

1. Context

7 Day services programme

The Government's Mandate to the NHS for 2016/17 sets a priority deliverable to:
"Roll out 4 priority clinical standards in all relevant specialties to 25% of the population in 2016/17; by 2020 roll out 7 day hospital services to 100% of the population (with progress also made on the other six standards identified by the NHS Services, Seven Days a Week Forum), so that patients receive the same standards of care in hospitals, seven days a week."

[NHS Services, Seven Days a Week Forum - Summary of Initial Findings, December 2013](#)

The 4 priority clinical standards are:

- **Standard 2 - Time to consultant review**
All emergency admissions must be seen and have a thorough clinical assessment by a suitable consultant as soon as possible but at the latest within 14 hours of admission to hospital. Although the December 2013 document stipulated that the standard was to be measured 'from time of arrival' this has now been changed to reflect the original source document for this standard (Royal College of Physicians acute care toolkit 4).
- **Standard 5 - Access to diagnostics**
Hospital inpatients must have scheduled seven-day access to diagnostic services such as x-ray, ultrasound, computerised tomography (CT), magnetic resonance imaging (MRI), echocardiography, endoscopy, bronchoscopy and pathology. Consultant-directed diagnostic tests and their reporting will be available seven days a week:
 - within 1 hour for critical patients;
 - within 12 hours for urgent patients; and
 - within 24 hours for non-urgent patients
- **Standard 6 - Access to consultant-directed interventions**
Hospital inpatients must have timely 24 hour access, seven days a week, to consultant-directed interventions that meet the relevant specialty guidelines, either on-site or through formally agreed networked arrangements with clear protocols, such as:
 - critical care;
 - interventional radiology;
 - interventional endoscopy; and
 - emergency general surgery.
- **Standard 8 - On-going review in high dependency areas**
All patients on the AMU, SAU, ICU and other high dependency areas must be seen and reviewed by a consultant twice daily, including all acutely ill patients directly transferred, or others who deteriorate. To maximise continuity of care consultants should be working multiple day blocks. Once transferred from the acute area of the hospital to a general ward patients should be reviewed during a consultant-delivered ward round at least once every 24 hours, seven days a week, unless it has been determined that this would not affect the patient's care pathway.

NHS England and NHS Improvement have joint responsibility for delivery, working with other organisations, to achieve this. To achieve the ambition of 25% of the population having access to 7 day hospital services by March 2017, a number of trusts have been identified to be early implementers. They are being supported to achieve the four priority clinical standards from the Sustainable Improvement Team. In response to clinical feedback, NHS Improvement has clarified the guidance on the four priority clinical standards for providers completing the self-assessment survey.

Seven-day services: clarification of the four priority clinical standards

Urgent and Emergency Care Review and the 5 urgent network specialist services

The U&EC Review aims to ensure that by 1st November 2017, 100% of five urgent network specialist services provide urgent care that meets the 4 prioritised 7DS clinical standards. These services are: major heart attack centres, paediatric intensive care units, major trauma centres, hyperacute stroke units and vascular surgery centres. The 23 U&EC Networks will have a key role in ensuring the services progress towards said achievement, and will be supported by the 4 regional U&EC PMOs.

2. Service-specific context

Data from the Sentinel Stroke National Audit Programme suggests that:

- Hyper acute stroke services are more likely to be clinically effective if they are admitting between 600 and 1500 cases per year
- Larger services are more likely to be financially viable than smaller services. Financial modelling suggests that the breakeven point if all patients were eligible for the best practice tariff is about 900 admissions per year
- There are major problems recruiting to consultant stroke physician posts across the UK. The only way that services are going to be able to deliver the specialist senior medical cover set out below will be to centralise care into larger units
- There is a tight correlation between high nurse levels and decreased mortality. There should be a minimum of 3 nurses per 10 beds at all times on hyperacute stroke units

3. Guidance

3.1 National Guidance i.e. NICE

[NICE CG68 – Stroke and transient ischaemic attack in over 16s](#) (2008 – reviewed May 2014)

This guideline covers interventions in the acute stage of a stroke or transient ischaemic attack (TIA). It offers the best clinical advice on the diagnosis and acute management of stroke and TIA in the 48 hours after onset of symptoms, although some interventions of up to 2 weeks are covered as well.

This guideline includes recommendations on:

- [recognising symptoms rapidly and diagnosis](#)
- [imaging in people who have had a suspected TIA or non-disabling stroke](#)
- [specialist care for people with acute stroke](#)
- [pharmacological treatments for people with acute stroke](#)
- [maintenance or restoration of homeostasis](#)
- [nutrition and hydration](#)
- [early mobilisation and optimum positioning of people with acute stroke](#)
- [avoiding aspiration pneumonia](#)
- [surgery for people with acute stroke](#)

One of the areas covered is specialist care for people with acute stroke. All people with suspected stroke should be admitted directly to a specialist acute stroke unit^[1] following initial assessment, either from the community or from the A&E department.

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Brain imaging should be performed immediately^[2] for people with acute stroke if any of the following apply:

- indications for thrombolysis or early anticoagulation treatment
- on anticoagulant treatment
- a known bleeding tendency
- a depressed level of consciousness (Glasgow Coma Score below 13)
- unexplained progressive or fluctuating symptoms
- papilloedema, neck stiffness or fever
- severe headache at onset of stroke symptoms.

^[1] An acute stroke unit is a discrete area in the hospital that is staffed by a specialist stroke multidisciplinary team. It has access to equipment for monitoring and rehabilitating patients. Regular multidisciplinary team meetings occur for goal setting.

^[2] The Guideline Development Group felt that 'immediately' is defined as 'ideally the next slot and definitely within 1 hour, whichever is sooner', in line with the National Stroke Strategy.

3.2 National Clinical Guidance e.g. Royal Colleges and Specialist Associations

[RCP - National clinical guideline for stroke - 5th Edition - 2016](#)

This guideline published in October 2016 is the most comprehensive and up to date document on how stroke care should be provided covering the whole pathway from pre-hospital care to long-term management. This guideline covers the management of adults (i.e. people aged over 16 years) with: stroke (ischaemic stroke and primary intracerebral haemorrhage) and transient ischaemic attack (TIA), including ocular or retinal stroke and amaurosis fugax:

- acute diagnosis and treatment
- prevention of complications
- all aspects of rehabilitation
- long-term care and support
- secondary prevention
- organisation of stroke services.

subarachnoid haemorrhage (SAH):

- immediate management required at an admitting hospital. The guideline does not cover surgical or neuroradiological interventions for SAH.

It is important to emphasise that acute stroke services are multidisciplinary and speech and language therapy, physio and OT should be available 7 days. The availability of early rehabilitation for stroke patients is important in terms of both efficacy and efficiency.

With regards to commissioning/organisation of services the key recommendations are:

Commissioning organisations should ensure that their commissioning portfolio includes the whole stroke pathway from prevention (including neurovascular services) through acute care, early rehabilitation, secondary prevention, early supported discharge, community rehabilitation, systematic follow-up, palliative care and long-term support.

Commissioners should commission acute stroke services in accordance with the recommendations in this guideline to provide:

- urgent brain imaging for patients with suspected acute stroke
- treatment with alteplase for patients with acute ischaemic stroke
- an endovascular service for patients with acute ischaemic stroke
- a neuroscience service (including neurosurgery and interventional radiology) to admit, investigate and manage patients referred with subarachnoid haemorrhage
- a neuroscience service delivering neurosurgical interventions for intracerebral haemorrhage, malignant cerebral oedema, and hydrocephalus
- direct admission of patients with acute stroke to a hyperacute stroke unit providing active management of physiological status and homeostasis within 4 hours of arrival at hospital
- an acute neurovascular service for the diagnosis and treatment of people with suspected TIA
- an acute vascular surgical service to investigate and manage patients with TIA and non-disabling stroke due to carotid artery stenosis.

Commissioners should commission stroke rehabilitation services in accordance with the recommendations in this guideline to provide:

- an inpatient stroke unit capable of providing stroke rehabilitation for all people with stroke admitted to hospital
- a specialist early supported discharge service to enable people with stroke to receive rehabilitation at home or in a care home
- specialist rehabilitation services capable of meeting the specific health, social and vocational needs of people with stroke of all ages
- services capable of delivering specialist rehabilitation in out-patient and community settings in liaison with in-patient services

Community medical services and ambulance services (including call handlers and primary care reception staff) should be trained to recognise people with symptoms indicating an acute stroke as an emergency requiring transfer to a hyperacute stroke centre.

People with suspected acute stroke (including when occurring in people already in hospital) should be admitted directly to a hyperacute stroke unit and be assessed for emergency stroke treatments by a specialist physician without delay. People with stroke should be treated on a specialist stroke unit throughout their hospital stay unless their stroke is not the predominant clinical problem. A hyperacute and/or acute stroke service should provide specialist medical, nursing, and rehabilitation staffing levels matching the recommendations in this guidance. A hyperacute stroke unit should have continuous access to a consultant with expertise in stroke medicine, with consultant review 7 days per week. A facility that provides treatment for in-patients with stroke should include:

- a geographically-defined unit
- a co-ordinated multi-disciplinary team that meets at least once a week for the exchange of information about in-patients with stroke
- information, advice and support for people with stroke and their family/carers
- management protocols for common problems, based upon the best available evidence
- close links and protocols for the transfer of care with other in-patient stroke services, early supported discharge teams and community services
- training for healthcare professionals in the specialty of stroke

3.3 Report on acute stroke care and the seven day standards in England – June 2016

The evidence for consultant led specialist acute stroke care is strong. The pathway should be similar for all stroke patients, not just those who may be eligible for thrombolysis. This report has further developed the core standards for a stroke service to meet the seven day standards to be as follows:

- Admission to a unit managing between 600-1500 stroke admissions per year
- Maximum 45 minute travel time from home to hospital
- 6 consultants with stroke expertise on rota
- Daily consultant ward rounds
- 100% patients continuous physiological monitoring
- 95% of patients admitted directly to hyperacute stroke unit from A&E
- Scanning standards (100% urgent patients scanned next slot and all within 24 hours)
- 50% appropriate patients thrombolysed within 30 mins; 90% within 45 mins of arrival
- Needs to be a financially viable service

Patients should expect to be taken to a unit where a specialist opinion is available and the evidence suggests this can be face to face or via a telemedicine link. The 5th edition of the National Clinical Guidelines for stroke published in October 2016 states that all patients suspected of acute stroke should receive a brain scan within 1 hour. However the previous recommendation was that some patients should be scanned immediately (maximum 1 hour) and everyone else within a maximum of 12 hours. The scans can be read by any clinician with sufficient experience, usually the consultant stroke physician again either in the hospital or using telemedicine.

All patients should be admitted on to a hyperacute stroke unit with physiological monitoring facilities for at least 48 hours after the acute event unless there has been a full recovery of symptoms and signs in which case the patients would be discharged home. The stroke unit should be the first ward the patient is admitted to after the emergency department and therefore the standard set is that patients should be on the stroke unit within a maximum of 4 hours after arrival at the front the door of the hospital. Thrombolysis should be provided for all appropriate patients as quickly as possible after stroke onset as this is a very time dependent treatment and a standard of 90% of patients receiving treatment within 45 minutes of arrival at the hospital is both achievable and would be an improvement on current practice.

Clot retrieval using intra-arterial devices is now backed by substantial evidence of efficacy and while access to this treatment must be made available it is unrealistic to expect services covering the whole of England 24 hours a day to be in place within the next 18 months but we should be aiming to deliver this standard within the time frame of the 5 year forward view.

4 Relevant data and intelligence including national audits

[Sentinel Stroke National Audit Programme \(SSNAP\)](#)

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5 Key areas of required attention

The main blocks to transformation are

- Consultant workforce. There are insufficient trained consultants in stroke medicine to provide 24/7 cover for all hospitals currently admitting acute stroke patients. 40% of hospital sites have at least 1 unfilled stroke consultant post, an increase of 14% since 2014 and some of the 2014 vacancies remain unfilled. Recruitment of registrars into training posts is proving difficult and even if all were filled the number of training posts is insufficient to address the shortage.
- Resistance from acute trusts to 'losing' their hyperacute stroke services
- Concern that centralisation of care will result in increased travel times for some populations, especially in rural areas resulting in delays in delivering intravenous thrombolysis and making visiting for relatives more difficult.
- Concerns from the ambulance trusts about the extra resources they would need if they were having to drive further
- Concern about making the system work where rapid repatriation would be required back to hospitals overflowing with acute admissions and resolving sometimes difficult issues around splitting the tariff
- In some services delays in transfer to an acute stroke unit because beds are occupied by non-stroke patients
- Issues with transfer of care to community/other providers leading to issues in capacity

Most of the issues around centralisation of care are manageable if it is remembered that what matters is that the patient gets the treatment that is most likely to deliver lower mortality and morbidity. Reconfiguration with the development of hub and spoke stroke services has been shown to be feasible and highly clinically effective in several parts of the country (London, Northumbria, Manchester as just 3 examples). The data presented by the State of the Nation report (below) also supports the centralisation of services. However delivering reconfiguration requires the will to make it work from the acute trusts and commissioners and robust clinical and managerial leadership.

Many parts of the country already have well developed plans for delivering the 7 day standards however progress in implementation is often slow. The current workforce is sufficient in the majority of units to provide a 7 day a week ward round. There will be a need to increase the frequency of ward rounds to twice daily to meet the 14hour target for first consultant review. In addition to meet this target with the current workforce it may be necessary to introduce a clinically justifiable flexibility in grading or speciality providing these ward rounds. However if this was provided through a defined protocol agreed by the responsible stroke physician then clinical standards should be maintained. Once patients are stepped down to an acute stroke unit after usually 3 days then the standard is a ward round 5 days a week and this is believed to be clinically appropriate for these patients.

[State of the Nation: stroke statistics](#)

Produced by the Stroke Association this document is an evidence-based and easy-to-understand set of statistics relating to stroke including incidence, mortality, prevalence, risk

factors and stroke care. Below are the statistics that support the case for transformation.

- Stroke patients who are cared for on stroke wards are more likely to be alive, independent and living at home after one year than if they are cared for on other wards
- 1.9 million neurons are lost every minute a stroke is untreated
- Around 6 in 10 stroke emergency attendances to A&E in England, Wales and Northern Ireland arrive 'out of time' or had a stroke during sleep so the onset time cannot be calculated
- Currently, only around 15% of stroke emergencies in England, Wales and Northern Ireland are eligible for thrombolysis treatment on admission to hospital
- The average door-to-needle time in England, Wales and Northern Ireland is 57 minutes (April – June 2014)
- Patients treated with thrombolysis quicker have better outcomes
- For every 1,000 patients treated with thrombolysis within three hours, about 100 more will be alive and live independently than 1,000 patients not treated with thrombolysis
- For every 1,000 patients treated with thrombolysis within six hours, about 150 more will be alive and live independently than 1,000 patients not treated with thrombolysis
- Use of thrombolysis in England, Wales and Northern Ireland increased from 1.8% in 2008 to 12.2% in 2014
- The average cost of care (acute and rehabilitation) per stroke patient is currently £23,315.
- Full implementation of stroke units and early supported discharge services nationwide increase average costs to £26,701, however 7% more stroke survivors will survive 10 years post-stroke
- The cost of one day on a hyper-acute stroke unit is £583
- This is twice the cost of a month of early supported discharge service (£213-£535)
- The cost of a single treatment of thrombolysis is approximately £480
- The cost of a weekly stay in a residential care home is £523

6 Other relevant documents

Healthcare for London - [acute commissioning guidance 2011](#)

This document was produced for London but contains some useful information with guidance on commissioning and tariff arrangements associated with the new acute stroke system in London. It summarises the case for change, model of care and the process undertaken to designate units. It then outlines the framework developed to encourage the correct system behaviours in order to achieve the intended benefits.

The framework includes:

- guidance on the tariff arrangements and how they apply
- contracting guidance for activity in hyper-acute stroke units, stroke units and TIA services
- the mechanism to incentivise and remunerate provider performance.

[Stroke Services - Guidance for STP's on recommended standards for Acute Stroke Services](#)

This paper provided to STPs covers the standards a stroke service should be providing, focusing on the pre-hospital and acute phase.

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