



Acute Stroke Care Policy

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Associated Documentation:

Acute Stroke Pathway 24/7

South Yorkshire Hyper Acute Stroke Pathway 24/7

Direct to Scan procedures

Mechanical Thrombectomy IFT process for LGI, STH and Hull

Assessment Conveyance and Referral of Patients (Emergency Operations)

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Staff Summary

This policy covers the

Role of Yorkshire Ambulance Service in improving outcomes for patients with symptoms of acute stroke
Up- to- date national information on acute stroke patient management
Partnership working to deliver high quality stroke care delivered across Yorkshire and the Humber
Hyper-acute Stroke Pathway and clinical assessment
Ambulance Response Programme
Responsibilities of Yorkshire Ambulance Service
New Stroke treatments - Thrombectomy

1.0 Introduction

- 1.1 Stroke is a major health problem in the UK. The National Institute of Health and Care Excellence (NICE) notes that: '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, figures from the Sentinel Stroke National Audit Programme 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. 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. Of stroke survivors, 1 in 12 have to move into a care home because of the effects of their stroke. There is also a substantial burden to families of people who have had a stroke in terms of informal unpaid care.' (NICE guideline NG128, 2019)
- 1.2 Yorkshire Ambulance Service (YAS) works collaboratively with health and social care partners to deliver an effective service to patients presenting with symptoms of an acute stroke to optimise clinical outcomes and reduce long term disability and death.

2.0 Purpose/Scope

- 2.1 This policy will:
- Set out how high quality stroke care is delivered, monitored and developed.
 - Outline the role and responsibilities of YAS clinicians in the assessment and management of patients with symptoms of a suspected acute stroke in line with best practice.
 - Outline how YAS works with partner organisations to develop timely assessment and treatment of patients with signs of a suspected acute stroke, developing timely access into stroke services across Yorkshire and Humber.

3.0 Process

3.1 Identification and management of patients presenting with symptoms of a stroke in the Emergency Operations Centre (EOC) and Integrated Urgent Care (IUC) call centre.

3.1.1 All patients contacting EOC or IUC with stroke symptoms must be assessed using NHS Pathways/Advance Medical Priority Dispatch System (AMPDS) algorithms to ensure they receive a timely response in accordance with the national Ambulance Response programme (ARP) standards.

3.1.1 Requests for an Inter Facility Transfer (IFT) to a stroke centre for thrombolysis or for mechanical thrombectomy will be managed through the national IFT process and matched to a Category 2 response.

3.2 Management of patients presenting with symptoms of a stroke during a face to face assessment:

3.2.1 All patients presenting with suspected stroke must be assessed using a validated stroke screening tool as per the current JRCALC UK Clinical Guidelines. The most sensitive features associated with diagnosing stroke in the pre-hospital setting are unilateral facial weakness, arm or leg weakness and/or speech disturbance (the 'FAST' test). (NICE guidance 128).

3.2.2 There are well-recognised limitations of the FAST test, and it does not identify all patients with acute stroke. People who are negative when screened with FAST but in whom stroke is still suspected should be treated as if they have stroke until the diagnosis has been excluded by a specialist stroke clinician (RCP 2016). Ambulance clinicians must therefore also be aware of other symptoms and signs that suspected stroke patients may present with, including sudden onset dizziness, confusion, severe headache with unknown cause, syncope, altered gait, and difficulty in speaking or understanding others. In YAS, these symptoms are included in the bespoke 'FASTO' assessment tool

taught to ambulance clinicians – the ‘O’ refers to these ‘Other’ symptoms of stroke that clinicians should assess for. The FASTO tool should be used by YAS clinicians to assess all patients presenting with suspected acute stroke.

- 3.2.3 All patients with sudden-onset symptoms suggestive of acute stroke (i.e., positive for any symptoms on the FASTO tool) should be considered for inclusion on the acute stroke pathway.
- 3.2.4 When a diagnosis of acute stroke is suspected, ambulance clinicians must place a pre-alert call to the nearest Acute/Comprehensive Stroke Centre (ASC/CSC), using the established stroke pre-alert system for that centre. Whenever possible, this pre-alert call should take place en-route to the ASC/CSC to minimise time on scene. If, during the call, the specialist stroke clinician determines that the patient is not eligible for the stroke pathway, ambulance clinicians should then divert to the most appropriate receiving healthcare facility for the patient’s presenting condition.
- 3.2.4 Ambulance clinicians must pre-alert any patient presenting with suspected stroke within 12 hours of symptom onset; however, some centres will accept patients with longer times from symptom onset to presentation, and ambulance clinicians should follow the guidance in the relevant local YAS stroke pathway when determining whether a patient requires a pre-alert call.
- 3.2.4 Ambulance clinicians must exclude hypoglycaemia in patients with sudden onset of neurological symptoms.
- 3.2.5 Ambulance clinicians must minimise time on scene if they suspect an acute stroke.
- 3.2.6 Ambulance clinicians must document the FASTO assessment, time of onset of symptoms, affected side of any weakness, blood glucose measurement, blood pressure measurement and conveyance and pre-alert to ASC/CSC, in addition to the existing health records standards.

- 3.2.7 Ambulance clinicians must follow the relevant YAS Acute Stroke Pathway for the locality in which the patient presents, and all patients who meet the criteria and are accepted must be conveyed as a TIME CRITICAL emergency to an ASC/CSC, and direct to CT scan if available.
- 3.2.8 Patients presenting with a suspected Transient Ischaemic Attack (TIA) whose symptoms have not fully resolved or are recurrent must be managed in line with JRCALC guidance and the relevant stroke pathway and transported to an ASC/CSC. Patients presenting with a suspected TIA whose symptoms have fully resolved and are not recurrent must be conveyed to the nearest Emergency Department for further assessment, treatment and referral.
- 3.2.9 Where a local pilot or trial involving stroke/TIA assessment, treatment or referral is in place that deviates from this policy, ambulance clinicians must follow the relevant guidance and procedures in place for that pilot or trial and comply with any additional requirements for documentation or reporting.
- 3.2.10 Ambulance staff tasked to support an Inter-Facility Transfer of a patient for thrombectomy should follow the relevant Mechanical Thrombectomy procedure for the receiving hospital, and ensure that they receive a full handover including contact details for both the sending and receiving units before departing with the patient. No patients are to be conveyed on an Inter-Facility Transfer without a hospital staff escort if hospital treatment is to be continued during transfer (e.g., alteplase infusion) – all hospital treatment must be stopped/paused prior to transfer if the patient is travelling without a hospital escort.
- 3.2.11 At present, there are no validated pre-hospital assessment tools that accurately predict large vessel occlusions (LVO) which may be eligible for thrombectomy. In the absence of such tools, YAS does not support the process of bypassing a local ASC providing thrombolysis in favour of direct conveyance to a CSC with both thrombolysis and thrombectomy capabilities, as this has the potential to delay treatment for acute stroke and result in poorer patient outcomes.

However, there are a number of international trials currently underway to investigate pre-hospital assessment for LVO, and should the evidence demonstrate a benefit, YAS will work with ISDNs and acute hospitals to update the stroke pathway and this policy to reflect the latest best practice.

3.3 Development and maintenance of stroke care pathway

- 3.3.1 The Yorkshire and Humber Cardiovascular Disease network is tasked by NHS England primarily with coordinating all health and social care services to focus the delivery of the National Stroke Strategy. Networks are made up of senior clinicians, ICB representatives with responsibility for stroke service development, and have sign-off responsibility for their organisation.
- 3.3.2 At the time of writing, there are established Integrated Stroke Delivery Networks (ISDNs) aligned to each of the three ICS areas in Yorkshire and the Humber with responsibility for oversight of integrated stroke care in the region. YAS is responsible for ensuring ongoing engagement with the ISDNs and system partners in relation to developments in stroke care, monitoring and evaluation of the stroke pathway, and implementation of best practice.
- 3.3.3 Sign-off of the single stroke pathway was agreed in August 2012 through all the clinical Network boards, YAS Clinical Governance Group and issued to YAS clinical staff. The subsequent changes to the pathway have been agreed through the ISDNs and at local level as part of the reconfiguration work. The acute trusts providing ASC/CSC services are responsible for setting the acceptance criteria for their service. The designated YAS Stroke Lead (currently the Lead Clinical Pathways Manager or his/her deputy) will continue to monitor and update the acute stroke pathway as required by the acute trusts and ISDNs, and incorporate latest best-practice evidence on stroke care, including the development of thrombectomy services and improved pre-hospital assessment tools and technologies.
- 3.3.4 YAS, acute hospital Trusts and the ISDNs will continue to work collaboratively to improve the care provided to patients presenting with acute stroke, in line

with NICE, JRCALC, RCP and other best-practice evidence, including by seeking ways to improve the early recognition, early dispatch, early prehospital care and triage, and early treatment for patients with acute stroke (Rudd et al 2020).

4.0 Consultation Process

- 4.1 This policy has been reviewed and reflects the changes to practice and pathways made following consultation with the managed clinical network. These networks are comprised of other healthcare providers and their patient representatives and provide advice to the Integrated Care System ICS on system-wide changes to improve stroke care and patient outcomes. YAS are part of this forum and advise on the pre-hospital element of the pathway.
- 4.2 Pathway procedures are tested for clarity and ambiguity by operational staff, through clinical advisory groups, Clinical Quality Development Forum (CQDF) and feedback gained through staff engagement at road show events; this feedback allows for the pathway to be amended for use if needed before implementation.

5.0 Approval Process

- 5.1 The Clinical Governance Group is the responsible committee for this policy and the policy is approved by the Trust Management Group.
- 5.2 The Acute Stroke Pathway must be approved by the Clinical Governance Group following any update and prior to publication.

6.0 Training expectations for staff

- 6.1. All patient facing staff must be trained and competent to identify and manage patients presenting with a suspected stroke as per their scope of practice. All staff must be trained and competent in the FASTO assessment.
- 6.2 All non-patient facing clinicians and all staff involved in providing patient care (including those working in IUC and EOC) are responsible for ensuring they remain up to date with stroke pathways and any changes that occur.

7.0 Implementation Plan

- 7.1 The stroke pathways are available to access on YAS 'Pulse' in the Acute Referral Pathways section under Clinical Pathways, and on the JRCALC Plus app. These are current and version controlled and any previous versions archived. Changes, version control and upload of new documents are managed by the Clinical Pathways Team.
- 7.2 The latest approved version of this Policy will be posted on the Trust Intranet site.
- 7.3 Changes are communicated by the stroke lead through Corporate Communications and via clinical managers, team leaders and operational leads. The stroke pathway and policy information is also available through the clinical hub.

8.0 Monitoring compliance with this Policy

- 8.1 Organisational participation with managed clinical networks

Attendance and participation at clinical network meetings and updates on changes and progress is monitored via the Lead Pathways Manager.

- 8.2 Minimum standards for stroke care

The stroke care standards are measured through the National Ambulance Clinical Quality Indicators (ACQI) using the Sentinel Stroke National Audit Programme

(SSNAP). Stroke records are supplied by ambulance services and acute trusts to SSNAP who then send aggregated data to NHS England for publication. The stroke standards consist of the stroke diagnostic bundle (documentation of a FAST assessment, and blood glucose, systolic and diastolic blood pressure recorded), and the time from call connect to hospital arrival, time from hospital arrival to CT scan, and time from hospital arrival to thrombolysis. The YAS Clinical Informatics and Audit team is responsible for submitting ACQIs and auditing clinical practice against the national standards.

8.3 Monitoring incidents and complaints

All incidents and complaints regarding stroke care and the stroke pathway must be recorded in Datix and identified as a patient pathway concern.

9.0 Roles & Responsibilities

9.1 Clinical Governance Group (CGG)

CGG will have responsibility for this policy and will ensure that all new process changes for the delivery and monitoring of acute stroke care are reviewed and approved prior to implementation.

9.2 Executive Medical Director

The Executive Medical Director is responsible for safe patient care and clinical quality.

9.3 Lead Pathways Manager

The Lead Pathways Manager is the Trust Stroke Lead and is responsible for developing and producing this policy and the stroke pathways. They are responsible for the review of NICE and other relevant guidance to ensure practice is current and changes to clinical skills requirements are communicated through workforce and education.

The Lead Pathways Manager is the Trust representative on stroke at regional networks. They provide expert advice on the pre-hospital management of suspected strokes to the organisation and at external meetings. The Lead Pathways Manager may request that suitable clinically-qualified colleagues (for example the Consultant Practitioner for each locality) deputise in this role at local networks.

The Lead Pathways Manager is responsible for monitoring and responding to patient complaints, incidents and service to service feedback regarding the stroke pathway.

The Lead Pathways Manager – jointly with the YAS Research team, YAS locality clinical leads (Consultant Practitioners, Area Clinical Leads, Area Governance Leads), YAS Quality Improvement team, and/or ISDNs – is responsible for the planning, delivery, monitoring and governance of any stroke- or TIA-related pilots and trials taking place in YAS.

9.4 YAS Academy

The YAS Academy is responsible for delivery of adequate training incorporating the current guidance on assessment and management of patients with stroke as per JRCALC. The minimum standard of assessment for stroke is the Face Arm Speech assessment. In addition all clinical staff should be made aware as part of the patient assessment process to consider a stroke when a patient presents with other less common symptoms including unilateral weakness of upper and lower limb, vision changes or loss of vision, acute severe headache with unknown cause, acute dizziness/syncope or altered gait, sudden confusion, and difficulty in speaking or understanding others – the FASTO assessment tool.

9.5 Locality Clinical Leads, Consultant Practitioners and Operational Managers

Locality teams are responsible for implementation of the YAS Investigations and Learning Policy in relation to stroke care, and for monitoring and improving the delivery and quality of clinical care for stroke patients in their area.

9.6 YAS clinicians

YAS clinicians are responsible for providing high quality, person centred, evidence based care for patients with a suspected stroke. They are responsible for providing a systematic clinical assessment of the patient, including a FAST assessment in all patients presenting with a suspected stroke, adherence with the diagnostic care bundle, minimising on scene time, adherence to the stroke pathway and rapid conveyance and pre-alert to an ASC/CSC.

10.0 References

- Joint Royal Colleges Ambulance Liaison Committee (JRCALC) UK 2022 Ambulance Clinical Practice Guideline www.jrcalc.org.uk
- NHS England (2019) NHS Long Term Plan www.longtermplan.nhs.uk
- NICE (2019) *Stroke and Transient Ischaemic Attack in over 16s: diagnosis and initial management*. <https://www.nice.org.uk/guidance/ng128>
- Royal College of Physicians - Intercollegiate Stroke Working Party (2016) *National Clinical Guideline for Stroke*. <https://www.rcplondon.ac.uk/guidelines-policy/stroke-guidelines>
- Rudd, A G et al. "Utstein recommendation for emergency stroke care." *International journal of stroke : official journal of the International Stroke Society* vol. 15,5 (2020): 555-564. doi:10.1177/1747493020915135

11.0 Definitions

11.1 Stroke

A stroke occurs when blood flow to part of the brain is interrupted, causing damage to the brain tissue. The two main causes of stroke are blood clots, blocking arteries

(ischemic 85% of all strokes) and arteries rupturing (haemorrhagic 15% of strokes). The diagnosis and type of stroke is confirmed using a CT image of the brain.

11.2 Transient Ischaemic Attack (TIA)

TIA is like a stroke but the symptoms resolve within 24 hrs. There are high and low risk groups identified through focused assessment tools, these patient groups are managed differently by specialists. High risk TIA is referred to hospital for early investigation and treatment to reduce the risk of the developing a full stroke. YAS clinicians refer all patients with any sign of stroke to an acute stroke service to ensure all patients receive a timely assessment and specialist treatment.

11.3 Stroke Thrombolysis

Thrombolysis (clot busting) is a treatment that has proven to be effective in treating a stroke caused by a clot, if given within four and a half hours of onset of symptoms. Using this drug early makes it more likely that patients will make a good recovery from their stroke. The drug called rt-PA is given through a drip over one hour and works by dissolving the clot that has blocked the artery and stopped the supply of blood to part of the brain.

11.4 Stroke Thrombectomy

An estimated 8,000 stroke patients a year are set to benefit from an advanced emergency treatment which can significantly decrease the risk of long-term disability.

Mechanical clot retrieval for treating acute ischemic stroke aims to remove the obstructing blood clot or other material from arteries within the brain, restoring blood flow to the brain and minimizing brain tissue damage. A delivery catheter is inserted usually through the femoral artery in the groin, and advanced into the occluded artery using X-ray. Many patients will also have had initial treatment with intravenous thrombolysis.

11.5 Face Arm Speech Time to call 999 (FAST)

The FAST test is the nationally accepted test used to identify those patients with a potential stroke as an emergency. Used by the both the public and health

professionals it aims to rapidly identify patients with a sudden onset of any one the neurological symptoms, and transport to a centre with hyper-acute stroke care facilities. Both EOC and all YAS frontline clinicians use in addition to FAST include those with sudden weakness in a lower limb and/or unilateral vision loss, as a potential sign of stroke.