Clinical Guidelines for Stroke Management 2017

Summary – Occupational Therapy

This summary is a quick reference to the recommendations in the *Clinical Guidelines for Stroke Management 2017* most relevant to occupational therapy.

Occupational therapists work with stroke survivors and their families/carers to optimise participation and independence in daily activities (including self-care, leisure and productivity).

While this summary focuses on these aspects of care, stroke care is the most effective when all members of an interdisciplinary team are involved. For the comprehensive set of recommendations that covers the whole continuum of stroke care, please refer to further information on InformMe https://informme.org.au/en/Guidelines/Clinical-Guidelines-for-Stroke-Management-2017.

The *Clinical Guidelines for Stroke Management 2017* is an update of the previous clinical guidelines published in 2010 and is based on the best evidence available. The new Clinical Guidelines use an internationally recognised guideline development approach called GRADE (Grading of Recommendations Assessment, Development and Evaluation) and an innovative guideline development and publishing platform known as MAGICapp (M**a**king Grade the Irresistible Choice). GRADE ensures a systematic process in developing recommendations, which are based on the balance of benefits and harms, quality of evidence, patient values, and resource considerations. MAGICapp enables transparent display of this process and access to additional practical information for recommendation implementation.

Recommendations

Each recommendation is given a strength based on GRADE. GRADE methodology includes four factors to guide the development of a recommendation and determine the strength of that recommendation:

- The balance between desirable and undesirable consequences
- Confidence in the estimates of effect (quality of evidence)
- Confidence in values and preferences and their variability (clinical and consumer preferences)
- Resource use (cost and implementation considerations).

The GRADE process uses only two categories for the strength of recommendations, based on how confident the guideline developers are in that the "desirable effects of an intervention outweigh undesirable effects […] across the range of patients for whom the recommendation is intended" (GRADE Handbook):

- **Strong recommendations**: where guideline developers are certain that the evidence supports a clear balance towards either desirable or undesirable effects; or
- **Weak recommendations**: where guideline developers are not as certain about the balance between desirable and undesirable effects as the evidence base isn't as robust.

These strong or weak recommendations can either be for or against an intervention. If the recommendation is AGAINST an intervention this means it is recommended NOT to do that intervention.

Consensus-based recommendations: statements have been developed based on consensus and expert opinion (guided by any underlying or indirect evidence) for topics where there is either a lack of evidence or insufficient quality of evidence on which to base a recommendation but it was felt that advice should be made.

Practice points: for questions outside the search strategy (i.e. where no systematic literature search was conducted), additional considerations are provided.

Key points

- An occupational therapist is an important member of the interdisciplinary stroke care team. Occupational therapists help stroke survivors manage day to day tasks, such as dressing and showering, as well as helping people to return to work and leisure activities after stroke. Occupational therapists also can also help with thinking or memory problems, and upper limb (hand or arm) problems.

- Recent evidence has resulted in several changes in the 2017 recommendations, for example, intensive out-of-bed activities should not be started in the first 24 hours of stroke onset for some patients (but all patients should commence out of bed activities by 48 hours after stroke at the latest), and the minimum amount of scheduled rehabilitation therapy for stroke survivors is now 3 hours a day, with at least 2 hours of active task practice during this time.

- Impairments (such as sensorimotor and cognition) and activities (such as physical activity and activities of daily living) should be assessed and rehabilitation commenced promptly (within 24-48 hours of admission), using interventions proven effective for the patient's conditions. Any stroke patient with identified rehabilitation needs should be referred to a rehabilitation service.

- Management of secondary complications resulting from primary impairments should commence in the acute phase, as well as being considered during sub-acute and long-term care. This includes prevention, early detection, and reduction strategies.

- Stroke survivors and their carers should be offered information, education, support and training throughout all phases of post-stroke recovery in order to enable safe discharge and successful reintegration into the community.

Recommendations are presented for the 2010 and 2017 versions to note changes easily, and are also presented in Chapter order for easier reference to the relevant section of the full Clinical Guidelines.

2010 Clinical Guidelines	2017 Clinical Guidelines
Chapter 4: Acute medical and surgical management	**Chapter 3 of 8: Acute medical and surgical management**
	Stroke unit care
	Strong recommendation All stroke patients should be admitted to hospital and be treated in a stroke unit with an interdisciplinary team.
	Info Box Practice points • All stroke patients should be admitted directly to a stroke unit (preferably within three hours of stroke onset). • For patients with suspected stroke presenting to non-stroke unit hospitals, transfer protocols should be developed and used to guide urgent transfers to the nearest stroke unit hospital. • Where transfer is not feasible, smaller isolated hospitals should manage stroke services in a manner that adheres as closely as possible to the criteria for stroke unit care. Where possible, stroke patients should receive care in geographically discrete units.
	Assessment for rehabilitation
	Info Box Practice points New • Every stroke patient should have their rehabilitation needs assessed within 24–48 hours of admission to the stroke unit by members of the interdisciplinary team, using the Assessment for Rehabilitation Tool. • Any stroke patient with identified rehabilitation needs should be referred to a rehabilitation service. • Rehabilitation service providers should document whether a stroke patient has rehabilitation needs and whether appropriate rehabilitation services are available to meet these needs.

	Palliative care
	Strong recommendation Stroke patients and their families/carers should have access to specialist palliative care teams as needed and receive care consistent with the principles and philosophies of palliative care.
	Practice statement Consensus-based recommendations • For patients with severe stroke who are deteriorating, a considered assessment of prognosis or imminent death should be made. • A pathway for stroke palliative care can be used to support stroke patients and their families/carers and improve care for people dying after stroke.
Chapter 5: Secondary prevention	**Chapter 4 of 8: Secondary prevention**
Lifestyle modification	**Lifestyle modification**
	Physical activity
	Info Box Practice point New People with stroke or TIA should be advised and supported to undertake appropriate, regular physical activity as outlined in one of the following existing guidelines: • Australia's Physical Activity & Sedentary Behaviour Guidelines for Adults (18-64 years) OR • Physical Activity Recommendations for Older Australians (65 years and older).

Chapter 6: Rehabilitation	Chapter 5 of 8: Rehabilitation
	Early supported discharge services
	Strong recommendation Updated Where appropriate stroke services are available, early supported discharge services should be offered to stroke patients with mild to moderate disability.
	Home-based rehabilitation
	Weak recommendation Updated Home-based rehabilitation may be considered as a preferred model for delivering rehabilitation in the community. Where home rehabilitation is unavailable, stroke patients requiring rehabilitation should receive centre-based care.
	Goal setting
	Strong recommendation Updated • Health professionals should initiate the process of setting goals, and involve stroke survivors and their families and carers throughout the process. Goals for recovery should be client-centred, clearly communicated and documented so that both the stroke survivor (and their families/carers) and other members of the rehabilitation team are aware of goals set. • Goals should be set in collaboration with the stroke survivor and their family/carer (unless they choose not to participate) and should be well-defined, specific and challenging. They should be reviewed and updated regularly.

	Early mobilisation
	Strong recommendation AGAINST New For stroke patients, starting intensive out-of-bed activities within 24 hours of stroke onset is not recommended.
Patients should be mobilised as early and as frequently as possible.	**Strong recommendation Updated** All stroke patients should commence mobilisation (out-of-bed activity) within 48 hours of stroke onset unless otherwise contraindicated (e.g. receiving end-of-life care).
	Weak recommendation New For patients with mild and moderate stroke, frequent, short sessions of out-of-bed activity should be provided, but the optimal timing within the 48-hour post-stroke time period is unclear.
Sensorimotor impairment	**Sensorimotor impairment**
Weakness	**Weakness**
	Strong recommendation For stroke survivors with reduced strength in their arms or legs, strength training should be provided.
One or more of the following interventions should be used for people with reduced strength: • progressive resistance exercises • electrical stimulation • electromyographic biofeedback in conjunction with conventional therapy.	**Weak recommendation Updated** For stroke survivors with reduced strength in their arms or legs (particularly for those with less than antigravity strength), electrical stimulation may be used.
Loss of sensation	**Loss of sensation**
Sensory-specific training can be provided to stroke survivors who have sensory loss.	**Weak recommendation Updated** For stroke survivors with sensory loss of the upper limb, sensory-specific training may be provided.
Sensory training designed to facilitate transfer can also be provided to stroke survivors who have sensory loss.	

Visual field loss	Vision
Stroke survivors who appear to have difficulty with recognising objects or people should be screened using specific assessment tools, and if a visual deficit is found, referred for comprehensive assessment by relevant health professionals.	**Practice statement Consensus-based recommendation New** All stroke survivors should have an: • assessment of visual acuity while wearing the appropriate glasses, to check their ability to read newspaper text and see distant objects clearly; • examination for the presence of visual field deficit (e.g. hemianopia) and eye movement disorders (e.g. strabismus and motility deficit).
Fresnel Prism glasses (15-diopter) can be used to improve visual function in people with homonymous hemianopia.	
Computer-based visual restitution training can be used to improve visual function in people with visual field deficits.	
Amount, intensity and timing of rehabilitation	**Physical activity**
Amount and intensity of rehabilitation	**Amount of rehabilitation**
Rehabilitation should be structured to provide as much practice as possible within the first six months after stroke.	**Strong recommendation Updated** For stroke survivors, rehabilitation should be structured to provide as much scheduled therapy (occupational therapy and physiotherapy) as possible. For stroke survivors, group circuit class therapy should be used to increase scheduled therapy time.
Task-specific circuit class training or video self-modelling should be used to increase the amount of practice in rehabilitation.	Practice statement Consensus-based recommendation **Updated** Stroke survivors should be encouraged to continue with active task practice outside of scheduled therapy sessions. This could include strategies such as: • self-directed, independent practice; • semi-supervised and assisted practice involving family/friends, as appropriate.
Patients should be encouraged by staff members, with the help of their family and/or friends if appropriate, to continue to practice skills they learn in therapy sessions throughout the remainder of the day.	
For patients undergoing active rehabilitation, as much physical therapy (physiotherapy and occupational therapy) should be provided as possible with a minimum of one hour active practice per day at least five days a week.	**Weak recommendation New** A minimum of three hours a day of scheduled therapy (occupational therapy and physiotherapy) is recommended, ensuring at least two hours of active task practice occurs during this time.

Loss of cardiorespiratory fitness	Cardiorespiratory fitness
Rehabilitation should include interventions aimed at increasing cardiorespiratory fitness once patients have sufficient strength in the large lower limb muscle groups.	**Strong recommendation** **Updated** For stroke survivors, rehabilitation should include individually-tailored exercise interventions to improve cardiorespiratory fitness.
Patients should be encouraged to undertake regular, ongoing fitness training.	**Practice statement** **Consensus-based recommendations** **Updated** • All stroke survivors should commence cardiorespiratory training during their inpatient stay. • Stroke survivors should be encouraged to participate in ongoing regular physical activity regardless of their level of disability.
Sitting	**Sitting**
Practising reaching beyond arm's length while sitting with supervision/assistance should be undertaken by people who have difficulty sitting.	**Strong recommendation** For stroke survivors who have difficulty sitting, practising reaching beyond arm's length while sitting with supervision/assistance should be undertaken.
Standing up	**Standing up**
Practising standing up should be undertaken by people who have difficulty in standing up from a chair.	**Strong recommendation** For stroke survivors who have difficulty in standing up from a chair, practice of standing up should be undertaken.
Standing	**Standing balance**
Task-specific standing practice with feedback can be provided for people who have difficulty standing.	**Strong recommendation** **Updated** For stroke survivors who have difficulty standing, task-specific practice of standing balance should be provided. Strategies could include: • practising functional tasks while standing; • walking training that includes challenge to standing balance (e.g. overground walking, obstacle courses).
	Weak recommendation **New** For stroke survivors who have difficulty with standing balance, virtual reality including treadmill training with virtual reality or use of Wii Balance Boards may be used.

Walking	Walking
People with difficulty walking should be given the opportunity to undertake tailored, repetitive practice of walking (or components of walking) as much as possible.	**Strong recommendation** **Updated** Stroke survivors with difficulty walking should be given the opportunity to undertake tailored repetitive practice of walking (or components of walking) as much as possible. The following modalities may be used: • Circuit class therapy (with a focus on overground walking practice); • Treadmill training with or without body weight support.
One or more of the following interventions can be used in addition to conventional walking training outlined above: • cueing of cadence • mechanically-assisted gait (via treadmill or automated mechanical or robotic device) • joint position biofeedback • virtual reality training.	**Weak recommendation** **Updated** For stroke survivors with difficulty walking, one or more of the following interventions may be used in addition to those listed above: • Virtual reality training. • Electromechanically assisted gait training. • Biofeedback. • Cueing of cadence. • Electrical stimulation.
Ankle-foot orthoses, which should be individually fitted, can be used for people with persistent drop foot.	**Weak recommendation** **Updated** For stroke survivors, individually fitted lower limb orthoses may be used to minimise limitations in walking ability. Improvement in walking will only occur while the orthosis is being worn.
Upper limb activity	**Upper limb activity**
Upper limb training should commence early. CIMT is one approach that may be useful in the first week after stroke.	**Strong recommendation** **Updated** For stroke survivors with some active wrist and finger extension, intensive constraint-induced movement therapy (minimum 2 hours of active therapy per day for 2 weeks, plus restraint for at least 6 hours a day) should be provided to improve arm and hand use. Trunk restraint may also be incorporated into the active therapy sessions at any stage post-stroke.

People with difficulty using their upper limb(s) should be given the opportunity to undertake as much tailored practice of upper limb activity (or components of such tasks) as possible. Interventions which can be used routinely include: • constraint-induced movement therapy in selected people • repetitive task-specific training • mechanical assisted training.	**Weak recommendation** **Updated** For stroke survivors with mild to severe arm weakness, mechanically assisted arm training (e.g. robotics) may be used to improve upper limb function.
	Strong recommendation **AGAINST** **New** Hand and wrist orthoses (splints) should not be used as part of routine practice as they have no effect on function, pain or range of movement.
One or more of the following interventions can be used in addition to those listed above: • mental practice • EMG biofeedback in conjunction with conventional therapy • electrical stimulation • mirror therapy • bilateral training.	**Weak recommendation** **Updated** For stroke survivors with mild to moderate arm impairment, virtual reality and interactive games may be used to improve upper limb function. Virtual reality therapy should be provided for at least 15 hours total therapy time and is most effective when used in the first six months after stroke.
	Weak recommendation **Updated** For stroke survivors with mild to severe arm or hand weakness, electrical stimulation in conjunction with motor training may be used to improve upper limb function.
	Weak recommendation **Updated** For stroke survivors with mild to moderate weakness of their arm, mental practice in conjunction with active motor training may be used to improve arm function.
	Weak recommendation **Updated** For stroke survivors with mild to moderate weakness, complex regional pain syndrome and/or neglect, mirror therapy may be used as an adjunct to routine therapy to improve arm function after stroke.

	Weak recommendation New For stroke survivors with at least some voluntary movement of the arm and hand, repetitive task-specific training may be used to improve arm and hand function.
	Weak recommendation AGAINST New Brain stimulation (transcranial direct stimulation or repetitive transcranial magnetic stimulation) should not be used in routine practice for improving arm function, and only used as part of a research framework.
Activities of daily living	**Activities of daily living**
Patients with difficulties in performance of daily activities should be assessed by a trained clinician.	**Strong recommendation Updated** • Community-dwelling stroke survivors who have difficulties performing daily activities should be assessed by a trained clinician. • Community-dwelling stroke survivors with confirmed difficulties in personal or extended ADL should have specific therapy from a trained clinician (e.g. task-specific practice and training in the use of appropriate aids) to address these issues.
Patients with confirmed difficulties in personal or extended ADL should have specific therapy (e.g. task-specific practice and trained use of appropriate aids) to address these issues.	
	Weak recommendation AGAINST New For older stroke survivors living in a nursing home, routine occupational therapy is not recommended to improve ADL function.
The routine use of acupuncture alone or in combination with traditional herbal medicines is NOT recommended in stroke rehabilitation.	**Strong recommendation AGAINST Updated** For stroke survivors in the acute, sub-acute or chronic phase post-stroke, acupuncture should not be used to improve ADL.
Administration of amphetamines to improve ADL is NOT recommended.	**Strong recommendation AGAINST** Administration of amphetamines to improve ADL is not recommended.
	Weak recommendation New For stroke survivors, selective serotonin reuptake inhibitors may be used to improve performance of ADL.

	Weak recommendation AGAINST New Brain stimulation (transcranial direct stimulation or repetitive transcranial magnetic stimulation) should not be used in routine practice to improve ADL and only used as part of a research framework.
	Weak recommendation New For stroke survivors, virtual reality technology may be used to improve ADL outcomes in addition to usual therapy.
Staff members and the stroke survivor and their carer/family should be advised regarding techniques and equipment to maximise outcomes relating to performance of daily activities and sensorimotor, perceptual and cognitive capacities.	
	Communication
	Assessment of communication deficits
All patients should be screened for communication deficits using a screening tool that is valid and reliable.	**Info Box Practice points New** • All stroke survivors should be screened for communication deficits using a screening tool that is valid and reliable. • Those stroke survivors with suspected communication difficulties should receive formal, comprehensive assessment by a specialist clinician to determine the nature and type of the communication impairment.
Those patients with suspected communication difficulties should receive formal, comprehensive assessment by a specialist clinician.	
Cognition	**Cognition and perception**
Assessment of cognition	**Assessment of cognition**
All patients should be screened for cognitive and perceptual deficits using validated and reliable screening tools.	**Info Box Practice points** • All stroke survivors should be screened for cognitive and perceptual deficits by a trained person (e.g. neuropsychologist, occupational

Patients identified during screening as having cognitive deficits should be referred for comprehensive clinical neuropsychological investigations.	therapist or speech pathologist) using validated and reliable screening tools, ideally prior to discharge from hospital. • Stroke survivors identified during screening as having cognitive deficits should be referred for comprehensive clinical neuropsychological investigations.
Executive functions	**Executive function**
Patients considered to have problems associated with executive functioning deficits should be formally assessed using reliable and valid tools that include measures of behavioural symptoms.	**Info Box Practice points** • Stroke survivors considered to have problems associated with executive functioning deficits should be formally assessed by a suitably qualified and trained person, using reliable and valid tools that include measures of behavioural symptoms. • For stroke survivors with impaired executive functioning, the way in which information is provided should be tailored to accommodate/compensate for the particular area of dysfunction.
In stroke survivors with impaired executive functioning, the way in which information is provided should be considered.	
External cues, such as a pager, can be used to initiate everyday activities in stroke survivors with impaired executive functioning.	**Weak recommendation Updated** For stroke survivors with cognitive impairment, meta-cognitive strategy and/or cognitive training may be provided.
Attention and concentration	**Attention and concentration**
Cognitive rehabilitation can be used in stroke survivors with attention and concentration deficits.	**Practice statement Consensus-based recommendation** For stroke survivors with attentional impairments or those who appear easily distracted or unable to concentrate, a formal neuropsychological or cognitive assessment should be performed.
	Weak recommendation For stroke survivors with attention and concentration deficits, cognitive rehabilitation may be used.
	Weak recommendation New For stroke survivors with attention and concentration deficits, exercise training and leisure activities may be provided.

Memory	Memory
Any patient found to have memory impairment causing difficulties in rehabilitation or adaptive functioning should: • be referred for a more comprehensive assessment of their memory abilities • have their nursing and therapy sessions tailored to use techniques which capitalise on preserved memory abilities • be assessed to see if compensatory techniques to reduce their disabilities, such as notebooks, diaries, audiotapes, electronic organisers and audio alarms, are useful • be taught approaches aimed at directly improving their memory • have therapy delivered in an environment as like the patient's usual environment as possible to encourage generalisation.	**Practice statement Consensus-based recommendations** Any stroke survivor found to have memory impairment causing difficulties in rehabilitation or adaptive functioning should: • be referred to a suitably qualified healthcare professional for a more comprehensive assessment of their memory abilities; • have their nursing and therapy sessions tailored to use techniques that capitalise on preserved memory abilities; • be assessed to see if compensatory techniques to reduce their disabilities, such as notebooks, diaries, audiotapes, electronic organisers and audio alarms are useful; • have therapy delivered in an environment as similar to the stroke survivor's usual environment as possible to encourage generalisation; • be taught strategies aimed at assisting their memory, e.g. using a notebook, diary, mobile phone/audio alerts, electronic calendars and/or reminders; • be taught approaches aimed at directly improving their memory, e.g. computerised memory training games and learning mnemonic strategies.
	Perception
	Practice statement Consensus-based recommendations New Stroke survivors with identified perceptual difficulties should have a formal perceptual (i.e. neurological and neuropsychological) assessment. Stroke survivors with an identified perceptual impairment and their carer should receive: • verbal and written information about the impairment; • an assessment and adaptation of their environment to reduce potential risk and promote independence; • practical advice/strategies to reduce risk (e.g. trips, falls, limb injury) and promote independence;

	• intervention to address the perceptual difficulties, ideally within the context of a clinical trial.
Limb apraxia	**Limb apraxia**
People with suspected difficulties executing tasks but who have adequate limb movement should be screened for apraxia and, if indicated, complete a comprehensive assessment.	**Info Box Practice point** Stroke survivors who have suspected difficulties executing tasks but who have adequate limb movement and sensation should be screened for apraxia.
For people with confirmed apraxia, tailored interventions (e.g. strategy training) can be used to improve ADL.	**Weak recommendation Updated** For stroke survivors with limb apraxia, interventions such as gesture training, strategy training and/or errorless learning may be provided.
Agnosia	Not included in the scope of these Clinical Guidelines.
Neglect	**Neglect**
Any patient with suspected or actual neglect or impairment of spatial awareness should have a full assessment using validated assessment tools.	**Info Box Practice point** Any stroke survivor with suspected or actual neglect or impairment of spatial awareness should have a full assessment using validated tools.
Patients with unilateral neglect can be trialled with one or more of the following interventions: • simple cues to draw attention to the affected side • visual scanning training in addition to sensory stimulation • prism adaptation • eye patching • mental imagery training or structured feedback.	**Weak recommendation Updated** For stroke survivors with symptoms of unilateral neglect, cognitive rehabilitation (e.g. computerised scanning training, pen and paper tasks, visual scanning training, eye patching, mental practice) may be provided.
	Weak recommendation New For stroke survivors with symptoms of unilateral neglect, mirror therapy may be used to improve arm function and ADL performance.
	Practice statement Consensus-based recommendations New Stroke survivors with impaired attention to one side should be: • given a clear explanation of the impairment;

	• taught compensatory strategies systematically, such as visual scanning to reduce the impact of neglect on activities such as reading, eating and walking; • given cues to draw attention to the affected side during therapy and nursing procedures; • monitored to ensure that they do not eat too little through missing food on one side of the plate.
	Weak recommendation AGAINST New Non-invasive brain stimulation should not be used in routine clinical practice to decrease unilateral neglect, but may be used within a research framework.
Chapter 7: Managing complications	**Chapter 6 of 8: Managing complications**
Spasticity	**Spasticity**
In stroke survivors who have persistent moderate to severe spasticity (i.e. spasticity that interferes with activity or personal care): • botulinum toxin A should be trialled in conjunction with rehabilitation therapy which includes setting clear goals • electrical stimulation and/or EMG biofeedback can be used.	**Weak recommendation Updated** For stroke survivors with ***upper*** limb spasticity, Botulinum Toxin A in addition to rehabilitation therapy may be used to reduce spasticity, but is unlikely to improve activity or motor function.
	Weak recommendation Updated For stroke survivors with ***lower*** limb spasticity, Botulinum Toxin A in addition to rehabilitation therapy may be used to reduce spasticity but is unlikely to improve motor function or walking.
	Weak recommendation AGAINST New For stroke survivors with spasticity, acupuncture should not be used for treatment of spasticity in routine practice other than as part of a research study.
	Weak recommendation Updated For stroke survivors with spasticity, adjunct therapies to Botulinum Toxin A, such as electrical stimulation, casting and taping, may be used.

	Weak recommendation AGAINST New For stroke survivors, the routine use of stretch to reduce spasticity is not recommended.
Interventions to decrease spasticity other than an early comprehensive therapy program should NOT be routinely provided for people who have mild to moderate spasticity (i.e. spasticity that does not interfere with a stroke survivor's activity or personal care).	-
Contracture	**Contracture**
For stroke survivors at risk of or who have developed contractures and are undergoing comprehensive rehabilitation, the routine use of splints or prolonged positioning of muscles in a lengthened position is NOT recommended.	**Strong recommendation AGAINST Updated** For stroke survivors at risk of developing contracture, routine use of splints or prolonged positioning of upper or lower limb muscles in a lengthened position (stretch) is not recommended.
Serial casting can be used to reduce severe, persistent contracture when conventional therapy has failed.	**Practice statement Consensus-based recommendations Updated** • For stroke survivors, serial casting may be trialled to reduce severe, persistent contracture when conventional therapy has failed. • For stroke survivors at risk of developing contracture or who have developed contracture, active motor training or electrical stimulation to elicit muscle activity should be provided.
Conventional therapy (i.e. early tailored interventions) should be provided for stroke survivors at risk of or who have developed contracture.	
Overhead pulley exercise should NOT be used routinely to maintain range of motion of the shoulder.	-
Subluxation	**Subluxation**
For people with severe weakness who are at risk of developing a subluxed shoulder, management should include one or more of the following interventions: • electrical stimulation • firm support devices • education and training for the patient, family/carer and clinical staff on how to correctly handle and position the affected upper limb.	**Weak recommendation Updated** For stroke survivors at risk of shoulder subluxation, electrical stimulation may be used in the first six months after stroke to prevent or reduce subluxation.

	Weak recommendation AGAINST New For stroke survivors at risk of shoulder subluxation, shoulder strapping is not recommended to prevent or reduce subluxation.
For people who have developed a subluxed shoulder, management may include firm support devices to prevent further subluxation.	**Practice statement Consensus-based recommendation** For stroke survivors at risk of shoulder subluxation, firm support devices (e.g. devices such as a laptray) may be used. A sling maybe used when standing or walking.
	Practice statement Consensus-based recommendation **Updated** To prevent complications related to shoulder subluxation, education and training about correct manual handling and positioning should be provided to the stroke survivor, their family/carer and health professionals, and particularly nursing and allied health staff.
Pain	
Shoulder pain	**Shoulder pain**
	Weak recommendation Updated For stroke survivors with shoulder pain, shoulder strapping may be used to reduce pain.
	Weak recommendation New For stroke survivors with shoulder pain, shoulder injections (either sub acromial steroid injections for patients with rotator cuff syndrome, or methylprednisolone and bupivacaine for suprascapular nerve block) may be used to reduce pain.
	Weak recommendation New For stroke survivors with shoulder pain and upper limb spasticity, Botulinum Toxin A may be used to reduce pain.
The routine use of the following interventions is NOT recommended for people who have already developed shoulder pain: • corticosteroid injections • ultrasound.	**Weak recommendation AGAINST New** For stroke survivors with shoulder pain, electrical stimulation is not recommended to manage pain.

For people with severe weakness who are at risk of developing shoulder pain, management may include: • shoulder strapping • interventions to educate staff, carers and people with stroke about preventing trauma.	**Practice statement Consensus-based recommendations Updated** For stroke survivors with severe weakness who are at risk of developing shoulder pain, management may include: • shoulder strapping; • education of staff, carers and stroke survivors about preventing trauma; • active motor training to improve function.
For people who develop shoulder pain, management should be based on evidence-based interventions for acute musculoskeletal pain.	**Info Box Practice point** For stroke survivors who develop shoulder pain, management should be based on evidence-based interventions for acute musculoskeletal pain.
Central post-stroke pain	Not included in the scope of these Clinical Guidelines.
Swelling of the extremities	**Swelling of the extremities**
For people who are immobile, management can include the following interventions to prevent swelling in the hand and foot: • dynamic pressure garments • electrical stimulation • elevation of the limb when resting.	**Practice statement Consensus-based recommendation** For stroke survivors with severe weakness who are at risk of developing swelling of the extremities, management may include the following: • dynamic pressure garments; • electrical stimulation; • elevation of the limb when resting.
For people who have swollen extremities, management can include the following interventions to reduce swelling in the hand and foot: • dynamic pressure garments • electrical stimulation • continuous passive motion with elevation • elevation of the limb when resting.	**Practice statement Consensus-based recommendation** For stroke survivors who have swelling of the hands or feet management may include the following: • dynamic pressure garments; • electrical stimulation; • continuous passive motion with elevation; • elevation of the limb when resting.

Fatigue	Fatigue
Therapy for stroke survivors with fatigue should be organised for periods of the day when they are most alert.	**Practice statement Consensus-based recommendations Updated** • Therapy for stroke survivors with fatigue should be organised for periods of the day when they are most alert. • Stroke survivors and their families/carers should be provided with information and education about fatigue. • Potential modifying factors for fatigue should be considered including avoiding sedating drugs and alcohol, screening for sleep-related breathing disorders and depression. • While there is insufficient evidence to guide practice, possible interventions could include exercise and improving sleep hygiene.
Stroke survivors and their families/carers should be provided with information and education about fatigue including potential management strategies such as exercise, establishing good sleep patterns, and avoidance of sedating drugs and excessive alcohol.	
Pressure care	Not included in the scope of these Clinical Guidelines.
Falls	**Falls**
Falls risk assessment should be undertaken using a valid tool on admission to hospital. A management plan should be initiated for all those identified as at risk of falls.	**Practice statement Consensus-based recommendations Updated** • For stroke patients, a falls risk assessment, including fear of falling, should be undertaken on admission to hospital. A management plan should be initiated for all patients identified as at risk of falls. • For stroke survivors at high risk of falls, a comprehensive home assessment for the purposes of reducing falling hazards should be carried out by a qualified health professional. Appropriate home modifications (as determined by a health professional) for example installation of grab rails and ramps may further reduce falls risk.
Multifactorial interventions in the community, including an individually prescribed exercise program, should be provided for people who are at risk of falling.	Weak recommendation Updated For stroke survivors who are at risk of falling, multifactorial interventions in the community, including an individually prescribed exercise program and advice on safety, should be provided.

	Chapter 7 of 8: Discharge planning and transfer of care
	Information and education
	Strong recommendation **New** • All stroke survivors and their families/carers should be offered information tailored to meet their individual needs using relevant language and communication formats. • Information should be provided at different stages in the recovery process. • An approach of active engagement with stroke survivors and their families/carers should be used allowing for the provision of material, opportunities for follow-up, clarification, and reinforcement.
	Info Box Practice points **New** • Stroke survivors and their families/carers should be educated in the FAST stroke recognition message to maximise early presentation to hospital in case of recurrent stroke. • The need for education, information and behaviour change to address long-term secondary stroke prevention should be emphasised.
	Discharge care plans
	Strong recommendation **New** Comprehensive discharge care plans that address the specific needs of the stroke survivor should be developed in conjunction with the stroke survivor and carer prior to discharge.
	Info Box Practice point **New** Discharge planning should commence as soon as possible after the stroke patient has been admitted to hospital.
	Practice statement Consensus-based recommendation A discharge planner may be used to coordinate a comprehensive discharge program for stroke survivors.

	Practice statement Consensus-based recommendations To ensure a safe discharge process occurs, hospital services should ensure the following steps are completed prior to discharge: • Stroke survivors and families/carers have the opportunity to identify and discuss their post-discharge needs (physical, emotional, social, recreational, financial and community support) with relevant members of the multidisciplinary team. • General practitioners, primary healthcare teams and community services are informed before or at the time of discharge. • All medications, equipment and support services necessary for a safe discharge are organised. • Any necessary continuing specialist treatment required has been organised. • A documented post-discharge care plan is developed in collaboration with the stroke survivor and family and a copy provided to them. This discharge planning process may involve relevant community services, self-management strategies (i.e. information on medications and compliance advice, goals and therapy to continue at home), stroke support services, any further rehabilitation or outpatient appointments, and an appropriate contact number for any post-discharge queries. • A locally developed protocol or standardised tool may assist in implementation of a safe and comprehensive discharge process.
	Patient and carer needs
	Practice statement Consensus-based recommendation Hospital services should ensure that stroke survivors and their families/carers have the opportunity to identify and discuss their post-discharge needs (including physical, emotional, social, recreational, financial and community support) with relevant members of the interdisciplinary team.

	Home assessment
	Practice statement Consensus-based recommendation Prior to hospital discharge, all stroke survivors should be assessed to determine the need for a home visit, which may be carried out to ensure safety and provision of appropriate aids, support and community services.
	Carer training
	Weak recommendation Relevant members of the interdisciplinary team should provide specific and tailored training for carers/family before the stroke survivor is discharged home. This training should include, as necessary, personal care techniques, communication strategies, physical handling techniques, information about ongoing prevention and other specific stroke-related problems, safe swallowing and appropriate dietary modifications, and management of behaviours and psychosocial issues.
Chapter 8: Community participation and long-term recovery	**Chapter 8 of 8: Community participation and long-term care**
Self-management	**Self-management**
Stroke survivors who are cognitively able should be made aware of the availability of generic self-management programs before discharge from hospital and be supported to access such programs once they have returned to the community.	**Weak recommendation New** • Stroke survivors who are cognitively able and their carers should be made aware of the availability of generic self-management programs before discharge from hospital and be supported to access such programs once they have returned to the community. • Stroke-specific self-management programs may be provided for those who require more specialised programs. • A collaboratively developed self-management care plan may be used to harness and optimise self-management skills.
Stroke-specific programs for self-management should be provided for those who require more specialised programs.	
A collaboratively developed self-management care plan can be used to harness and optimise self-management skills.	

Driving	Driving
All patients admitted to hospital should be asked if they intend to drive again.	**Practice statement** **Consensus-based recommendations** **Updated** • All stroke survivors or people who have had a transient ischaemic attack should be asked if they wish to resume driving. • Any person wishing to drive again after a stroke or TIA should be provided with information about how stroke may affect his/her driving and the requirements and processes for returning to driving. Information should be consistent with the Austroads standards and any relevant state guidelines. • For private licenses, stroke survivors should be instructed not to return to driving for a minimum of four weeks post stroke. People who have had a TIA should be instructed not to drive for two weeks. For commercial licenses, stroke survivors should be instructed not to return to driving for a minimum of 3 months post stroke. People who have had a TIA should be instructed not to drive for four weeks. • A follow-up assessment should be conducted by an **appropriate specialist** to determine medical fitness prior to return to driving. • If a stroke survivor is deemed medically fit but has residual motor, sensory or cognitive changes that may influence driving, they should be referred for an occupational therapy driving assessment. This may include clinic based assessments to determine on-road assessment requirements (for example modifications, type of vehicle, timing), on-road assessment and rehabilitation recommendations.
Any patient who does wish to drive should be given information about driving after stroke and be assessed for fitness to return to driving using the national guidelines (Assessing Fitness To Drive) and relevant state guidelines. Patients should be informed that they are required to report their condition to the relevant driver licence authority and notify their car insurance company before returning to driving.	
Stroke survivors should not return to driving for at least one month post event. A follow-up assessment (normally undertaken by a GP or specialist) should be conducted prior to driving to assess suitability. Patients with TIA should be instructed not to drive for two weeks.	
If a person is deemed medically fit but is required to undertake further testing, they should be referred for an occupational therapy driving assessment. Relevant health professionals should discuss the results of the test and provide a written record of the decision to the patient as well as informing the GP.	
	Weak recommendation **New** For stroke survivors needing driving rehabilitation, driving simulation may be used. Health professionals using driving simulation need to receive training and education to deliver intervention effectively and appropriately, and mitigate driving simulator sickness.

	Practice statement Consensus-based recommendation New On-road driving rehabilitation may be provided by health professionals specifically trained in driving rehabilitation.
	Community mobility and outdoor travel
People faced with difficulties in community transport and mobility should set individualised goals and undertake tailored strategies such as multiple (i.e. up to seven) escorted outdoor journeys (which may include practice crossing roads, visits to local shops, bus or train travel), help to resume driving, aids and equipment, and written information about local transport options/alternatives.	**Weak recommendation Updated** Stroke survivors who have difficulty with outdoor mobility in the community should set individualised goals and get assistance with adaptive equipment, information and referral on to other agencies. Escorted walking practice may be of benefit to some individuals and if provided, should occur in a variety of community settings and environments, and may also incorporate virtual reality training that mimics community walking.
Leisure	**Leisure**
Targeted occupational therapy programs can be used to increase participation in leisure activities.	**Weak recommendation** For stroke survivors, targeted occupational therapy programs including leisure therapy may be used to increase participation in leisure activities.
Return to work	**Return to work**
Stroke survivors who wish to work should be offered assessment (i.e. to establish their cognitive, language and physical abilities relative to their work demands), assistance to resume or take up work, or referral to a supported employment service.	**Weak recommendation** • All stroke survivors should be asked about their employment (paid and unpaid) prior to their stroke and if they wish to return to work. • For stroke survivors who wish to return to work, assessment should be offered to establish abilities relative to work demands. In addition, assistance to resume or take up work including worksite visits and workplace interventions, or referral to a supported employment service should be offered.

Sexuality	Sexuality
Stroke survivors and their partners should be offered: • the opportunity to discuss issues relating to sexuality with an appropriate health professional • written information addressing issues relating to sexuality post stroke.	**Practice statement Consensus-based recommendations** Stroke survivors and their partners should be offered: • the opportunity to discuss issues relating to sexual intimacy with an appropriate health professional; *and* • written information addressing issues relating to sexual intimacy and sexual dysfunction post stroke. Any interventions should address psychosocial as well as physical function.
Any interventions should address psychosocial aspects as well as physical function.	
Support	**Support**
Peer support	**Peer support**
Stroke survivors and family/carers should be given information about the availability and potential benefits of a local stroke support group and/or other sources of peer support before leaving hospital and when back in the community.	**Weak recommendation** Stroke survivors and their families/carers should be given information about the availability and potential benefits of a local stroke support group and/or other sources of peer support before leaving hospital and when back in the community.
Carer support	**Carer support**
Carers should be provided with tailored information and support during all stages of the recovery process. This includes (but is not limited to) information provision and opportunities to talk with relevant health professionals about the stroke, stroke team members and their roles, test or assessment results, intervention plans, discharge planning, community services and appropriate contact details.	**Strong recommendation** Carers of stroke survivors should be provided with tailored information and support during all stages of the recovery process. This support includes (but is not limited to) information provision and opportunities to talk with relevant health professionals about the stroke, stroke team members and their roles, test or assessment results, intervention plans, discharge planning, community services and appropriate contact details. Support and information provision for carers should occur prior to discharge from hospital and/or in the home and can be delivered face-to-face, via telephone or computer.

Carers should be offered support services after the person's return to the community. Such services can use a problem-solving or educational-counselling approach.	**Practice statement Consensus-based recommendations Updated** • Carers should receive psychosocial support throughout the stroke recovery continuum to ensure carer wellbeing and the sustainability of the care arrangement. Carers should be supported to explore and develop problem solving strategies, coping strategies and stress management techniques. The care arrangement has a significant impact on the relationship between caregiver and stroke survivor so psychosocial support should also be targeted towards protecting relationships within the stroke survivors support network. • Where it is the wish of the stroke survivor, carers should be actively involved in the recovery process by assisting with goal setting, therapy sessions, discharge planning, and long-term activities. • Carers should be provided with information about the availability and potential benefits of local stroke support groups and services, at or before the person's return to the community. • Assistance should be provided for families/carers to manage stroke survivors who have behavioural problems.
Where it is the wish of the person with stroke, carers should be actively involved in the recovery process by assisting with goal setting, therapy sessions, discharge planning, and long-term activities.	
Carers should be provided with information about the availability and potential benefits of local stroke support groups and services, at or before the person's return to the community.	
Assistance should be provided for families/carers to manage stroke survivors who have behavioural problems.	

For access to the full Clinical Guidelines and further information refer to InformMe https://informme.org.au/en/Guidelines/Clinical-Guidelines-for-Stroke-Management-2017.