AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Clinical Care Standards

Acute Stroke

Clinical Care Standard

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The Australian Commission on Safety and Quality in Health Care has produced this clinical care standard to support the delivery of appropriate care for a defined condition. The clinical care standard is based on the best evidence available at the time of development. Healthcare professionals are advised to use clinical discretion and consideration of the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian, when applying information contained within the clinical care standard. Consumers should use the clinical care standard as a guide to inform discussions with their healthcare professionals about the applicability of the clinical care standard to their individual condition.

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Before a patient with stroke leaves the hospital, they are involved in the development of an individualised care plan that describes the ongoing care that the patient will require after they leave hospital. The plan includes rehabilitation goals, lifestyle modifications and medicines needed to manage risk factors, any equipment they need, follow-up appointments, and contact details for ongoing support services available in the community. This plan is provided to the patient before they leave hospital, and to their general practitioner or ongoing clinical provider within 48 hours of discharge.

Indicators for local monitoring

Indicators to support monitoring of the care described in this clinical care standard have been developed for the following quality statements:

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Clinicians and health service organisations can use these indicators to monitor their implementation of the care described in each quality statement and the clinical care standard as a whole. See Appendix A.

The full specifications are available at **meteor.aihw.gov.au/content/index.phtml/itemId/719072**

About the clinical care standards

Clinical care standards aim to support the delivery of appropriate evidence-based clinical care, and promote shared decision making between patients, carers and clinicians.

A clinical care standard contains a small number of quality statements that describe the clinical care that a patient should be offered for a specific clinical condition or when undergoing a specific procedure. It is based on the best available evidence at the time of development. Some of the quality statements are linked to indicators that can be used by health service organisations to monitor how well they are implementing the care recommended in the clinical care standard.

A clinical care standard differs from, and is not intended to be, a clinical practice guideline. Rather than describing all the components of care recommended for managing a clinical condition or performing a certain procedure, a clinical care standard addresses areas of the patient pathway where the need for quality improvement is greatest.

Clinical care standards aim to support key groups of people in the healthcare system by:

- Educating the public about the care that should be offered by the healthcare system, and helping people to make informed treatment decisions in partnership with their clinicians
- Providing clear information to clinicians to help them make decisions about appropriate care
- Outlining the systems required by health service organisations so that they are better able to review their performance and make improvements in the care that they provide.

The Australian Commission on Safety and Quality in Health Care (the Commission) developed the Acute Stroke Clinical Care Standard in collaboration with consumers, clinicians, researchers and health service organisations. The clinical care standard was first published in 2015. It complements existing efforts, including state- and territory-based initiatives, that support the provision of care for acute stroke.

For more information about this clinical care standard, visit **www.safetyandquality.gov.au/ccs**.

Updates in 2019

A review of the evidence sources used to develop the original Acute Stroke Clinical Care Standard was undertaken by the Commission in 2017–18. Because the evidence base for the standard was considered largely unchanged, the quality statements are unchanged.

Changes to this revision of the clinical care standard were largely to align the text to the most recent clinical guidelines, including the Stroke Foundation's *Clinical Guidelines for Stroke Management 2017*.[1] Revisions were made to the indicators based on experience implementing them to date. They have been specified to align with the Australian Stroke Clinical Registry (AuSCR). Other additions reflect changes in the *National Safety and Quality Health Service (NSQHS) Standards* (second edition), which now explicitly support the use of clinical care standards developed by the Commission as part of providing evidence-based care and addressing clinical variation.

About the Australian Commission on Safety and Quality in Health Care

The Commission is an Australian Government agency that leads and coordinates national improvements in the safety and quality of health care based on the best available evidence. By working in partnership with the Australian Government, state and territory governments, the private sector, clinical experts, and patients and carers, the Commission aims to ensure that the health system is better informed, supported and organised to deliver safe and high-quality care.

Acute stroke

Stroke occurs when there is a sudden interruption to the blood supply to the brain. This can cause part of the brain to die, leading to sudden impairment in activities such as speaking, swallowing, thinking, moving and communicating.[2] For about 80% of people who have a stroke, the cause is a blockage in an artery supplying blood to the brain, usually because of a blood clot (ischaemic stroke). In the remaining 20%, an artery begins to bleed (haemorrhagic stroke).[2]

In Australia, stroke is one of the top five underlying causes of death and is a major cause of disability.[3] How much damage is caused by a stroke depends on how long the brain tissue is denied blood supply. This 'time is brain' concept underpins why it is essential to eliminate delays in stroke diagnosis and treatment. Care of acute stroke is time critical. Receiving the right care at the right time in the right place can significantly improve a person's chance of surviving a stroke, and recovery to a full and independent life.[1, 4]

Prompt treatment can only occur if people recognise the early symptoms of stroke. In 2015, only 34% of Australians with stroke presented to hospital within three hours of stroke onset.[1] Public awareness campaigns such as the Stroke Foundation's F.A.S.T. campaign (Face, Arm, Speech and Time) help to raise awareness of the signs of stroke and the need to call 000 for an ambulance immediately.[5]

Awareness that stroke is a medical emergency is fundamental to the design and delivery of health services. It is imperative that services are highly coordinated and organised to provide rapid access to acute care. This is crucial when blood flow to the brain needs to be restored after a blockage (reperfusion treatment) because of the narrow window of time when these treatments can be offered and will be effective.

Encouragingly, the death rate from stroke is decreasing. It fell from 51.0 deaths per 100,000 persons in 2006 to 35.7 deaths per 100,000 persons in 2016.[6] Between 2015 and 2017, there were incremental improvements in many aspects of acute stroke care described in this clinical care standard (see Figures 1 and 2). For example, the proportion of patients receiving thrombolysis almost doubled, from 8% to 13%. Endovascular thrombectomy (surgical removal of clots) is increasingly available and provides an alternative option to thrombolysis for reperfusion treatment. Nonetheless, there is much still to be done to improve the care of patients with an acute stroke. Overall rates of thrombolysis remain low, fewer than 50% of patients spend most of their acute hospital stay within a stroke unit and more than 30% of patients do not receive a physiotherapy assessment in the first 48 hours of admission.[7]

Australia is fortunate to have excellent resources available to support quality improvement, including current, relevant and high-quality evidence-based guidelines for the management of stroke; clearly articulated system requirements for service organisation; and mechanisms for monitoring through stroke audits, quality indicators and data collection tools.[1, 7-10] These important enablers of quality, along with collaboration and commitment across the healthcare system, have helped to change the trajectory of stroke. In the United States, quality improvement initiatives for stroke have been shown to reduce mortality, increase discharge to home and improve thrombolysis rates.[11, 12] In Australia, continued quality improvement and implementation of recommended care is needed to ensure that patients receive the best possible treatment during the acute phase of stroke management, no matter where they are in Australia.

Figure 1: Changes in acute stroke standard indicators 2015–2017 – acute phase

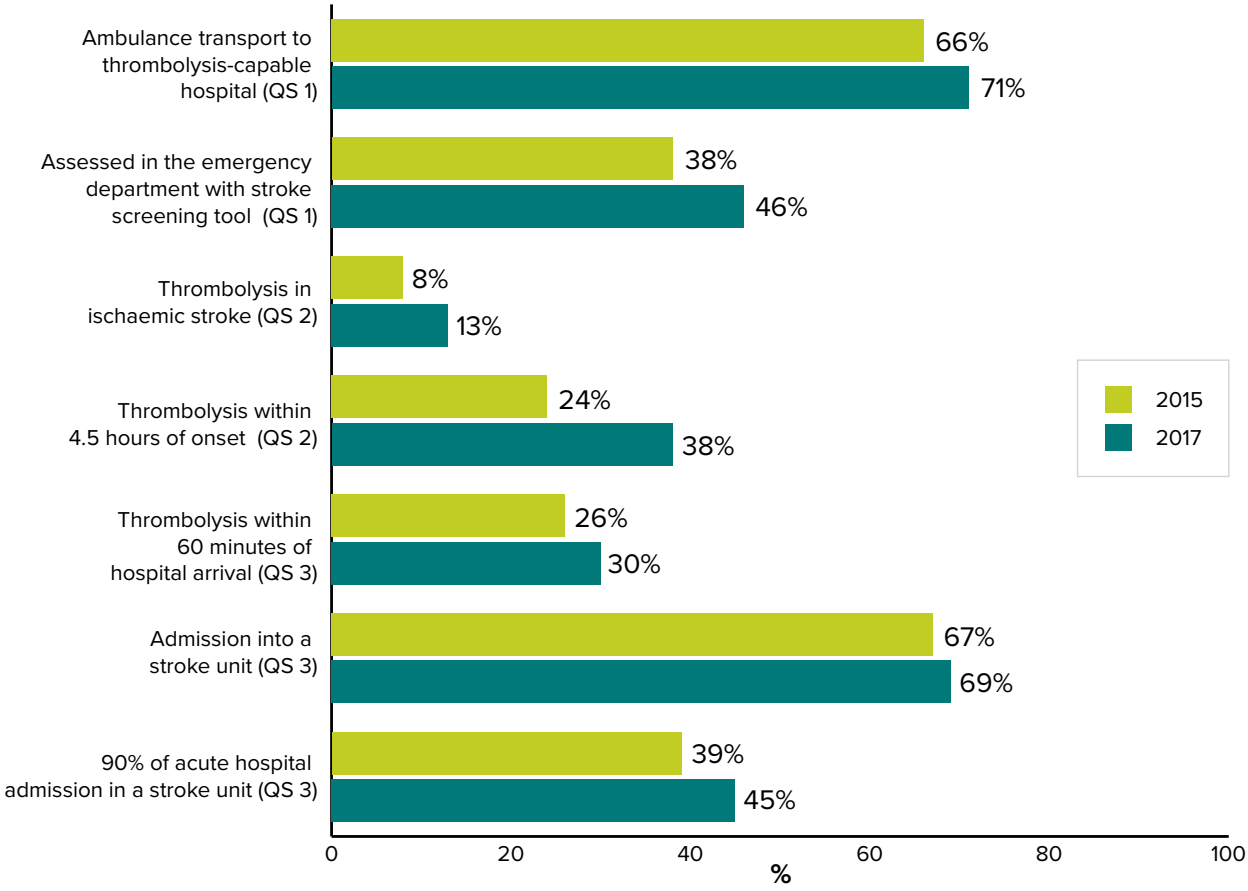
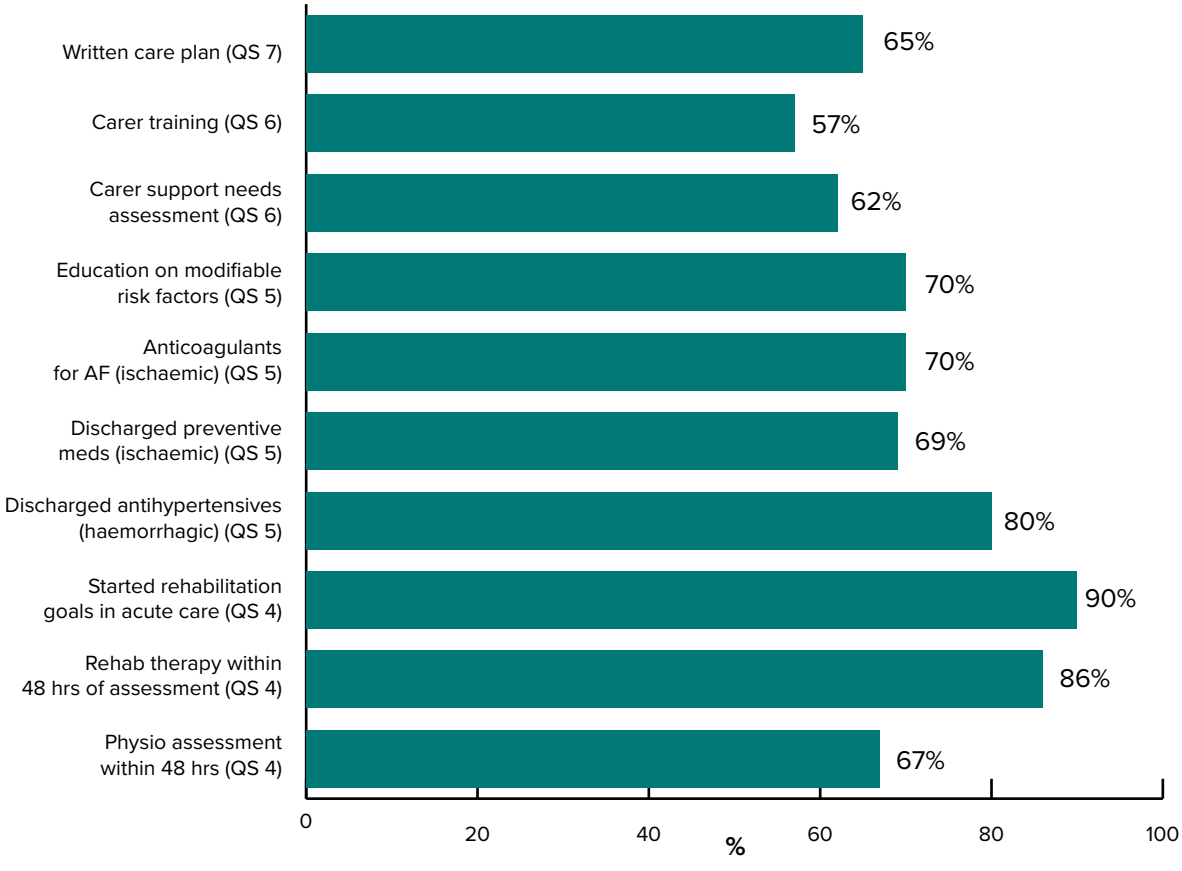


Figure 2: Acute stroke indicators 2017 – rehabilitation goals and discharge



* Quality Statement

About the Acute Stroke Clinical Care Standard

Why this is needed

Despite considerable gains in the care of people with acute stroke, this clinical care standard remains extremely relevant. Many patients still do not receive any form of potentially lifesaving reperfusion therapy. Fewer Australian patients receive timely thrombolysis than patients in the United States and the United Kingdom. The number of stroke units in Australia has increased, but patients spend less time in stroke units than they should.[13]

Goal

To improve the early assessment and management of patients with acute and subacute stroke to increase their chance of survival, maximise their recovery and reduce their risk of another stroke.

Scope

This clinical care standard relates to the care that patients should receive when they are having, or are suspected of having, a stroke. It covers recognition of stroke, rapid assessment, early management, and early initiation of an individualised rehabilitation plan.

What is not covered

Ongoing rehabilitation and support are important to the recovery of patients with stroke, but are outside the scope of this clinical care standard.

Evidence that underpins this clinical care standard

The key Australian evidence source for the Acute Stroke Clinical Care Standard is the Stroke Foundation's *Clinical Guidelines for Stroke Management 2017*.[1] The standard is also consistent with international clinical practice guidelines, including those from:

- the United Kingdom's National Institute for Health and Care Excellence[14], and the Intercollegiate Stroke Working Party[15]
- the American Heart Association and American Stroke Association
- the Heart and Stroke Foundation of Canada.[16]

Supporting documents

A suite of supporting documents for this clinical care standard is available on the Commission's website at **www.safetyandquality.gov.au/ccs**.

Tools to support data collection for clinical quality improvement

Resources available to support clinical quality improvement in acute stroke include the:

- Australian Stroke Data Tool (AuSDaT): **www.strokefoundation.org.au/Australian-Stroke-Coalition/AusDAT**
- Australian Stroke Clinical Registry (AuSCR): **www.auscr.com.au/**
- Stroke Foundation's National Stroke Audit: **www.informme.org.au/**

How to use this clinical care standard

This clinical care standard describes the key components of care that patients should receive when they are having, or are suspected of having, a stroke. It should be used as part of providing high-quality, evidence-based care, taking into account the context in which care is provided, local variation in care, and the quality improvement priorities of the individual health service organisation.

When implementing the clinical care standard, health services and clinicians should consider integration with the following:

- Indicators for the Acute Stroke Clinical Care Standard – these are listed with each quality statement – see Appendix A.
- Other quality measures such as patient reported outcome measures and patient experience measures – see Appendix B.
- The **National Safety and Quality Health Service (NSQHS) Standards** – see Appendix C.

General principles of care

Clinicians are advised to use clinical judgement and consider an individual patient's circumstances, in consultation with the patient, or their carer or guardian, when applying the information in this clinical care standard.

Health service organisations are responsible for ensuring that local policies, processes and protocols to guide clinical practice are in place. This enables clinicians and health service organisations to apply the information described in the clinical care standard and monitor the delivery of appropriate care.

Person-centred care

Person-centred care is health care that is respectful of, and responsive to, the preferences, needs and values of patients and consumers.[17]

Clinical care standards support the key principles of person-centred care, namely:

- Treating patients with dignity and respect
- Encouraging patient participation in decision-making
- Communicating with patients about their clinical condition and treatment options
- Providing patients with information in a format that they understand so they can participate in decision-making.[18]

For Aboriginal and Torres Strait Islander patients, care should be provided in a way that is respectful of, and responsive to, cultural beliefs and practices, while recognising the disparities faced by Aboriginal and Torres Strait Islander peoples.[19]

Multidisciplinary care

During a hospital admission and following discharge from hospital, patients are likely to need specific types of care provided by various clinicians. In this document, the term 'clinician' refers to all types of health professionals who provide direct clinical care to patients. Multidisciplinary care refers to comprehensive care provided by different clinicians (for example, neurologists, cardiologists, radiologists, general practitioners, clinical nurse specialists, physiotherapists, speech pathologists and other allied health professionals) from one or more organisations, who work collectively with the aim of addressing as many of a patient's health and other needs as possible.[20]

A coordinated multidisciplinary team approach is essential for improving the care delivered to patients with stroke. Multidisciplinary care of patients can improve health outcomes, and offers more efficient use of health resources. Planning, coordination and regular communication between clinicians are essential components of multidisciplinary care.

Carers and family members

Carers and family members play an important role in prevention, early recognition, assessment and recovery relating to a patient's health condition. They often know the patient very well and can provide detailed information about the patient's history, routines or symptoms, which may assist in determining treatment and ongoing support.[17]

Although this clinical care standard does not specifically refer to carers and family members, each quality statement should be understood to mean that carers and family members are involved in clinicians' discussions with patients about their care, if the patient prefers carer involvement.

Integrated approach to care

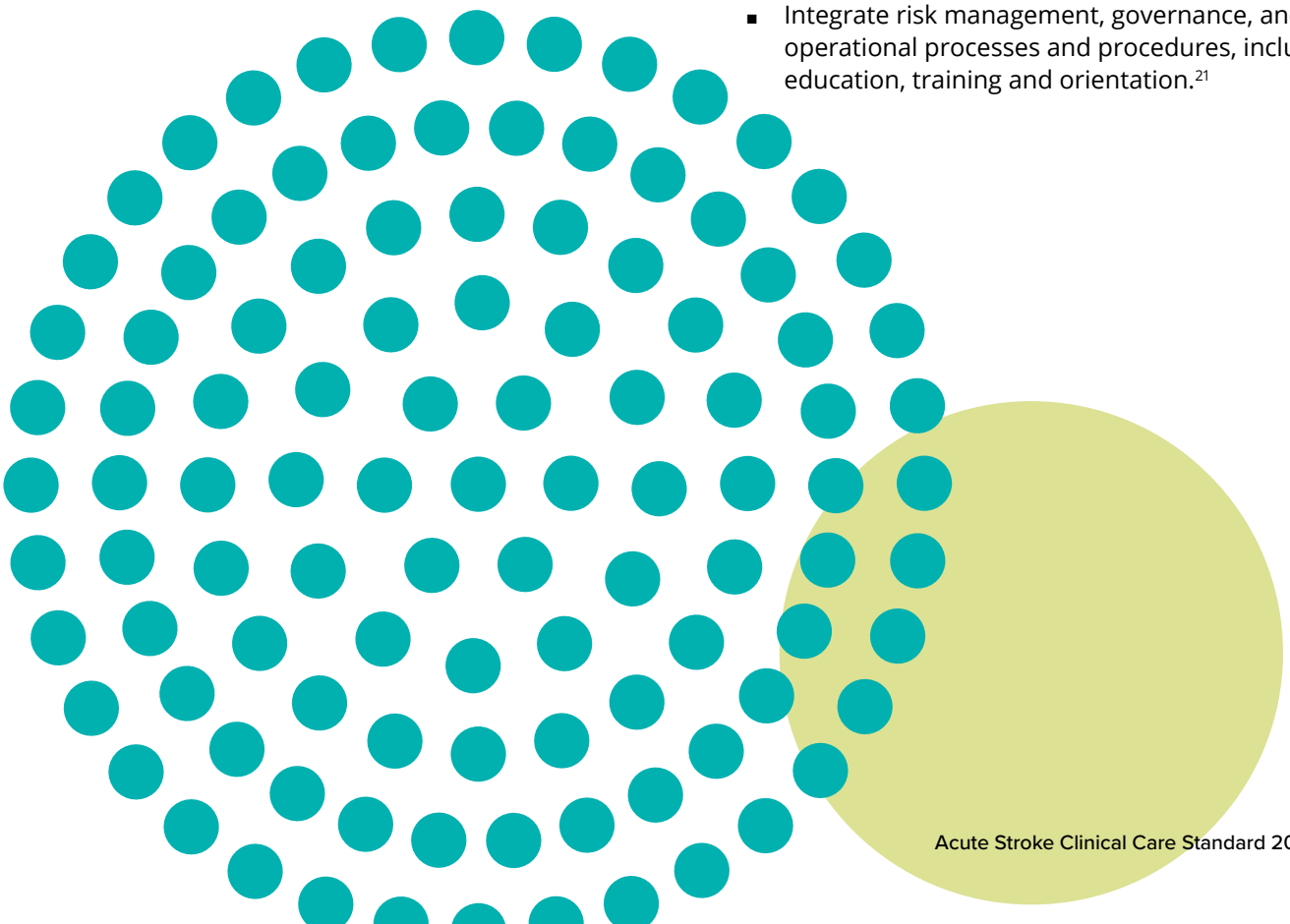
An integrated, systems-based approach supported by health service organisations and their networks is central to the delivery of person-centred care as identified in this clinical care standard. The workforce will need access to policies, processes and procedures.

Key elements of an integrated approach include:

- Understanding the capacity and limitations of each component of the healthcare system across metropolitan, regional, rural and remote settings
- Developing clear lines of communication between components of the healthcare system, including primary care, hospital, subacute and community services
- Ensuring appropriate coordination so that patients receive prompt access to the best possible care, regardless of how or where they enter the system.

To achieve these aims, health service organisations implementing this standard may need to:

- Deploy an active implementation plan and feedback mechanisms
- Include agreed protocols and guidelines, decision support tools and other resource material
- Employ a variety of incentives and sanctions to influence behaviours, and encourage compliance with policies, protocols, regulations and procedures
- Integrate risk management, governance, and operational processes and procedures, including education, training and orientation.[21]



1

Quality statement 1
Early assessment

A person with suspected stroke is immediately assessed at first contact using a validated stroke screening tool, such as the F.A.S.T. (Face, Arm, Speech and Time) test.

Purpose

To reduce the time to treatment for people with suspected stroke.

What the quality statement means

For patients

If you or another person has any of the signs below, call 000 for an ambulance immediately. These are signs that someone may be having a stroke:

- **F**ace – check their face. Has their mouth drooped?
- **A**rms – can they lift both arms?
- **S**peech – is their speech slurred? Do they understand you?
- **T**ime – is critical. If you see any of these signs, call 000 straightaway.

For clinicians

Using screening tools at first clinical contact in the community, pre-hospital or emergency triage settings can quickly identify suspected stroke and enable rapid access to time-critical treatment in the hyperacute phase. A validated screening tool (see Box 1) can identify stroke with high specificity, and can be used by generalist clinicians and first responders.[22] Other validated tools can be used by trained clinicians to assess and record the severity of stroke on admission (for example, National Institutes of Health Stroke Scale [NIHSS]).[1] In community settings, including general practice, patients with a positive screening test or a strong suspicion of stroke should be transported rapidly to hospital – by ambulance, in most instances.

For health service organisations

Ensure that protocols support the use of a validated screening tool in pre-hospital and hospital settings to enable the appropriate triage, transfer and diagnosis of people with stroke. Ambulance services can use screening tools to identify suspected stroke patients and ensure that they are treated as a time-critical emergency. This includes priority dispatch of ambulances and transfer directly to hospitals capable of reperfusion therapies, when the patient may be eligible.[1, 23] Emergency departments can use screening tools to trigger urgent assessment of patients who arrive at hospital independently.[1, 24] More detailed stroke severity scales (for example, NIHSS) may be used on admission but are not recommended in the pre-hospital setting.[1, 15]

Box 1: Other validated stroke screening tools

- **ROSIER –** the Recognition of Stroke in the Emergency Room scale[25]
- **MASS –** the Melbourne Ambulance Stroke Screen[26]

Indicator for local monitoring

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

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719046

More information about the indicator, and the definitions needed to collect and calculate it can be found online at the above METeOR link.

2

Quality statement 2
Time-critical therapy

A patient with ischaemic stroke for whom reperfusion treatment is clinically appropriate, and after brain imaging excludes haemorrhage, is offered a reperfusion treatment in accordance with the settings and time frames recommended in the *Clinical Guidelines for Stroke Management*.[1]

Purpose

To ensure that patients for whom reperfusion treatment is indicated have the opportunity to be considered for this treatment.

What the quality statement means

For patients

There are two types of stroke: those caused by bleeding in the brain, and those that occur when a blood clot blocks a blood vessel. If a stroke is caused by a blood clot, treatment to restore blood flow in the brain (reperfusion) should be urgently considered. If your clinicians think this treatment could help, it should be offered as soon as possible, within hours.

The treatment may involve medicines to dissolve the blood clot (thrombolysis) blocking the blood vessel or surgery to remove the blood clot, to prevent death of tissue in the brain ('time is brain'). These treatments are not suitable for everyone with a stroke caused by a blood clot and cannot be used if the stroke is caused by bleeding in the brain.

A decision on treatment is normally made after brain imaging, which should be done urgently. Your clinicians will discuss the options with you and your family, and seek consent whenever possible, bearing in mind that reperfusion is an emergency therapy and may be required without delay.

For clinicians

Consider reperfusion treatment for all patients with suspected ischaemic stroke. Urgently assess the patient and arrange imaging. Take into consideration the patient's comorbidities, circumstances and preferences, and discuss the potential benefits and risks of treatment options with the patient and their family or carer. If clinically indicated, offer reperfusion treatment (thrombolysis and/or endovascular thrombectomy) within the time frames recommended in the current Australian *Clinical Guidelines for Stroke Management*.[1]

If a patient has a haemorrhagic stroke, consider time-critical therapies, such as blood pressure control.

For health service organisations

Reperfusion therapy (thrombolysis and/or endovascular thrombectomy) is a time-critical therapy. These therapies require careful coordination between multiple systems, including pre-hospital services, emergency, radiology, and stroke and neurointervention teams. They also require suitable infrastructure, facilities and workflows, as described in Australian clinical guidelines.[1] Ensure that systems and processes are in place, and that services are adequately resourced to offer reperfusion treatment to patients for whom it is clinically indicated, within the time frames recommended in the *Clinical Guidelines for Stroke Management*[1] and in line with the National Acute Stroke Services Framework.[8] These should include workflows to allow pre-notification, routing to a hospital able to provide reperfusion treatment, urgent access to computed tomography (CT), and protocols to support rapid assessment and treatment by suitably trained clinicians. Remote and telemedicine options should be in place in rural and regional centres to support decision-making.[1, 23, 8]

Indicators for local monitoring

Indicator 2a: Proportion of patients with a final diagnosis of ischaemic stroke who were provided thrombolysis.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719048

Indicator 2b: Proportion of patients with a final diagnosis of ischaemic stroke who received endovascular thrombectomy.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719088

Indicator 2c: Proportion of patients with a final diagnosis of ischaemic stroke provided thrombolysis who received the therapy within 60 minutes of presentation to hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719050

Indicator 2d: Time from arrival to hospital to endovascular thrombectomy.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719091

More information about the indicators, and the definitions needed to collect and calculate them can be found online at the above METeOR links.

3

Quality statement 3
Stroke unit care

A patient with stroke is offered treatment in a stroke unit as defined in the National Acute Stroke Services Framework.[8]

Purpose

To ensure that patients with stroke receive multidisciplinary stroke care in a stroke unit. In regional and rural areas where this will involve travelling long distances, this requires planning and coordination of services, and considering the safety and preferences of the patient and/or their carer and family.

What the quality statement means

For patients

Being treated in a stroke unit by a team of health professionals who specialise in stroke care will increase your chance of a good recovery. A specialised team may include doctors, nurses, physiotherapists, speech pathologists, occupational therapists, dietitians, social workers and pharmacists. You should be offered treatment in a specialised stroke unit whenever possible, which might mean being transferred to a different hospital. If there is no stroke unit, this care should take place in the nearest similar unit meeting the recommended requirements for acute stroke care. You (and/or your carer or family) should be given the opportunity to discuss your wishes regarding transfer to a place where this care can be provided.

For clinicians

Ensure that patients with stroke are offered multidisciplinary care in a stroke unit, as defined in the National Acute Stroke Services Framework.[8] Different models of stroke unit care are described in the framework, but important elements include care being provided in a geographically discrete unit, comprehensive assessment and a specialised interdisciplinary team. Very early admission to a stroke unit (within three hours of stroke onset) for ischaemic stroke patients results in significantly better recovery at three months.[1]

For health service organisations

Ensure that systems, infrastructure and resources are in place for patients with stroke to be treated in a stroke unit, and that these comply with the recommendations in the National Acute Stroke Services Framework.[8] For rural and remote services, this includes arranging for transfer to a stroke unit, where safe to do so, or care at a locally agreed alternative facility with telemedicine support, bearing in mind the wishes of the patient and/or carer or family.

Indicators for local monitoring

Indicator 3a: Proportion of patients with a final diagnosis of acute stroke who have documented treatment in a stroke unit.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719052

Indicator 3b: Proportion of patients with a final diagnosis of acute stroke who spent at least 90% of their acute hospital admission in a stroke unit.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719054

More information about the indicators, and the definitions needed to collect and calculate them can be found online at the above METeOR links.

4 Quality statement 4
Early rehabilitation

A patient's rehabilitation needs and goals are assessed by staff trained in rehabilitation within 24–48 hours of admission to the stroke unit. Rehabilitation is started as soon as possible, depending on the patient's clinical condition and their preferences.

Purpose

To assess patients with stroke for their rehabilitation needs and start rehabilitation while the patients are in hospital according to their clinical needs.

What the quality statement means

For patients

If you have had a stroke, it is very likely that you will need treatment, advice or assistance to help you deal with the impact of the stroke on your everyday life. These needs will be different for every stroke survivor. Rehabilitation covers many different things. For example, you may need help eating and drinking, walking, carrying out your other usual daily activities, or managing the emotional and psychological impact of any disability caused by the stroke. Your individual rehabilitation needs and goals will be assessed as early as possible after your stroke, so that planning and treatment for your recovery can start as soon as possible. Your rehabilitation assessment should occur within 24–48 hours of your arrival at the hospital.

For clinicians

Assess the rehabilitation needs and goals of patients with stroke within 24–48 hours of admission to the hospital, using a standardised comprehensive assessment tool such as the Australian Stroke Coalition's Assessment for Rehabilitation: Pathway and Decision-Making Tool.[27] Complete the sections of the assessment relevant to your practice (for example, medical, nursing, physiotherapy, speech therapy) or complete the assessment with others in a multidisciplinary team meeting or ward round. Identifying the patient's rehabilitation needs while they are in hospital can help determine where they should be discharged or referred to for more rehabilitation. Start rehabilitation during the acute phase of care whenever clinically appropriate. Intensive early mobilisation within 24 hours of stroke onset is not recommended.[1, 28]

For health service organisations

Ensure that processes and resources are in place to assess the rehabilitation needs of patients with stroke within 24–48 hours using a standardised comprehensive assessment tool such as the Australian Stroke Coalition's Assessment for Rehabilitation: Pathway and Decision-Making Tool.[27] Identify and provide services to enable the patient's rehabilitation as soon as possible while they are in hospital. Procedures should be in place for liaison with, and referral to, other rehabilitation providers responsible for continuing care, based on the patient's assessed needs, as guided by the Rehabilitation Stroke Services Framework.[9]

Indicators for local monitoring

Indicator 4a: Proportion of patients with a final diagnosis of acute stroke seen by a physiotherapist within 48 hours of presentation to hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719107

Indicator 4b: Proportion of patients with a final diagnosis of acute stroke assessed for ongoing rehabilitation using a structured assessment tool prior to separation from acute care.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719058

More information about the indicators, and the definitions needed to collect and calculate them can be found online at the above METeOR links.

5

Quality statement 5
Minimising risk of another stroke

A patient with stroke, while in hospital, starts treatment and education to reduce their risk of another stroke.

Purpose

To ensure that a patient with stroke starts treatment and education on how to reduce their risk of another stroke. The initial plan may change during the patient's recovery.

What the quality statement means

For patients

People who have had a stroke are at high risk of having another one. While you are in hospital, your clinicians may recommend changes to your medicines and lifestyle to reduce your risk of another stroke. You will be provided with written information and advice to help you understand what you can do to improve your health, such as stopping smoking, having a balanced diet and increasing physical activity, where appropriate, and following recommended medical treatment.

For clinicians

Assess the patient's risk of recurrent stroke and modifiable risk factors. Educate patients with stroke about their risk of another stroke by discussing risk factors, providing written information and prescribing medicines for secondary prevention, including antihypertensives, antithrombotics and lipid-modifying therapy. Other measures may include time-limited surgical interventions (for example, carotid endarterectomy). Refer to the *Clinical Guidelines for Stroke Management* for current recommendations.[1]

For health service organisations

Ensure that processes are in place and resources are available to educate patients about reducing their risk of another stroke and where they can go to find more information. Ensure that processes require preventive therapies to be prescribed, recommended or arranged, and documented before stroke patients are discharged, in line with current clinical practice guidelines.

Indicators for local monitoring

Indicator 5a: Proportion of patients with a final diagnosis of acute stroke on blood pressure-lowering medication on separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719060

Indicator 5b: Proportion of patients with a final diagnosis of ischaemic stroke on cholesterol-lowering medication on separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719062

Indicator 5c: Proportion of patients with a final diagnosis of ischaemic stroke and atrial fibrillation prescribed oral anticoagulants on separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719114

Indicator 5d: Proportion of patients with a final diagnosis of ischaemic stroke on antithrombotic medications on separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719116

Indicator 5e: Proportion of patients with a final diagnosis of acute stroke who have documented evidence of advice on risk factor modification prior to separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719066

More information about the indicators, and the definitions needed to collect and calculate them can be found online at the above METeOR links.

6

Quality statement 6
Carer training and support

A carer of a patient with stroke is given practical training and support to enable them to provide care, support and assistance to a patient with stroke.

Purpose

To provide carers with the skills and knowledge on how to support and care for a patient with stroke.

What the quality statement means

For patients

If you are involved in caring for someone who has had a stroke, you will be offered information and practical training on how to provide care for the person when they are discharged home. This may include information and training on personal care techniques, communication, safe physical handling, and managing specific issues such as swallowing, dietary modifications and emotional wellbeing. You will also be given contact details of support services before the patient with stroke leaves hospital.

For clinicians

Support carers by offering them education on stroke, practical training on how to provide care, contact details of support services, and other information to support their own wellbeing before the patient with stroke leaves hospital.

For health service organisations

Ensure that processes and resources are in place to provide carers with education about stroke, practical training on how to provide care, access to support services (for example, respite care), and other information to support them before patients with stroke leave hospital.

Resources for stroke survivors and their carers

The Stroke Foundation has developed many resources to assist stroke survivors, their carers and healthcare professionals in the process of discharge planning and transfer of care:

- *My Stroke Journey* – an information pack to give to stroke survivors and their carers before hospital discharge
- StrokeLine – a free telephone support service providing information and advice on stroke prevention, treatment and recovery, staffed by healthcare professionals : 1800 787 653 or email **strokeline@strokefoundation.org.au**
- EnableMe – a free web-based resource providing information, a community forum and a tool to track personal goals for recovery.

For more information, see: **www.strokefoundation.org.au/What-we-do/Support-programs**

Indicators for local monitoring

Indicator 6a: Proportion of patients with a final diagnosis of acute stroke whose carer(s) received a formal needs assessment prior to separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719068

Indicator 6b: Proportion of patients with a final diagnosis of acute stroke who require assistance with activities of daily living, and whose carer(s) received relevant training prior to separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719070

More information about the indicators, and the definitions needed to collect and calculate them can be found online at the above METeOR links.

7

Quality statement 7
Transition from hospital care

Before a patient with stroke leaves the hospital, they are involved in the development of an individualised care plan that describes the ongoing care that the patient will require after they leave hospital. The plan includes rehabilitation goals, lifestyle modifications and medicines needed to manage risk factors, any equipment they need, follow-up appointments, and contact details for ongoing support services available in the community. This plan is provided to the patient before they leave hospital, and to their general practitioner or ongoing clinical provider within 48 hours of discharge.

Purpose

To ensure that patients with stroke have an individualised care plan before they leave hospital. This is different from a clinical discharge summary.

What the quality statement means

For patients

Before you leave hospital, your doctors, nurses and therapists will discuss your recovery with you and your carer and/or family. They will develop a plan with you (and your carer and/or family) to guide your care after discharge. Your plan may change as your condition changes. You and your regular general practitioner will get a copy of this plan, which sets out:

- Your goals
- The changes you may need to make to your lifestyle
- The medicines you may need to take
- The equipment you may need
- Follow-up appointments
- The rehabilitation services, prevention services and other community support services you are referred to.

For clinicians

Develop an individualised care plan with each patient and their carer and/or family and provide it to them in writing before they leave hospital. Provide a copy to their general practitioner or ongoing clinical provider within 48 hours of the patient leaving hospital. The individualised care plan is separate from a clinical discharge summary. It includes information about the patient's rehabilitation goals, risk factors, lifestyle modifications and medicines; any equipment they need; follow-up appointments; and contact details for ongoing support services available in the community. The Stroke Foundation's *My Stroke Journey* is a useful planning resource that can be provided to patients before they leave hospital after an acute stroke.[29]

For health service organisations

Ensure that pre-discharge processes and resources are in place for clinicians to develop an individualised care plan for patients with stroke before they are discharged, in discussion with the patient and their carer and/or family. The individualised care plan should be provided to the patient before they leave hospital, and to their general practitioner or ongoing clinical provider within 48 hours of discharge. An individualised care plan is different to a discharge summary (for example, see the Stroke Foundation's *My Stroke Journey*).[29]

Indicator for local monitoring

Indicator 7a: Proportion of patients with a final diagnosis of acute stroke provided with a documented care plan prior to separation from hospital.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/719120

More information about the indicator, and the definitions needed to collect and calculate it can be found online at the above METeOR link.

My Stroke Journey – a tool for clinician and patient care planning

The Stroke Foundation resource *My Stroke Journey* covers all the essential elements of a care plan itself, and includes pages for clinicians and patients to complete together. *My Stroke Journey* is intended to be provided by hospital clinicians and discussed with patients in the first few days after their stroke, and it stays with patients in their transition from hospital to home. This resource is used by clinicians to deliver stroke education, explain treatment and care, secondary prevention education, and plan for discharge home.

For more information, see:
https://strokefoundation.org.au/What-we-do/Support-programs/My-Stroke-Journey

Appendix A: Indicators to support local monitoring

The Commission has developed a set of indicators to support clinicians and local health service organisations in monitoring how well they implement the care described in this clinical care standard. The indicators are a tool to support local quality improvement activities. No benchmarks are set for any indicator. The process to develop the indicators specified in this document comprised:

- A review of existing local and international indicators
- Consultation with the Acute Stroke Clinical Care Standard Topic Working Group.

Monitoring the implementation of the clinical care standard will help organisations meet some of the requirements of the NSQHS Standards. Information about the NSQHS Standards is available on **the Commission's website**.

Most of the data underlying these indicators require collection from local sources, mainly through data prospective collection or a retrospective chart review. Where an indicator refers to 'local arrangements', these can include clinical guidelines, protocols, care pathways or any other documentation providing guidance to clinicians on the care of patients with acute stroke.

In this document, the indicator titles and hyperlinks to the specifications are included with the relevant quality statement under the heading 'Indicators for local monitoring'. Full specifications of the Acute Stroke Clinical Care Standard indicators can be found in the Metadata Online Registry (METeOR) at **meteor.aihw.gov.au/content/index.phtml/itemId/719072**.

METeOR is Australia's web-based repository for national metadata standards for the health, community services and housing assistance sectors. Hosted by the Australian Institute of Health and Welfare, METeOR provides users with online access to a wide range of nationally endorsed data and indicator definitions.

National data collections and audits

The Acute Stroke Clinical Care Standard indicators align with other national collaborative efforts to monitor and improve the quality of acute stroke care. These include the:

- Australian Stroke Clinical Registry (AuSCR)
- Australian Stroke Data Tool (AuSDaT), a single data collection tool for clinical monitoring in stroke care for use by clinicians in acute and rehabilitation services.
- National Stroke Data Dictionary (NSDD), which provides standardised definitions, coding and recording guidance for all data items collected in AuSDaT.

For more information see **www.strokefoundation.org.au/en/Australian-Stroke-Coalition/AusDAT**

Appendix B: Measuring and monitoring patient experiences

Systematic, routine monitoring of patients' experiences of health care is an important way to ensure that the patient's perspective drives service improvements and patient-centred care. This is the case in all health services.

Patient-reported outcome measures

In Australia, patient-reported outcome measures (PROMs) are an emerging method of assessing the quality of health care. The Commission is leading a national work program to support the consistent and routine use of PROMs to drive quality improvement.

PROMs are standardised, validated questionnaires that patients complete, without any input from health professionals. They are often administered at least twice to an individual patient – at baseline and again after an intervention, or at regular intervals during a chronic illness. The information contributed by patients filling out PROMs questionnaires can be used to support and monitor the movement of health systems towards person-centred, value-based health care.

PROMs are being used to evaluate healthcare effectiveness at different levels of the health system, from the individual level to service and system levels. There is growing interest across Australia and internationally in the routine interrogation of patient-reported outcome information for evaluation and decision-making activities at levels of the health system beyond the clinical consultation.

Patient experience measures

This clinical care standard does not include indicators specific to measuring patient experiences. The Commission strongly encourages organisations to adopt the Australian Hospital Patient Experience Question Set (AHPEQS). AHPEQS is a 12-question generic patient experience survey that has been found to be reliable and valid for both day-only and admitted hospital patients across many clinical settings.

The AHPEQS question set is available for both private and public sector health services, and has been translated into 20 languages. It can be downloaded at: **www.safetyandquality.gov.au/ahpeqs**.

Appendix C: Integration with the National Safety and Quality Health Service Standards

The Commission developed the NSQHS Standards in collaboration with the Australian Government, state and territory governments, clinical experts, and consumers. The NSQHS Standards aim to protect the public from harm and improve the quality of health service provision. They provide a quality assurance mechanism that tests whether relevant systems are in place to ensure that expected standards of safety and quality are met.

The second edition of the NSQHS Standards was launched in November 2017, and health service organisations have been assessed against the updated standards since January 2019.

In the NSQHS Standards (2nd ed.), the Clinical Governance Standard and the Partnering with Consumers Standard combine to form the clinical governance framework for all health service organisations.

The Clinical Governance Standard aims to ensure that systems are in place within health service organisations to maintain and improve the reliability, safety and quality of health care.

The Partnering with Consumers Standard aims to ensure that consumers are partners in the design, delivery and evaluation of healthcare systems and services, and that patients are given the opportunity to be partners in their own care, to the extent that they choose.

Under the NSQHS Standards (2nd ed.), health service organisations are expected to support clinicians to use the best available evidence, including clinical care standards such as the Acute Stroke Clinical Care Standard (see Action 1.27b of the NSQHS Standards).

Health service organisations are expected to implement the NSQHS Standards in a way that suits the clinical services provided and their associated risks. Other aspects of the NSQHS Standards (2nd ed.) that are relevant to the Acute Stroke Clinical Care Standard include those listed in Table 1.

Table 1: Actions in the NSQHS Standards relevant to this clinical care standard

Clinical Governance Standard	Partnering with Consumers Standard	Medication Safety Standard	Communicating for Safety Standard	Recognising and Responding to Acute Deterioration Standard
Governance, leadership and culture (1.1 and 1.2)	Informed consent (2.3–2.5)	Clinical governance and quality improvement to support medication management (4.1–4.4)	Communication of critical information (6.9 and 6.10)	Responding to deterioration (8.10–8.13)
Evidence-based care, including clinical care standards (1.27)	Sharing decisions and planning care (2.6 and 2.7)	Documentation of patient information (4.5–4.9)	Documentation of information (6.11)	
Variation in clinical practice and health outcomes (1.28)	Information for consumers (2.9)	Continuity of medication management (4.10–4.12)		
Safe environment (1.29), including for Aboriginal and Torres Strait Islander people (1.33)	Communication of clinical information (2.10)			

Glossary

Term	Definition
antithrombotic	A type of anti-clotting medicine used to prevent and treat blood clots. Antithrombotic medicines anticoagulant medicines (for example, warfarin) and antiplatelet medicines (for example, low-dose aspirin).
antihypertensive	A medicine that reduces blood pressure.
atrial fibrillation	A condition in which the heart beats irregularly. The heartbeat is outside its usual rhythm and is often faster than normal.
care plan	A document describing agreed goals of care, and outlining planned medical, nursing and allied health activities for a patient.[21]
carer	A person who provides personal care, support and assistance to another individual who needs these because they have a disability, medical condition (including a terminal or chronic illness) or mental illness, or they are frail or aged. An individual is not a carer merely because they are a spouse, de facto partner, parent, child, other relative or guardian to an individual who requires care. A person is not considered a carer if they are paid, a volunteer for an organisation, or caring as part of a training or education program.
clinician	Any trained health professional who provides direct clinical care to patients. Clinicians may be registered or non-registered practitioners working individually or in teams. They include medical practitioners, nurses, midwives, and allied health professionals, Aboriginal health workers and all other people who provide health care services.[21]
endovascular thrombectomy	A type of reperfusion procedure used for a stroke caused by a blockage in an artery to the brain. Using imaging (for example, X-ray) guidance, a clot retrieval device is inserted into the artery, usually through an artery in the groin (femoral artery) to the site of the blockage to remove the clot and re-establish blood flow to the affected part of the brain. Many patients will also have had initial treatment with intravenous thrombolysis.[31] Endovascular thrombectomy is also known as mechanical clot retrieval.
Face, Arm, Speech and Time (F.A.S.T.) test	A test used to screen for the diagnosis of stroke or transient ischaemic attack.[15]
first contact	The time when the person with stroke symptoms first encounters someone who can help. This can be a member of the community, a clinician or a carer.
haemorrhagic stroke	A type of stroke caused by bleeding into the brain.[15]
healthcare record	Paper or electronic record of the patient's medical history, treatment notes, observations, correspondence, investigations, test results, photographs, prescription records and medication charts for an episode of care.[21] Includes My Health Record.
health service organisation	A separately constituted health service that is responsible for implementing clinical governance, administration and financial management of a service unit or service units providing health care at the direction of the governing body. A service unit involves a group of clinicians and others working in a systematic way to deliver health care to patients. It can be in any location or setting, including pharmacies, clinics, outpatient facilities, hospitals, patients' homes, community settings, practices and clinicians' rooms.[21]

Term	Definition
hospital	A licensed facility providing healthcare services to people for short periods of acute illness, injury or recovery.[30]
individualised care plan	See care plan.
ischaemic stroke	A type of stroke caused by a reduced or blocked supply of blood in the brain.[15]
medicine	A chemical substance given with the intention of preventing, curing, controlling or alleviating disease, or otherwise improving the physical or mental welfare of people. These include prescription, non-prescription, investigational, clinical trial and complementary medicines, regardless of how they are administered.
multidisciplinary care	A team including clinicians from multiple disciplines who work together to deliver comprehensive care that deals with as many of the patient's health and other needs as possible. The team may operate under one organisational umbrella or may be from several organisations brought together as a unique team. As a patient's condition changes, the composition of the team may change to reflect the changing clinical and psychosocial needs of the patient.[20]
rehabilitation	The process of regaining function through active treatment, such as occupational therapy, physiotherapy, and speech and language therapy.[32]
reperfusion treatments	Treatments that restore blood flow (and therefore oxygen supply) to an area of the brain that has been deprived of blood flow for a period. These include intravenous thrombolysis (giving a medicine that dissolves blood clots, directly into a vein), and endovascular thrombectomy(mechanical clot retrieval).
risk factor	A characteristic, condition or behaviour that increases the possibility of disease, injury or loss of wellbeing. Risk factors for stroke include things that we cannot change, such as our age and ethnicity; medical conditions that can be treated, such as high blood pressure, high cholesterol, diabetes and an irregular heart rhythm; and lifestyle factors that can be changed, such as smoking, drinking too much alcohol, an unhealthy diet and lack of exercise.[32]
stroke	A stroke happens when the blood supply to the brain is interrupted. Blood is carried to the brain by blood vessels called arteries. Blood contains oxygen and important nutrients for brain cells. Blood may be interrupted or stop moving through an artery because the artery is blocked (ischaemic stroke) or bursts (haemmorhagic stroke). When brain cells do not get enough oxygen or nutrients, they die.[32]
stroke unit	Co-located beds within a geographically defined unit that is staffed by a dedicated, multidisciplinary team that specialises in stroke management, meets once a week to discuss a patient's care, and receives regular programs of staff education and training related to stroke.[8]
thrombectomy	The excision of a blood clot from a blood vessel.[15]
thrombolysis	The use of medicines to break up a blood clot. An example of a thrombolysis medicine is alteplase, sometimes called rT-PA.[15]
validated screening tool	A tool that has been shown to accurately and rapidly help identify people with a certain medical condition. Examples of stroke screening tools include the Face, Arm, Speech, Time (F.A.S.T.) test; the Melbourne Ambulance Stroke Screen (MASS); and the Recognition of Stroke in the Emergency Room (ROSIER) scale.[22]

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