Australian Commission on Safety and Quality in Health Care

Clinical Care Standards

Stroke Clinical Care Standard

Information for healthcare services

About the *Stroke Clinical Care Standard*

The *Stroke Clinical Care Standard* aims to improve the assessment, management and transitions of care for patients with stroke to increase their likelihood of survival and recovery while reducing their risk of another stroke.

It relates to the care that adult patients should receive when they have, or are suspected of having, an ischaemic stroke or intracerebral haemorrhage. This includes patients who have a stroke while in hospital. It covers the care provided from pre-hospital emergency service contact through hospital admission, discharge to the community and follow-up review within six months.

> This information sheet provides a brief guide to the *Stroke Clinical Care Standard* for health care service leaders and administrators to inform them of the policies, procedures, and organisational factors that can enable the delivery of high-quality care for stroke.

The *Stroke Clinical Care Standard* contains:

- eight quality statements that describe the care that should be provided to people who have had a stroke
- a set of indicators to support monitoring of the care recommended in this clinical care standard and to support local quality improvement activities.

The definitions required to collect and calculate indicator data are specified online at: meteor.aihw.gov.au/content/817660.

Monitoring the implementation of this Clinical Care Standard will help organisations to meet some of the requirements of the National Safety and Quality Health Service (NSQHS) Standards.

- See Fact sheet for health service organisations and accrediting agencies: Applicability of Clinical Care Standards.

Quality statement 1. Early assessment and urgent transport to hospital

A person with suspected stroke is assessed at first clinical contact using a validated stroke screening tool, such as the F.A.S.T. (Face, Arms, Speech and Time) test. When acute stroke is suspected, the person is transported immediately to a hospital capable of providing appropriate time-critical therapy. The hospital is pre-notified to enable rapid access to care.

Ensure that protocols support the use of a validated screening tool, such as F.A.S.T., to enable the appropriate triage and transport of people with suspected stroke to an appropriate hospital as described in the National Acute Stroke Services Framework. The National Acute Stroke Services Framework describes capabilities of appropriate stroke services such as for rapid assessment, on-site CT imaging and protocols for providing timely hyperacute therapy such as thrombolysis.

Note that F.A.S.T. is a useful tool to identify stroke, including for non-clinicians, however other tools may have greater accuracy in detecting acute ischaemic stroke (see Related Resources).

Ambulance and retrieval services should use screening tools to identify patients with suspected stroke and ensure that they are treated as a time-critical emergency. This includes priority dispatch of ambulances and transport of patients directly to hospitals capable of providing appropriate time-critical stroke therapies. Ambulances should have agreed bypass protocols to transport people to a Comprehensive Stroke Centre (CSC) in the case of patients with suspected large vessel occlusion.

Emergency departments can use screening tools to trigger urgent assessment of patients who arrive at hospital independently. More detailed stroke severity scales (for example, National Institutes of Health Stroke Scale [NIHSS]) may be used in hospital but are not recommended in the pre-hospital setting.

Healthcare services without onsite medical stroke specialists should ensure that clinicians are aware of the local stroke network and referral pathways, which should include access to telestroke to support decision-making.

Hospitals capable of providing time-critical stroke therapies should have effective protocols in place to respond to pre-notification of patients with suspected stroke to enable rapid assessment and treatment. This includes activating ‘Code Stroke’ alert systems, facilitating access to CT imaging for urgent assessment, obtaining medical records and a best possible medication history, and contacting next of kin for more details.

Indicators for local monitoring

Indicator 1a: Proportion of patients with a suspected stroke who were assessed by ambulance services using a validated stroke screening tool.

Indicator 1b: Median time from first clinical contact to arrival at a hospital capable of providing appropriate time-critical stroke therapy for patients with a suspected stroke.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Explain the rationale for assessment, tests, transport, and interventions to the patient, their family and their support people in a culturally safe way.

Recognise and address individuals' potential barriers to care by, for example, providing culturally appropriate stroke awareness and recognition information to the community and suitable ways to access rapid care. This is especially important for people whose access to services and infrastructure is limited.

Recognise and respond to any concerns associated with diagnosis and treatment, including the potential need for hospitalisation off Country. Where clinically safe, prioritise care on Country and minimise unnecessary transfers. If transfer is required, plan early for return to Country to support wellbeing. Ask for consent to transport to hospital, which may involve consulting the patient's family and community members.

Ensure processes for ambulance and hospital intake provide an opportunity for patients to self-identify and for services to capture and act on identification data.

Related resources for healthcare services

Validated stroke screening tools include (in alphabetical order):

- BE-FAST – Balance, Eyes, Face, Arms, Speech, Time
- CRESST – Canberra pREhospital Stroke Screening Tool
- F.A.S.T. – Face, Arms, Speech, Time
- MASS – Melbourne Ambulance Stroke Screen
- ROSIER – Recognition of Stroke in the Emergency Room

Other validated tools used in the assessment of stroke include (in alphabetical order):

- ACT-FAST – for identification of large vessel occlusion
- HUNTER-8 or NIHSS-8 – for quantifying the impairment caused by stroke
- Modified Rankin Scale or mRS – for measuring premorbid function
- RACE – Rapid Arterial Occlusion Evaluation (large vessel occlusion identification tool)

Quality statement 2. Time-critical therapy

A patient with acute stroke receives time-critical therapy urgently and in accordance with the Living Clinical Guidelines for Stroke Management. A patient with ischaemic stroke suitable for reperfusion therapy receives timely thrombolysis and/or endovascular thrombectomy. A patient with intracerebral haemorrhage receives urgent blood-pressure-lowering therapy and/or anticoagulation reversal where appropriate.

Ensure clinicians know of and use the Living Clinical Guidelines for Stroke Management when managing suspected stroke.

Have systems, protocols and processes in place to offer time-critical imaging and treatment for stroke in line with your organisation's stroke capability and within the targets and time frames recommended in the Living Clinical Guidelines for Stroke Management. Protocols should include pathways for time-critical therapy for both ischaemic stroke and intracerebral haemorrhage.

Healthcare services that transfer patients to a Comprehensive Stroke Centre for endovascular thrombectomy must establish protocols to ensure timely and coordinated transfer of care, so that patients arrive at the service without delay and are able to receive the procedure as soon as clinically appropriate. Ensure all imaging (including CT angiogram) is transferred to the treating hospital rapidly to facilitate treatment on arrival.

Ensure there are local referral pathways for neurosurgical consultation for patients with intracerebral haemorrhage or who may require neurosurgical interventions.

Monitor achievement of recommended timeframes and address barriers.

Indicators for local monitoring

Intravenous thrombolytic therapy

Indicator 2a: Proportion of patients with an ischaemic stroke who received intravenous thrombolytic therapy.

Indicator 2b: Median time from arrival at hospital to treatment with an intravenous thrombolytic agent for patients with an ischaemic stroke.

Endovascular thrombectomy

Indicator 2c: Proportion of patients with an ischaemic stroke who received endovascular thrombectomy.

Indicator 2d: Proportion of patients with an ischaemic stroke who were transferred for endovascular thrombectomy.

Indicator 2e: Median time from arrival at hospital to departure for patients with an ischaemic stroke transferred for endovascular thrombectomy.

Indicator 2f: Median time from arrival at hospital to endovascular thrombectomy for patients with an ischaemic stroke who had endovascular thrombectomy.

Acute intracerebral haemorrhage management

Indicator 2g: Median time from arrival at hospital to initiation of antihypertensive medicine for patients with an acute intracerebral haemorrhage and elevated systolic blood pressure on presentation.

Indicator 2h: Median time from arrival at hospital to initiation of anticoagulation reversal for patients with an acute intracerebral haemorrhage taking an anticoagulant.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Provide the person with access to Aboriginal and Torres Strait Islander Liaison Officers or other relevant workers and clinicians who can discuss potential concerns about urgent treatment, such as reperfusion therapy, either in the patient's language or in a way that is culturally safe for the person.

Quality statement 3. Stroke unit care

A patient with stroke is promptly transferred to a stroke unit, as defined in the National Acute Stroke Services Framework. The patient receives early, protocolised care to prevent complications and maximise recovery.

Ensure that systems and infrastructure are in place for patients with stroke to be treated by a multidisciplinary team in a stroke unit as soon as possible. Ensure that these comply with the recommendations to enable best practice care outlined in the National Acute Stroke Services Framework. The Australian Stroke Coalition has a system for stroke unit certification in Australian hospitals, which healthcare services can participate in.

ICUs, HDUs or similar locations are appropriate alternatives to stroke unit care for patients requiring critical care management.

If there is no stroke unit at the healthcare service, ensure patients receive guideline-recommended care and protocols in the nearest similar unit able to meet the requirements for stroke unit care. This may include management on the ward where the patient is located, with access to a telestroke service and allied health assessment.

Ensure local protocols align with the current Living Clinical Guidelines for Stroke Management. Protocols should include:

- screening for and management of swallowing difficulties
- monitoring and prompt early management of pyrexia and hyperglycaemia for the first 72 hours of care
- screening for communication difficulties
- ensuring appropriate VTE prophylaxis
- escalation pathways for patients with temperature and glucose outside recommended parameters or with swallowing or communication difficulties identified on screening
- other recommended protocols for stroke unit care.

Ensure relevant staff are trained to use validated screening tools to screen for swallowing and communication difficulties.

Indicators for local monitoring

Indicator 3a: Proportion of patients with a stroke who had documented treatment in a stroke unit.

Indicator 3b: Median time from arrival at hospital to admission to a stroke unit for patients with a stroke.

Indicator 3c: Evidence of local arrangements to ensure patients with a stroke receive early protocolised care in accordance with the current Living Clinical Guidelines for Stroke Management or evidence-based, locally endorsed guidelines.

The local arrangements should specify:

- protocols for monitoring and prompt management of pyrexia, hyperglycaemia and swallowing difficulties
- escalation pathways for pyrexia, hyperglycaemia, and swallowing difficulties
- protocols for screening for communication difficulties and further assessment as required
- protocols to ensure appropriate venous thromboembolism prophylaxis
- processes to ensure relevant staff are trained in the use of the validated tools used at the service to screen for swallowing and communication difficulties
- processes to support implementation and monitoring of the local arrangements.

Indicator 3d: Proportion of patients with a stroke who had a swallow screen or assessment completed before they were given any food, fluids or oral medication.

Quality statement 4. Rehabilitation

A patient's initial rehabilitation needs are assessed by a multidisciplinary team as early as possible and within 48 hours of hospital admission for stroke. Individualised, guideline-recommended rehabilitation begins as soon as clinically appropriate during the admission. Rehabilitation needs are continually assessed and documented. Arrangements for ongoing rehabilitation are made before discharge.

Ensure that policies and procedures are in place for a multidisciplinary team to assess and document the initial rehabilitation needs of patients with stroke within 48 hours of admission to hospital, using a validated assessment tool to guide planning and early initiation of rehabilitation. Ensure clinicians record and discuss patient deficits, current impairment, activity limitations, rehabilitation needs, and functional status. Also ensure that the multidisciplinary team discusses findings with patients and their families or support people.

Ensure a multidisciplinary team, including medical, nursing and allied health professionals, is available (face-to-face or via telehealth) to:

- commence early and timely rehabilitation in line with the Living Clinical Guidelines for Stroke Management
- re-assess rehabilitation needs (including mood and cognition)
- make plans and arrangements for ongoing rehabilitation before discharge together with patients and their families or support people.

Indicators for local monitoring

Indicator 4a: Proportion of patients with a stroke seen by a physiotherapist within 48 hours of admission to hospital.

Indicator 4b: Proportion of patients with a stroke seen by a speech pathologist within 48 hours of admission to hospital.

Indicator 4c: Proportion of patients with a stroke seen by an occupational therapist within 48 hours of admission to hospital.

Indicator 4d: Proportion of patients with a stroke whose ongoing rehabilitation needs were assessed by a multidisciplinary team and documented before discharge to the community.

Indicator 4e: Proportion of patients with a stroke who were referred for ongoing rehabilitation before discharge from hospital.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Develop streamlined referral pathways back to the community, particularly for those from regional, rural or remote communities who have received care away from home. Liaise with primary care clinics, including Aboriginal and Torres Strait Islander Community Controlled Health Organisations (ACCHOs), to ensure arrangements are in place for travel and for safe transition back to the community, including arrangements for ongoing rehabilitation as needed.

Quality statement 5. Minimising risk of another stroke

While in hospital, a patient undergoes a comprehensive assessment to determine the probable cause of their stroke. This assessment informs their ongoing care, including individualised treatment and education to promote healthy living and reduce their risk of another stroke.

Ensure that processes are in place to investigate the mechanism of the patient's stroke during hospital admission and arrange any recommended follow-up investigations before discharge to enable appropriate follow-up care. Support appropriate communication with patients' usual general practice teams to obtain relevant history.

Ensure that systems are in place for preventive therapies to be prescribed or recommended in line with current guidelines and documented before patients with stroke are discharged.

Ensure that processes are in place for multidisciplinary input to assess the risk of recurrence and educate patients about reducing their risk of another stroke. Ensure that written information about reducing stroke risk is available and suitable to the patient population.

Indicators for local monitoring

Indicator 5a: Proportion of patients with a stroke prescribed an antihypertensive medicine on discharge from hospital.

Indicator 5b: Proportion of patients with an ischaemic stroke prescribed a lipid-lowering medicine on discharge from hospital.

Indicator 5c: Proportion of patients with an ischaemic stroke and atrial fibrillation prescribed an oral anticoagulant medicine on discharge from hospital.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Provide information in a way that reflects the literacy, language, and cultural needs of the individual patient. Information should be provided in a way that builds understanding, engagement, and empowerment to manage and reduce their ongoing risk of another stroke.

Include family, kin, community members or trusted healthcare providers in discussions, if the patient desires this. Allow time to build rapport and trust and for explanation and questions. Consider the need for multiple encounters and methods of communication, and for appropriate handover to the person's usual health service in the community.

Written and audiovisual material for Aboriginal and Torres Strait Islander people should be developed in partnership with the community and people with expertise in Aboriginal and Torres Strait Islander health.

Quality statement 6. Practical assistance for families and support people

The family and support people of a patient with stroke are provided with information and practical assistance so that they can safely and confidently support the patient to manage their daily needs.

Ensure that processes and resources are in place to provide information and assistance to the family and support people of patients with stroke before their discharge. This should enable them to safely and confidently manage the patient's changed care needs. This should not replace arrangements for appropriate home-based services.

All patients, families and support people should receive:

- information about new individual patient care needs
- practical assistance to meet these needs (including personal care techniques, support with communication, use of new assistive equipment, modification of food and drink, mobilisation, safe transfers, and changes in behaviour)
- information and support to access carer financial support, NDIS or My Aged Care, and guidance on health and financial decision-making responsibilities
- details on how to access support services (for example, respite care).

Also offer information and practical support to patients who do not have family or support people to assist them on discharge but are considered able to live independently after a stroke. Ensure that systems are in place for these patients to receive information, advice, and support (in a way that they can understand and access) so they can safely and confidently manage their daily needs.

Indicator for local monitoring

Indicator 6a: Proportion of patients with a stroke where at least one family member or support person received information and practical assistance to support the patient with their new daily needs before discharge to the community.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Provide culturally appropriate and co-designed information resources (in local language as appropriate) and the opportunity to have questions answered by a trusted health professional.

Quality statement 7. Individualised care plan

Before leaving hospital, a patient with stroke and their family or support people are involved in the development of an individualised care plan that describes the ongoing care required. This care plan is given to the patient, their general practice and their ongoing rehabilitation team at the time of discharge.

Ensure that processes and resources are in place for clinicians to develop an individualised care plan for patients with stroke before they leave the hospital, in collaboration with the patient and their family or support people. Ensure that systems allow for the individualised care plan to be provided at the time of discharge in a format appropriate to the patient's general practice and, where appropriate, their ongoing rehabilitation team or aged care provider.

Care plans for patients with stroke must follow a consistent format that includes:

- results from relevant rehabilitation assessments, ongoing rehabilitation needs and goals, and a plan to achieve these (see Quality statement 4)
- secondary prevention recommendations discussed, such as medicines and lifestyle modifications (see Quality statement 5)
- information discussed and practical assistance for managing daily activities, advice on when the person may resume driving a vehicle, and contact details for support services available in the community (see Quality statement 6)
- details of referrals and follow-up appointments.

The patient must receive a copy of the individualised care plan to take with them before being discharged.

Ensure that clinicians make referrals and appointments and that these are communicated to patients and their families or support people, general practice and, where appropriate, their rehabilitation team and aged care providers. Referrals and arrangements should be made for:

- any pending investigations
- the patient's general practice
- the patient's rehabilitation team (if they will be receiving home-based therapy services, outpatient rehabilitation or telerehabilitation)
- a follow-up appointment within six months of diagnosis with appropriate multidisciplinary team input (see Quality statement 8).

Ensure that appropriate systems are in place to support the discharge process and appropriate follow-up care. This includes establishing links with primary health, community health and rehabilitation services to enable potential review by specialist rehabilitation services or periodic intensive rehabilitation when significant changes are identified on regular patient review post-discharge.

Indicator for local monitoring

Indicator 7a: Proportion of patients with a stroke who had an individualised care plan on discharge to the community.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Provide documentation, including results, follow-up appointments and future management, to the patient's general practice, primary healthcare service or Aboriginal and Torres Strait Islander Community Controlled Health Organisation (ACCHO) in a timely fashion.

Give the patient the individualised care plan and discuss it with them and their family or support people in a culturally appropriate way. See the Stroke Foundation's Our Stroke Journey.

Quality statement 8. Follow-up assessment and review

A patient who has had a stroke receives a follow-up assessment and review, with appropriate multidisciplinary team input, within six months of their stroke diagnosis. This is arranged before discharge.

Have systems and resources in place to arrange for patients to receive a comprehensive follow-up appointment within six months of their stroke diagnosis and with the most appropriate multidisciplinary team for their needs. This may be the acute stroke or rehabilitation service.

The follow-up appointment may be face-to-face or via telehealth and should address, as required, the following domains:

- medical and secondary prevention (including a review of medication, lifestyle modifications, and any pending investigation results)
- re-assessment of rehabilitation needs, goal and progress
- functional status (assessed and recorded using a validated tool)
- psychosocial and vocational needs
- return-to-work plan
- care coordination (including a review of the effectiveness of existing referrals and identifying the need for further appointments with allied health, rehabilitation, or other community support services.

Ensure that processes are in place for communicating the updated care plan to patients, their general practice and their rehabilitation team at the end of the appointment.

Indicator for local monitoring

Indicator 8a: Proportion of patients with a stroke who participated in a follow-up review within six months of the diagnosis of their stroke.

Cultural safety and equity for Aboriginal and Torres Strait Islander people

Liaise with primary care clinics, including Aboriginal and Torres Strait Islander Community Controlled Health Organisations (ACCHOs), to ensure travel arrangements are in place to support attendance at follow-up appointments. Find alternative ways to contact patients if they do not have regular access to a phone, email or postage delivery service to receive information about follow-up appointments.

Ensure that communication and materials are culturally and linguistically appropriate for the patient to support participation in stroke management and rehabilitation.

For more information

Find out more about the *Stroke Clinical Care Standard* and other resources for consumers, clinicians and healthcare services.

Scan the QR code or see: safetyandquality.gov.au/stroke-ccs