

# NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

## Guideline scope

### Stroke and transient ischaemic attack in over 16s: diagnosis and initial management (update)

This guideline will update the NICE guideline on stroke and transient ischaemic attack in over 16s: diagnosis and initial management (CG68). To see which areas will be covered in this update, see the [proposed outline for the guideline](#).

The guideline will be developed using the methods and processes outlined in [Developing NICE guidelines: the manual](#).

This guideline will also be used to update the NICE [quality standard](#) for stroke in adults.

## 1 Why the update is needed

New evidence that could affect recommendations was identified through the surveillance process. Topic experts, including those who helped to develop the existing guideline, advised NICE on whether areas should be updated or new areas added. Full details are set out in the [surveillance review decision](#).

### ***Why the guideline is needed***

Since NICE published its guideline on stroke and transient ischaemic attack (TIA) in 2008 the management of stroke has changed. New evidence has emerged in areas such as thrombolysis and thrombectomy (clot retrieval procedures) in ischaemic stroke, controlling high blood pressure in people with acute haemorrhagic stroke and the role of hemicraniectomy. In addition,

there is some uncertainty about the role of conventional risk stratification in TIA, the best approach to intracranial imaging for these people and early mobilisation and optimum positioning of people with acute stroke. The purpose of this guideline update is to appraise the current evidence and develop guidance on these specific issues.

### **Key facts and figures**

A stroke occurs when the blood supply to a part of the brain is acutely compromised. Most strokes (85%) are caused by a blockage in a blood vessel (artery) that supplies blood to the brain. A TIA or 'mini stroke' has the same clinical presentation as a stroke except that symptoms disappear within 24 hours.

The symptoms experienced depend on the part of the brain that is affected. They usually occur suddenly and without any warning. Common symptoms include loss of movement or sensation in an arm or leg, problems speaking, a drooping of one side of the face or problems with vision.

A stroke can occur at any age. The average age for stroke varies across the UK, with a median age of 77 years (interquartile range 67 to 85). A quarter of strokes occur in people of working age.

First ever stroke affects 230 people per 100,000 each year, with over 80,000 people hospitalised per year in England. Although the death rate has been falling, the most recent figures from the Sentinel Stroke National Audit Programme (SSNAP) show that 13.6% of people admitted to hospital with stroke in England and Wales died (either in hospital or after being discharged from inpatient care) within 30 days. There are approximately 1.2 million stroke survivors in the UK. The risk of recurrent stroke is 26% within 5 years of a first stroke and 39% by 10 years.

Stroke is the single biggest cause of disability in adults, with an estimated annual cost to the NHS of £1.03 billion per year. A further £633 million was estimated to have been spent on social care between 2015 and 2016. One in 12 stroke survivors have to move into a care home because of the effects of their stroke.

## Current practice

Any suspected acute stroke should be treated as a medical emergency, with the person having an initial clinical assessment, a timely brain scan and a decision on suitability for treatment.

People who have had an ischaemic stroke are usually treated with clot busting drugs (thrombolytics). Clot retrieval procedures (thrombectomy or endovascular therapy), which have the potential to significantly reduce the chances of eventual disability, are also used.

## 2 Who the guideline is for

People using services, their families and carers and the public will be able to use the guideline to find out more about what NICE recommends, and help them make decisions.

This guideline is for:

- People aged over 16 who have had a stroke or TIA.
- Healthcare professionals in primary and secondary NHS healthcare settings, including:
  - referral to tertiary care
  - pre-hospital emergency care settings, including ambulance services
  - NHS 111/999.
- Commissioners and providers of services.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#) and [Northern Ireland Executive](#).

### ***Equality considerations***

NICE has carried out [an equality impact assessment](#) during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope.

The guideline will look at inequalities relating to age and disability.

### **3 What the updated guideline will cover**

#### **3.1 *Who is the focus?***

##### **Groups that will be covered**

- People over 16 with suspected or confirmed TIAs or completed strokes – that is, an acute neurological event presumed to be vascular in origin and causing cerebral ischaemia, cerebral infarction or cerebral haemorrhage. This includes:
  - first and recurrent events
  - thrombotic and embolic events
  - primary intracerebral haemorrhage of any cause, including venous thrombosis
- Specific consideration will be given to older people and people younger than 55.

##### **Groups that will not be covered**

- Specific issues relating to the general management of underlying conditions.
- Subarachnoid haemorrhage.

#### **3.2 *Settings***

##### **Settings that will be covered**

- Primary, secondary and tertiary NHS healthcare settings.
- Pre-hospital emergency care settings, including ambulance services.
- Care home settings: all residential or nursing care homes, including hospices
- NHS 111/999

### **3.3      *Activities, services or aspects of care***

#### **Key areas that will be covered in this update**

We will look at evidence in the areas below when developing this update. We will consider making new recommendations or updating existing recommendations in these areas only.

- 1    TIA: rapid diagnosis and initial management
  - Risk stratification
  - Aspirin when TIA first suspected
- 2    Brain imaging after TIA
- 3    Treatments for people with acute stroke
  - Systemic: thrombolysis in people aged 80 and over (off-label use)<sup>1</sup>
  - Endovascular: mechanical thrombectomy (plus intra-arterial thrombolysis)
- 4    Blood pressure control for haemorrhagic stroke
- 5    Surgery for people with acute stroke (referral for decompressive hemicraniectomy)
- 6    Early mobilisation and optimum positioning of people with acute stroke

Note that guideline recommendations for medicines will normally fall within licensed indications; exceptionally, and only if clearly supported by evidence, use outside a licensed indication may be recommended. The guideline will assume that prescribers will use a medicine's summary of product characteristics to inform decisions made with individual patients.

#### **Proposed outline for the guideline**

The table below outlines all the areas that will be included in the guideline. It sets out what NICE plans to do for each area in this update.

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<sup>1</sup> The licence for systemic thrombolysis with alteplase for acute stroke was extended in September 2018 to cover use in people aged 80 and over, so this area was not addressed in the update.

Area in the guideline	What NICE plans to do
Recognition of symptoms and diagnosis <ul style="list-style-type: none"> <li>• Recognition of symptoms of TIA and stroke symptoms</li> </ul>	No evidence review: retain recommendations from existing guideline
Recognition of symptoms and diagnosis <ul style="list-style-type: none"> <li>• Early versus late assessment of people with TIA</li> <li>• Identifying people with TIA at high risk of stroke</li> <li>• Use of aspirin after TIA</li> </ul>	Review evidence on risk stratification tools, which will also impact on recommendations on early versus late assessment: update existing recommendations as needed  Review evidence on aspirin after TIA: update existing recommendations as needed
Imaging <ul style="list-style-type: none"> <li>• Suspected TIA – referral for urgent brain imaging</li> </ul>	No evidence review, but recommendations may need changing following risk stratification review
Imaging <ul style="list-style-type: none"> <li>• MRI and CT for people with suspected TIA</li> </ul>	Review evidence: update existing recommendations as needed
Imaging <ul style="list-style-type: none"> <li>• Early carotid imaging in people with acute non-disabling stroke or TIA</li> <li>• Urgent carotid endarterectomy and carotid stenting in people with carotid stenosis</li> </ul>	No evidence review: retain recommendations from existing guideline
Specialist care in acute stroke	No evidence review: retain recommendations from existing guideline
Systemic and endovascular treatment <ul style="list-style-type: none"> <li>• Thrombolysis</li> <li>• Thrombectomy</li> </ul>	Review evidence on off-label use of alteplase in people aged over 80. <sup>2</sup> Alteplase covered by TA264. Refresh existing recommendations as needed  Review evidence on intravenous thrombolysis versus thrombectomy versus thrombolysis and thrombectomy: new area in the guideline
Pharmacological treatments <ul style="list-style-type: none"> <li>• Aspirin and anticoagulant treatment</li> <li>• Reversal of anticoagulation treatment</li> <li>• Statin treatment</li> </ul>	No evidence review: retain recommendations from existing guideline
Maintenance or restoration of homeostasis <ul style="list-style-type: none"> <li>• Supplemental oxygen therapy</li> <li>• Blood sugar control</li> </ul>	No evidence review: retain recommendations from existing guideline and update in line with current practice and policy where appropriate

Maintenance or restoration of homeostasis <ul style="list-style-type: none"> <li>Blood pressure control</li> </ul>	Review evidence: update existing recommendations as needed for haemorrhagic stroke only
Nutrition and hydration	No evidence review: retain recommendations from existing guideline
Early mobilisation and optimum positioning of people with acute stroke	Review evidence: update existing recommendations as needed
Avoidance of aspiration pneumonia	No evidence review: retain recommendations from existing guideline
Surgery for people with acute stroke <ul style="list-style-type: none"> <li>Surgical referral for acute intracerebral haemorrhage</li> </ul>	No evidence review: retain recommendations from existing guideline
Surgery for people with acute stroke <ul style="list-style-type: none"> <li>Surgical referral for decompressive hemicraniectomy</li> </ul>	Review evidence: update existing recommendations as needed

Recommendations in areas that are being retained from the existing guideline may be edited to ensure that they meet current editorial standards, and reflect the current policy and practice context.

### Related NICE guidance

- [Mechanical clot retrieval for treating acute ischaemic stroke](#) (2016) NICE interventional procedure guidance 548
- [Atrial fibrillation: management](#) (2014) NICE guideline CG180
- [Stroke rehabilitation in adults](#) (2013) NICE guideline CG162
- [Carotid artery stent placement for symptomatic extracranial carotid stenosis](#) (2011) NICE interventional procedure guidance 389
- [Venous thromboembolism: reducing the risk for patients in hospital](#) (2010) NICE guideline CG92 (being updated)
- [Clopidogrel and modified-release dipyridamole for the prevention of occlusive vascular events](#) (2010) NICE technology appraisal guidance 210
- [Rehabilitation after critical illness in adults](#) (2009) NICE guideline CG83

<sup>2</sup> The licence for systemic thrombolysis with alteplase for acute stroke was extended in September 2018 to cover use in people aged 80 and over, so this area was not addressed in the update.

- [Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition](#) (2006) NICE guideline CG32

***NICE guidance that will be incorporated unchanged in this guideline***

- [Alteplase for treating acute ischaemic stroke](#) (2012) NICE technology appraisal guidance 264

***NICE guidance that will be updated by this guideline***

- [Stroke and transient ischaemic attack in over 16s: diagnosis and initial management](#) (2008) NICE guideline CG68

**NICE guidance about the experience of people using NHS services**

NICE has produced the following guidance on the experience of people using the NHS. This guideline will not include additional recommendations on these topics unless there are specific issues related to stroke or TIA:

- [Medicines optimisation](#) (2015) NICE guideline NG5
- [Patient experience in adult NHS services](#) (2012) NICE guideline CG138
- [Medicines adherence](#) (2009) NICE guideline CG76

### **3.4 Economic aspects**

We will take economic aspects into account when making recommendations. For each review question (or key area in the scope) for which the evidence is being reviewed, we will develop an economic plan that states whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an NHS and personal social services (PSS) perspective, as appropriate.

### **3.5 Key issues and questions**

While writing the scope for this updated guideline, we have identified the following key issues and draft key questions related to them:

- 1 Recognition of symptoms and diagnosis.



- 1.1 How accurately do scoring systems predict which people with suspected TIA need to be referred urgently for specialist assessment?
- 1.2 Should aspirin be offered to people when TIA is first suspected?
- 2 Brain imaging.
  - 2.1 After TIA, what is the best imaging strategy?
- 3 Systemic and endovascular treatment.
  - 3.1 What is the safety and clinical effectiveness of intravenous thrombolysis (alteplase) in people aged over 80 (off-label use)<sup>3</sup>?
  - 3.2 What is the clinical effectiveness of thrombolysis (alteplase) versus thrombectomy versus thrombolysis (alteplase) plus thrombectomy to improve outcomes?
- 4 Maintenance or restoration of homeostasis.
  - 4.1 What is the safety and efficacy of measures to manipulate blood pressure versus treatment as usual in people with acute haemorrhagic stroke?
- 5 Early mobilisation and optimum positioning.
  - 5.1 Does early mobilisation versus treatment as usual reduce mortality and morbidity in people with acute stroke?
  - 5.2 What is the effectiveness of head positioning (sitting up or lying flat) after a stroke to improve outcomes?
- 6 Surgery for people with acute stroke.
  - 6.1 Which patients should be referred for decompressive hemicraniectomy?

The key questions may be used to develop more detailed review questions, which guide the systematic review of the literature.

### **3.6 Main outcomes**

The main outcomes that will be considered when searching for and assessing the evidence are:

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<sup>3</sup> The licence for systemic thrombolysis with alteplase for acute stroke was extended in September 2018 to cover use in people aged 80 and over, so this area was not addressed in the update.

- 1 Diagnostic accuracy.
- 2 Risk of stroke.
- 3 Mortality.
- 4 Intracerebral haemorrhage.
- 5 Degree of disability or dependence in daily activities, for example Modified Rankin Scale and patient reported outcome measures.
- 6 Quality of life (both health- and social-related quality).
- 7 Cost effectiveness.

## **4 NICE quality standards and NICE Pathways**

### **4.1 NICE quality standards**

**NICE quality standards that may need to be revised or updated when this guideline is published**

- Stroke in adults (2016) NICE quality standard 2

### **4.2 NICE Pathways**

When this guideline is published, we will update the existing NICE pathway on [stroke](#). NICE Pathways bring together everything NICE has said on a topic in an interactive flowchart.

## **5 Further information**

This is the final scope, incorporating comments from registered stakeholders during consultation.

The guideline is expected to be published in March 2019.

You can follow [progress of the guideline](#).

Our website has information about how [NICE guidelines](#) are developed.