81}

- The NHS could save £4,100 over five years for each stroke patient given thrombolysis, and £1,600 over five years for each patient discharged with Early Supported Discharge, because of better health-related outcomes.\textsuperscript{81}

- Previous research has estimated that stroke costs the UK around £9 billion a year as a society. This includes £2.4 billion a year in informal care costs, £1.3 billion in lost income due to care, disability and death, and over £800 million in benefit payments.\textsuperscript{82}

Costs broken down:

- one day on a hyper-acute stroke unit (HASU): £583
- one month of ESD service: £213-£535
- a single treatment of thrombolysis: £480
- a week in a care home: £523.
Total government and charity research funding

- In 2012, £56 million was spent on stroke research in the UK. This figure is dwarfed by the comparable spend on cancer research (£544 million). Stroke also receives considerably less funding than coronary heart disease (£166 million) and dementia research (£90 million).\(^3\)

![Research spend in the UK](image)

Total spend on research for each person with the disease

- For every cancer patient living in the UK, £241 is spent each year on medical research, compared with just £48 a year for every stroke patient. That’s about a fifth of the comparable spend on cancer and less than half of the comparable spend on dementia research (£118).\(^3\)

Research into the psychological consequences of stroke

As part of our five-year research strategy we made a commitment to work with others to achieve a clear vision about the future priorities for stroke research. We want to ensure that these priorities reflect expert opinion as well as the views of stroke survivors and their families. One of these priorities is research into the psychological consequences of stroke.

While physical impairment after a stroke may be easily seen and diagnosed, the psychological effects of stroke often remain hidden, may go unrecognised by some healthcare professionals, with the true impact remaining unknown. The Priority Programme for the psychological consequences of stroke research aims to fund research that will address these issues.
References


76. The IST-3 collaborative group. (2012). The benefits and harms of intravenous thrombolysis with recombinant tissue plasminogen activator within 6 h of acute ischaemic stroke (the third international stroke trial [IST-3]): a randomised controlled trial. The Lancet 379:9834: 2352-2363.


We are the Stroke Association

We believe in life after stroke. That’s why we support stroke survivors to make the best recovery they can. It’s why we campaign for better stroke care. And it’s why we fund research to develop new treatments and ways of preventing stroke.

We’re here for you. Together we can conquer stroke. If you’d like to know more please get in touch.

Stroke Helpline: 0303 3033 100
Website: stroke.org.uk
Email: info@stroke.org.uk
From a textphone: 18001 0303 3033 100

We are a charity and we rely on your support to change the lives of people affected by stroke and reduce the number of people who are struck down by this devastating condition.
Please help us to make a difference today.

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