# Impact on NHS workforce and resources

Resource impact
Published: 17 July 2019

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This updated NICE guideline on stroke and transient ischaemic attack in over 16s has been reviewed for its potential impact on the NHS workforce and resources.

## Recommendations likely to have an impact on resources

The guideline covers diagnosis and acute management of stroke and transient ischaemic attack (TIA) for people over 16. The recommendations that are most likely to have a substantial resource impact are:

- Recommendation 1.4.6: Offer thrombectomy as soon as possible to people who were last known to be well between 6 hours and 24 hours previously (including wake-up strokes):
  - who have acute ischaemic stroke and confirmed occlusion of the proximal anterior circulation demonstrated by CTA or MRA and
  - if there is the potential to salvage brain tissue, as shown by imaging such as CT perfusion or diffusion-weighted MRI sequences showing limited infarct core volume

  taking into account the factors in recommendation 1.4.8.

- Recommendation 1.4.7: Consider thrombectomy together with intravenous thrombolysis (where not contraindicated and within the licensed time window) as soon as possible for people last known to be well up to 24 hours previously (including wake-up strokes):
  - who have acute ischaemic stroke and confirmed occlusion of the proximal posterior circulation (that is, basilar or posterior cerebral artery) demonstrated by CTA or MRA and
  - if there is the potential to salvage brain tissue, as shown by imaging such as CT perfusion or diffusion-weighted MRI sequences showing limited infarct core volume

  taking into account the factors in recommendation 1.4.8.

- Recommendation 1.4.8: Take into account the person's overall clinical status and the extent of established infarction on initial brain imaging to inform decisions about thrombectomy. Select people who have (in addition to the factors in recommendations 1.4.5 to 1.4.7):
  - a pre-stroke functional status of less than 3 on the modified Rankin scale and
  - a score of more than 5 on the National Institutes of Health Stroke Scale (NIHSS).

- Recommendation 1.2.1: Do not offer CT brain scanning to people with a suspected TIA unless there is clinical suspicion of an alternative diagnosis that CT could detect.

- Recommendation 1.2.2: After specialist assessment in the TIA clinic, consider MRI (including diffusion-weighted and blood-sensitive sequences) to determine the territory of ischaemia, or to detect haemorrhage or alternative pathologies. If MRI is done, perform it on the same day as the assessment.

- Recommendation 1.1.5: Refer immediately people who have had a suspected TIA for specialist assessment and investigation, to be seen within 24 hours of onset of symptoms.

# Context

Since NICE published its guideline on stroke and TIA in 2008 the management of stroke has changed. New evidence has emerged in areas such as thrombectomy (clot retrieval procedures) in ischaemic stroke, controlling high blood pressure in people with acute haemorrhagic stroke, hemicraniectomy in malignant middle cerebral artery syndrome, early mobilisation and optimum positioning of people with acute stroke.

First-ever stroke affects 230 people per 100,000 each year, with over 80,000 people hospitalised per year in England.

Stroke is the single biggest cause of disability in adults. The Stroke Association has estimated an annual cost to the NHS in England of £2.98 billion per year. In addition, annual social care costs have been estimated at £4.55 billion with almost half of that estimated to be from public funds.

Services for people who have had a stroke are commissioned by clinical commissioning groups, except when specialist interventions such as thrombectomy are needed. Specialist neurosurgical interventions, such as thrombectomy, are commissioned by NHS England. Providers are NHS hospital trusts, including adult neuroscience or neurology centres and ambulance services.

# Resource impact

We estimate that implementing these recommendations would have the following resource impact:

## Costs

- Additional rapid computed tomographic angiography (CTA) and computed tomographic perfusion (CTP) scans before thrombectomy.
- Network arrangements to support the implementation of thrombectomy services available 24 hours a day, 7 days a week at neuroscience or thrombectomy centres.
- Additional ambulance costs of transferring people to neuroscience or thrombectomy centres from referring stroke units.
- Additional costs of thrombectomies. This cost has been planned by the commissioner (NHS England).
- Additional MRI imaging for people with a suspected TIA in some stroke centres.
- Development of triage systems to enable clinical teams to prioritise referrals.

## Savings

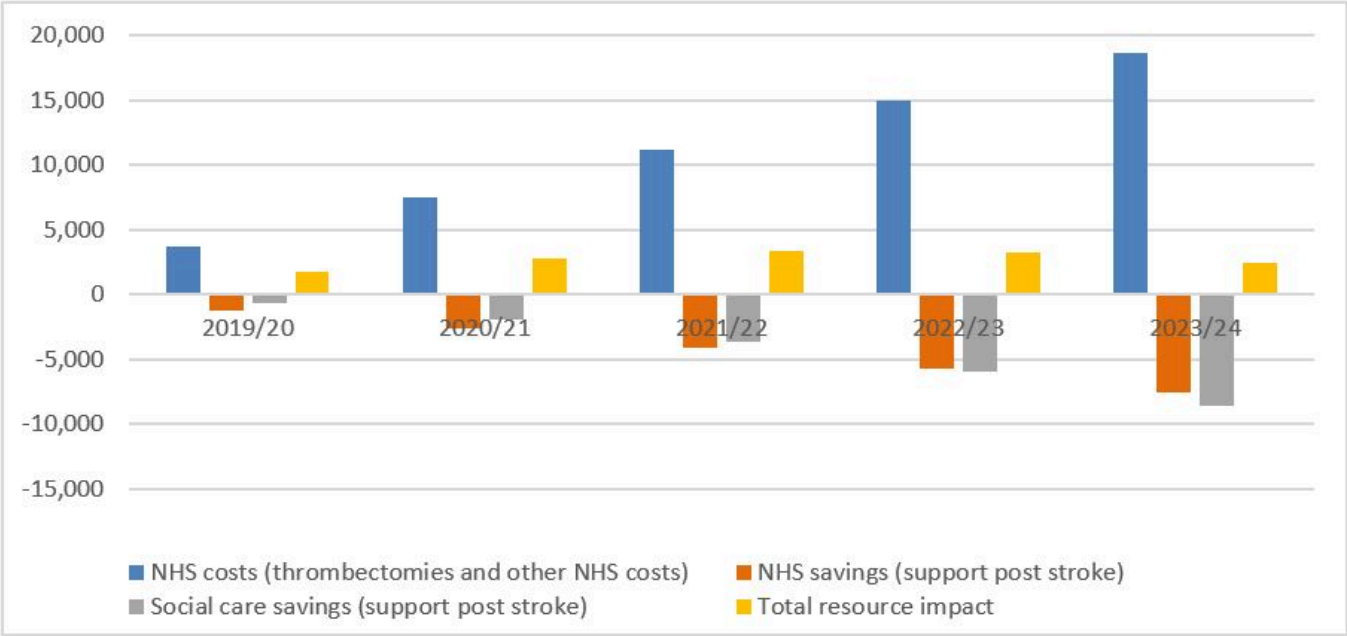
- Reduction in CT scans for people with a suspected TIA, unless there is clinical suspicion of an alternative diagnosis.
- Reduced length of hospital stay and reduction in bed days.
- Reduction in future NHS supportive care costs after a stroke because of improved management of TIA and acute stroke.
- Reduction in future social care costs after a stroke.

## Costs and savings over the first 5 years

| | 2019/20 (£000s) | 2020/21 (£000s) | 2021/22 (£000s) | 2022/23 (£000s) | 2023/24 (£000s) |
|---|---|---|---|---|---|
| **Recommendation 1.4.6** | | | | | |
| NHS costs | 1,563 | 3,125 | 4,688 | 6,250 | 7,813 |
| NHS savings | −458 | −970 | −1,534 | −2,151 | −2,821 |
| Social care savings | −306 | −823 | −1,552 | −2,492 | −3,644 |
| **Resource impact of recommendation 1.4.6** | **799** | **1,332** | **1,602** | **1,607** | **1,348** |
| **Recommendation 1.4.7** | | | | | |
| NHS costs | 2,154 | 4,309 | 6,463 | 8,617 | 10,772 |
| NHS savings | −631 | −1,388 | −2,147 | −2,978 | −3,883 |
| Social care savings | −432 | −1,141 | −2,141 | −3,433 | −5,015 |
| **Resource impact of recommendation 1.4.7** | **1,091** | **1,780** | **2,175** | **2,206** | **1,874** |
| **Recommendations 1.2.1 and 1.2.2** | | | | | |
| NHS costs | 6 | 12 | 19 | 25 | 31 |
| NHS savings | −165 | −330 | −495 | −660 | −825 |
| **Resource impact of recommendations 1.2.1 and 1.2.2** | **−159** | **−318** | **−477** | **−635** | **−794** |
| **Recommendation 1.1.5 (Assess resource impact locally)** | | | | | |
| Total NHS costs | 3,723 | 7,446 | 11,170 | 14,892 | 18,616 |
| Total NHS savings | −1,254 | −2,688 | −4,176 | −5,789 | −7,529 |
| Total social care savings | −738 | −1,964 | −3,693 | −5,925 | −8,658 |

| | 2019/20 (£000s) | 2020/21 (£000s) | 2021/22 (£000s) | 2022/23 (£000s) | 2023/24 (£000s) |
|---|---|---|---|---|---|
| **Total resource impact** | 1,731 | 2,795 | 3,301 | 3,178 | 2,427 |

## Graph of the budget impact of implementing the guideline



# Support to put the recommendations into practice

- NHS England specialised commissioning began implementing thrombectomy nationally in 2017 for acute stroke, with 5-year implementation plans in the 24 neuroscience national centres. The number of thrombectomy procedures is expected to increase from 450 in 2017/18 to 2,000 by the end of 2019/20. Service specifications and implementation plans for up to 5-7 new thrombectomy centres are under way. These will be able to deliver thrombectomy to patients who are currently unable to get to a thrombectomy centre within the recommended timeframe because of location. Two standalone thrombectomy units will be trialled in two regions where neuroscience centres are not feasible
- The National Stroke Delivery Board was set up in March 2019 following the publication of the NHS Long Term Plan. This has an acute and urgent care workstream that will focus on increased rates of thrombectomy and improved delivery of hyper-acute stroke pathways. Delivery and performance will be monitored and supported regionally by NHS England and the Getting It Right First Time (GIRFT) Stroke Programme.
- The Sentinel Stroke National Audit Programme (SSNAP) and GIRFT are working together on a modified acute organisational audit, which will assess access to acute and rehabilitation services as well as workforce. Results will be available in late 2019.
- NHS England is working to develop integrated stroke delivery networks (ISDN). A unified stroke service specification will be available to all stroke centres within the next 6 months. This will feed into the regional strategic governance networks and build upon the current strategic clinical networks.
- Health Education England will work with partners across the NHS to modernise the stroke workforce, with a focus on cross-specialty and, in some cases, cross-profession accreditation of competencies. This has included work with the medical Royal Colleges and specialty societies to develop a new credentialing programme for hospital consultants trained to offer mechanical thrombectomy. CQUIN funding to increase the number of interventional radiologists has been made available in 2019/20.

**The guideline resource and implementation panel**

The guideline resource and implementation panel reviews NICE guidelines that have a substantial impact on NHS resources. By 'substantial' we mean that:

- implementing a single guideline recommendation in England costs more than £1 million per year, or
- implementing the whole guideline in England costs more than £5 million per year.

Panel members are from NICE, NHS England, NHS Improvement, Health Education England and when appropriate Public Health England and Skills for Care. Topic experts are invited for discussions on specific topics.

The panel does not comment on or influence the guideline recommendations outside of NICE's usual consultation processes and timelines.