

118

Management of patients with stroke:
Rehabilitation, prevention and management
of complications, and discharge planning

Quick Reference Guide

June 2010

ISBN 978 1 905813 64 3

First published June 2010

Revised March 2011

**Scottish Intercollegiate Guidelines Network
Elliott House, 8-10 Hillside Crescent, Edinburgh EH7 5EA
www.sign.ac.uk**

Stroke is the third commonest cause of death and the most frequent cause of severe adult disability in Scotland.

Seventy thousand individuals are living with stroke and its consequences and each year, there will be approximately 12,500 new stroke events. Immediate mortality is high and approximately 20% of stroke patients die within 30 days.

For those who survive, the recovery of neurological impairment takes place over a variable time span. About 30% of survivors will be fully independent within three weeks, rising to nearly 50% by six months.

The World Health Organization (WHO) International Classification of Impairments, Disabilities and Handicaps (ICIDH) provides the following framework for considering the impact of stroke on the individual:

- pathology (disease or diagnosis): operating at level of the organ or organ system
- impairment (symptoms and signs): operating at the level of the whole body
- activity limitations (disability): observed behavior or function
- participation restriction (handicap): social position and roles of the individual.

This quick reference guide provides a summary of the main recommendations in the **SIGN guideline 118 Management of patients with stroke: rehabilitation, prevention and management of complications, and discharge planning.**

Recommendations are arranged in the following sections:

- Organisation of services
- Management and prevention strategies
- Transfer from hospital to home
- Provision of information

The guideline complements **SIGN 119 Management of patients with stroke: identification and management of dysphagia** and **SIGN 108 Management of patients with stroke or TIA: assessment, investigation, immediate management and secondary prevention.**

Recommendations are graded **A B C D** to indicate the strength of the supporting evidence. Good practice points are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: **www.sign.ac.uk**

ORGANISATION OF SERVICES

The main issues in planning services for stroke patients are:

- organisation of hospital care (eg urban or remote and rural)
- hospital or home based care
- discharge and post-discharge services
- ongoing rehabilitation and follow up (including specific needs of younger people).

Referral to stroke services

The early assessment, diagnosis and in-hospital treatment of patients with suspected stroke reduces mortality and morbidity.

- All patients with suspected stroke (irrespective of severity) should be referred urgently to stroke services.
- Patients should receive information about the risk of recurrent stroke, the signs and symptoms of onset and the action they should take if stroke is suspected, for example FAST (Face, Arm, Speech, Time (to call 999)).
- In areas without a local stroke specialist, telemedicine consultation should be considered.

Organisation of hospital care

Stroke patients have better clinical outcomes in terms of survival, returning home and independence if they are managed in a stroke unit rather than admitted to a general ward or remaining at home.

- A** **Stroke patients requiring admission to hospital should be admitted to a stroke unit staffed by a coordinated multidisciplinary team with a special interest in stroke care.**
- B** **In exceptional circumstances, when admission to a stroke unit is not possible, rehabilitation should be provided in a generic rehabilitation ward on an individual basis.**

Multidisciplinary team membership

B **The core MDT should include appropriate levels of:**

- nursing
- medical
- physiotherapy
- occupational therapy
- speech and language therapy, and
- social work staff.

Other disciplines also regularly involved include:

- clinical psychologists
- dietitians
- ophthalmologists
- orthoptists
- orthotists
- psychiatrists.

B **Stroke unit teams should conduct at least one formal multidisciplinary meeting per week at which patient problems are identified, rehabilitation goals set, progress monitored and discharge is planned.**

B **Patients and carers should have an early active involvement in the rehabilitation process.**

- NHS Board areas should consider developing specialist stroke nurse led support services.

MANAGEMENT AND PREVENTION STRATEGIES

The conventional approach to rehabilitation is a cyclical process:

- assessment: patients' needs are identified and quantified
- goal setting: goals are defined for improvement (long/medium/short term)
- intervention: to assist in the achievement of the goals
- re-assessment: progress is assessed against the agreed goals.

Rehabilitation goals can be considered at several levels:

- aims: often long term and referring to situation after discharge
- objectives: usually multiprofessional at the level of disability
- targets: short term time-limited goals.

General rehabilitation principles

Early mobilisation

A number of post-stroke complications are associated with immobility.

- B** **Stroke patients should be mobilised as early as possible after stroke.**

Therapeutic positioning

The aim of positioning the patient is to try to promote optimal recovery by modulating muscle tone, providing appropriate sensory information and increasing spatial awareness and to prevent complications such as pressure sores, contractures, pain and respiratory problems and assist safer eating.

- C**
- **Patients should be placed in the upright sitting position, if their medical condition allows.**
 - **Hypoxia inducing positions** (*lying on the left side regardless of affected side or slumped in a chair*) **should be avoided.**

Pressure ulcers

- D**
- **Hospital managers should ensure that nursing expertise, staffing and equipment levels are sufficient to prevent pressure ulcers.**
 - **Hospitals should have up-to-date policies on risk assessment, pressure ulcer prevention and treatment.**

Infection

- Stroke unit staff should recognise, assess, investigate and treat common infections such as chest or urinary tract infections.

Venous thromboembolism

- A** **Aspirin (300 mg/day) should be given to all patients with acute ischaemic stroke in the first two weeks following stroke onset to help prevent deep vein thrombosis and pulmonary embolism** (*provided there are no known contraindications to aspirin therapy*).

- Two weeks following acute ischaemic stroke, clinicians should re-assess the patient's risk for DVT and consider starting additional prophylactic medical treatment (eg heparin).

- A** **Above-knee graduated elastic compression stockings to reduce the risk of deep vein thrombosis after acute stroke are not recommended.**

Activities of daily living

Activities of daily living training can be divided into personal activities (self care) and extended activities. Occupational therapists use the process of activity analysis to grade activities of daily living so that they are achievable, but challenging, in order to promote recovery after stroke.

Personal ADL training by occupational therapists is recommended:

- B** ▪ as part of an in-patient stroke rehabilitation programme
- A** ▪ for patients with stroke in the community.

Gait, balance and mobility

Recommended:

- C** ▪ **AFOs** (*to improve walking speed efficiency, gait pattern or weight bearing during stance*)
- A** ▪ **Gait-oriented physical fitness training to improve functional ambulation for patients assessed as medically stable and functionally safe to participate**
- B** ▪ **Repetitive task training to improve gait speed, walking distance, functional ambulation or sit-to-stand-to-sit**
- B** ▪ **Muscle strength training**
- B** ▪ **Interventions suited to the individual needs of the patient**
- B** ▪ **Increased intensity of rehabilitation when considered safe.**

May be considered:

- B** ▪ **Treadmill training to improve gait speed in people who are independent in walking at the start of treatment**
- C** ▪ **Functional electrical stimulation as a treatment for drop-foot** (*to improve walking speed and/or efficiency*)
- B** ▪ **Electromechanical assisted gait training for selected patients where equipment is available and healthcare professionals are competent in its use.**

Not recommended:

- B** ▪ **Treadmill training as routine gait training**
- B** ▪ **Routine EMG biofeedback**
- B** ▪ **Balance platform training with visual feedback.**

Upper limb function

May be considered:

- B** ▪ **Constraint induced movement therapy for carefully selected individuals with at least 10 degrees of finger extension, intact balance and cognition**
- D** ▪ **Mental practice as an adjunct to normal practice**
- A** ▪ **Electromechanical/robotic devices to improve arm motor function and motor strength in selected patients where equipment is available and healthcare professionals are competent in its use.**

Not recommended:

- A** ▪ **Repetitive task training**
- B** ▪ **Splinting**
- B** ▪ **Increased intensity of therapy.**

Cognition

Cognitive changes after a stroke may be general (eg slowing of information processing), or may occur within specific domains (eg orientation, attention, memory, visuospatial and visuoconstructive, mental flexibility, planning and organisation and language). Some patients may experience problems with reasoning or limited awareness or lack of insight into their difficulties.

- A full understanding of the patient's cognitive strengths and weaknesses should be an integral part of the rehabilitation plan.
 - Patients should have a full assessment of their cognitive strengths and weaknesses when undergoing rehabilitation or when returning to cognitively demanding activities such as driving or work.
 - Cognitive assessment may be carried out by occupational therapists with expertise in neurological care, although some patients with more complex needs will require access to specialist neuropsychological expertise.

Visual problems

There are many visual problems associated with stroke, including visual field defects, disorders of eye movement and visuospatial neglect. Given that the incidence of stroke increases with age, a significant proportion of stroke patients have concurrent age-related visual problems.

- For inpatients, orthoptic eye examinations should assess stroke-related visual problems in addition to assessing visual acuity and other ocular pathologies. For outpatients, optometric eye examinations are recommended.

- C**
 - **All stroke patients should be screened for visual problems, and referred appropriately.**
 - **Healthcare professionals should ensure that patients have and correctly wear their prescribed eyewear.**

- Patients with hemianopia should be referred to ophthalmology for visual field assessment and possible partial sight registration.
 - Patients with disorders of eye movements should be referred for orthoptic assessment and should receive appropriate advice or interventions from appropriately trained specialists.
 - Patients with visuospatial neglect should have assessment and be taught compensatory strategies.

Communication

- B** **Aphasic stroke patients should be referred for speech and language therapy. Where the patient is sufficiently well and motivated, a minimum of two hours per week should be provided.**

Aphasia is an acquired multimodal language disorder affecting the ability to talk, write and understand spoken and written language leaving other cognitive abilities relatively intact.

Dysarthria is a motor speech impairment of varying severity affecting clarity of speech, voice quality and volume, and overall intelligibility.

- D** **Patients with dysarthria should be referred to an appropriate speech and language therapy service for assessment and management.**

Nutrition and swallowing

Careful assessment of nutritional status and of swallowing impairment, careful fluid management, and routine use of intravenous fluids are consistent features of early management for patients in stroke units. **SIGN 119** makes recommendations on identification and management of dysphagia in stroke patients.

Nutritional screening and assessment

D Assessment of nutritional risk should be carried out within the first 48 hours with regular re-assessment thereafter during the patient's recovery and be recorded prior to discharge.

D Assessment of a patient's nutritional risk should include an assessment of their ability to eat independently and a periodic record of their food consumption.

D Ongoing monitoring of nutritional status should include a combination of the following parameters:

- biochemical measures (*ie low pre-albumin, impaired glucose metabolism*)
- swallowing status
- unintentional weight loss
- eating assessment and dependence
- nutritional intake.

Nutritional interventions

C Following nutritional screening, those identified as undernourished, and those at risk of becoming undernourished, should be referred to a dietitian and considered for prescription of oral nutritional supplements as part of their overall nutritional care plan.

Dysphagia therapy

D All patients who have dysphagia for more than one week should be assessed to determine their suitability for a rehabilitative swallowing therapy programme. Consideration should be given to:

- the nature of the underlying swallowing impairment
- patient suitability in terms of motivation and cognitive status.

B Patients with dysphagia should have an oropharyngeal swallowing rehabilitation programme that includes restorative exercises in addition to compensatory techniques and diet modification.

Continence

The incidence of incontinence of urine and faeces is increased following stroke. Special attention should be paid to the practical problems faced by patients with stroke, eg functional activity limitations, aphasia and cognitive impairment when planning management strategies.

Urinary incontinence

D All patients should be assessed, investigated and treated for urinary incontinence.

D The presence or absence of incontinence of urine should be documented for all patients after a stroke.

D Behavioural therapies for incontinence should be trialled on an individual basis after stroke.

The continence assessment should include:

- a history of duration of incontinence problem
- a history of urinary and bowel symptoms
- current drug history
- obstetric history for women
- prostatic symptoms for men
- abdominal examination/palpable bladder
- rectal examination (both sexes)
- vaginal examination
- cognitive status
- urinalysis
- midstream urine if proteinuria or haematuria
- urea and electrolytes
- three day bladder diary/frequency volume chart
- post-micturition bladder volume.

Faecal incontinence

Faecal incontinence after stroke can be improved in most patients after faecal loading and infective diarrhoea (eg due to *Clostridium difficile*) have been treated, and there are a number of management strategies that can help achieve continence. These include:

- manipulation of the gastrocolic reflex where bowel evacuation is common after meals
- helping the patient to sit on the toilet after meals and ensuring correct positioning to use the toilet
- in exceptional circumstances, regular use of a constipating agent and bowel care with an enema.

- Patients should have individualised bowel programmes that are patient-centred and the assessment should include physical ability, availability of care, social setting, clinical issues, dietary factors, medications.
- There should be due cognisance of an individual's life style and care preferences when designing a bowel programme.
- Information provision, education and support for patient and carer are essential.

Post-stroke fatigue

A case definition of post-stroke fatigue has been made for both community and hospital patients:

Post-stroke fatigue in community patients: Over the past month, there has been at least a two week period when the patient has experienced fatigue, a lack of energy or an increased need to rest every day or nearly every day. This fatigue results in difficulty taking part in everyday activities.

Post-stroke fatigue in hospital patients: Since their stroke, the patient has experienced fatigue, a lack of energy or an increased need to rest every day or nearly every day. This fatigue has led to difficulty taking part in everyday activities (for inpatients this may include therapy and may include the need to terminate an activity early because of fatigue).

- Patients with post-stroke fatigue should be screened for depression.

Post-stroke spasticity

A **May be considered:**
Clostridium botulinum toxin type A (Botox®).

A **Not recommended:**

- **Routine resting splinting of the upper limb.**

Prevention and treatment of shoulder subluxation

Inferior glenohumeral joint displacement is more commonly known as shoulder subluxation. Its prevention is an important aspect of stroke rehabilitation as it is associated with poor upper limb function.

Patients with little or no active shoulder muscle activity should be considered for subluxation prevention strategies.

A **Electrical stimulation to the supraspinatus and deltoid muscles should be considered as soon as possible after stroke in patients at risk of developing shoulder subluxation.**

Pain

Patients should be asked about pain and the presence of pain should be assessed (for example, with a validated pain assessment tool) and treated appropriately, as soon as possible.

Central post-stroke pain (CPSP)

B **Consider amitriptyline (titrated to a dose of 75 mg) in patients with CPSP unresponsive to standard treatment. Be aware of potential side effects.**

B **Lamotrigine or carbamazepine are alternatives although the high incidence of side effects should be recognised.**

Complex regional pain syndrome (CRPS) is an uncommon and complex complication of stroke.

Patients with suspected CRPS should be referred to a clinician with expertise in the management of the condition.

Post-stroke shoulder pain

Post-stroke shoulder pain may contribute to poor upper limb recovery and prolonged hospital stay, as well as depression, sleeplessness and poor quality of life for patients following stroke.

Given the complexity of post-stroke shoulder pain consideration should be given to use of algorithms or an integrated care pathway for its diagnosis and management.

Prevention

Not recommended:

B

- **overhead pulleys**

A

- **functional electrical stimulation.**

Treatment

Not recommended:

A

- **shoulder strapping**

A

- **intra-articular steroids in the absence of inflammatory disorders.**

Disturbances of mood and emotional behaviour

Mood disturbance is a very common problem after stroke. Diagnosis may be complicated by the similarity of symptoms of depression and anxiety to physical and cognitive changes associated with the stroke.

- All stroke patients (including those in primary care) should be screened for mood disturbance.
 - Some form of screening should occur, eg using the Stroke Aphasic Depression Questionnaire (SAD-Q) or General Health Questionnaire of 12 items (GHQ-12):
 - as early as appropriate and definitely before discharge, and
 - at regular intervals thereafter.
 - Clinical judgement should be used to determine how regularly mood should be re-assessed.
 - Individuals suspected of having a mood disorder should be referred to an appropriately trained professional for a full assessment, or to a rehabilitation team member who has received training in the identification of psychological distress.

Emotional lability

Emotional lability is common following stroke, affecting approximately 1 in 10 survivors at one year post stroke, and more individuals immediately after stroke onset.

B Patients with post-stroke emotionalism may be considered for a course of antidepressant medication.

Preventing post-stroke depression

A Routine prescription of antidepressants is not recommended.

- B**
- Offering routine psychological therapies in one-to-one format following a stroke is not recommended to prevent post-stroke depression.
 - Psychological principles from motivational interviewing and problem solving should be incorporated into education programmes for people who have had a stroke.

Treating post-stroke depression

A Patients with post-stroke depression should be considered for antidepressant treatment, with decisions made on an individual basis. Clinicians should monitor response to treatment, plan regular reviews and should be vigilant to the possible occurrence of unwanted side effects, issues of adherence to medication and the possibility of symptom relapse.

Post-stroke emotional adjustment

Attitudes and beliefs of people who have had a stroke and their caregivers towards their recovery have an impact on their clinical outcomes, eg making a better recovery than clinically expected.

- People who have had a stroke should be considered for workbook approaches that aim to address their beliefs and attitudes about their recovery.

Sexuality encompasses expression of attractiveness and intimacy, as well as sexual relations. The effects of stroke can cause sexually-related difficulties. Medication, particularly antihypertensives, can also interfere with sexual function.

- Healthcare professionals should provide advice and information to patients and partners about sexuality and sex after stroke on an individualised basis.

TRANSFER FROM HOSPITAL TO HOME

Pre-discharge

For many stroke patients and their carers the transition between the protective environment of the hospital to independence at home can be an overwhelming and challenging experience.

- The pre-discharge process should involve the patient and carer(s), the primary care team, social services and allied health professionals as appropriate. It should take account of the domestic circumstances of the patient, or if the patient lives in residential or sheltered care, the facilities available there.
 - Essential alterations to the patient's home should be completed and necessary aids installed prior to discharge.

D Pre-discharge home visits should be undertaken for patients who require them.

Discharge

Discharge planning should be documented in a discharge document. The following information should be accurately and legibly displayed in the discharge documents:

- Diagnosis(es)
- Investigations and results
- Medication and duration of treatment if applicable
- Levels of achievement, ability and recovery
- Team care plan
- Further investigations needed at primary care level with dates
- Further investigations needed at hospital and dates
- Further hospital attendance with dates
- Transport arrangements
- The hospital name, hospital telephone number, ward name or number, ward telephone number
- Consultant's name and named nurse
- The date of admission and discharge.

- At the time of discharge, the discharge document should be sent to all the relevant agencies and teams.

Early supported discharge

Early supported discharge reduces death and dependency in patients with mild/moderate stroke and reduces length of hospital stay.

A **Patients with mild/moderate stroke should be able to access stroke specialist early supported discharge services in addition to conventional organised stroke inpatient services.**

B **ESD teams should consist of a specialist multidisciplinary group including nursing, medical, physiotherapy, speech and language therapy and occupational therapy staff.**

Home based or outpatient rehabilitation?

There is no difference in effectiveness between post-stroke rehabilitation provided in a domiciliary setting compared to a hospital based (outpatient or day hospital) setting.

A **Home based or hospital based (outpatient or day hospital) rehabilitation should be considered for people after stroke.**

Longer term stroke rehabilitation in the community

Therapy-based rehabilitation services targeted towards stroke patients living at home appear to improve independence in personal activities of daily living.

A **Stroke patients in the community should have access to specialist therapy-based rehabilitation services.**

Moving on after a stroke

Returning to work

Barriers to return to work include lack of access to specialist vocational rehabilitation staff, pessimistic healthcare professionals and insufficient scope of rehabilitation.

- Early in the rehabilitation pathway patients should be asked about vocational activities and liaison initiated with employers.
 - Once work requirements are established patients should have appropriate assessments made of their ability to meet the needs of their current or potential employment.
 - NHS Boards should consider providing a specific local expert therapist to provide advice to rehabilitation teams including signposting to relevant statutory services.
 - People wishing to return to work should have access to advice on benefits, employment and legal rights and referral to social work if appropriate.

Driving after a stroke

The rules regarding driving after stroke are summarised in a guide published by the Driver and Vehicle Licensing Agency (DVLA).

- Patients with stroke should be advised that they must not drive for at least one month after their stroke.
 - Patients with residual activity limitations at one month must inform the DVLA (particularly if there are visual problems, motor weakness or cognitive deficits) and can only resume driving if their physician/GP agrees, or after formal assessment.
 - When assessing whether a patient has made a satisfactory recovery, clinicians should be vigilant to possible executive function impairment.

D **If there is doubt about a patient's ability to drive, patients should be referred to the local Disabled Drivers' Assessment Centre** (*details available from the DVLA*).

Physical activity after stroke

A stroke may have a considerable impact on a person's ability to participate in physical activity. After stroke physical fitness may be reduced to a level that is insufficient for undertaking even basic household tasks. Impaired physical fitness after stroke presents a risk for recurrent stroke, cardiac disease and fall-related fractures, while it may also affect reintegration into the community.

Services need to be available in the community to encourage people with stroke to engage in physical activity. These may include:

- exercise classes provided by physiotherapists and stroke nurses in rehabilitation settings
- exercise services run by community based leisure centres. These may be stroke-specific or mixed
- physical activity sessions run by local stroke charities, based on demand from members.

General practitioner care

GPs have particular strengths in problem solving, treating comorbidities in the patient, and the additional burden of helping carers who may have illnesses of their own to cope with caring.

D **If the patient is to be admitted, the GP should communicate with the hospital staff the basis of the diagnosis, the pre-morbid condition of the patient, any relevant social factors and past medical history, including current medication and known allergies.**

Out of hours, the referring GP should ensure that the Emergency Care Summary which details essential information for out of hours doctors obtained from the patient's own general practitioner, is provided for the admitting hospital staff with the consent of the patient.

D **For successful discharge, the GPs and community staff should receive adequate information from the hospital prior to discharge.**

- Detailed information on continuing medication as well as prescribing changes made in hospital and the reason for such changes should be provided.
- GPs should aim to enable patients to receive appropriate rehabilitation to maintain and improve levels of functioning while monitoring the patient's physical and emotional well-being.
- Secondary prevention, medication and lifestyle interventions for patients after stroke should also be monitored in primary care.
- Pain should be identified, assessed and treated. Where pain is unresponsive to standard treatment, patients should be assessed for central post-stroke pain.

PROVISION OF INFORMATION

Information needs of patients and carers

Active information provision has been shown to improve knowledge of stroke, increase aspects of patient satisfaction and reduce patient depression

A **Information should be available to patients and carers routinely and offered using active information strategies, which include a mixture of education and counselling techniques.**

A **Information should be tailored to the information needs of individual patients and carers, followed up to check understanding and ensure clarity, and repeated as appropriate.**

D **Information should be tailored to the communication needs and visual needs of individual patients and carers. Patients with aphasia should be provided with accessible and easy to read material and be given sufficient time for assimilation and be followed up by health professionals to ensure understanding.**

A **Information needs should be monitored and information should be provided at appropriate time points during the recovery trajectory, as information needs change over time.**

SOURCES OF FURTHER INFORMATION

Carers Scotland

91 Mitchell Street, Glasgow G1 3LN

Tel: 0141 221 9141

www.carerscotland.org

Email: info@carerscotland.org

Chest, Heart and Stroke Scotland

65 North Castle Street, Edinburgh EH2 3LT

Tel: 0131 225 6963

Advice Line: 0845 077 6000

Fax: 0131 220 6313

www.chss.org.uk

Email: admin@chss.org.uk

Connect: the communication disability network

16-18 Marshalsea Road, London, SE1 1HL

Tel: 020 7367 0840

www.ukconnect.org

Email: info@ukconnect.org

Crossroads Scotland

24 George Square, Glasgow G2 1EN

Tel: 0141 226 3793

www.crossroads-scotland.co.uk

DVLA Drivers Group

DVLA, Swansea, SA99 1TU

Tel: 0300 790 6806

Fax: 0845 850 0095

www.direct.gov.uk/en/Motoring/

DriverLicensing/MedicalRulesForDrivers/index.htm

Email: eftd@dvla.gsi.gov.uk

Different Strokes (Scotland)

53 Elmore Avenue, Glasgow G44 5BH

Tel: 0141 569 3200

www.differentstrokes.co.uk

Email: glasgow@differentstrokes.co.uk

Disability Alliance

Universal House,

88-94 Wentworth Street, London, E1 7SA

Tel: 020 7247 8776 (Voice and Minicom)

Fax: 020 7247 8765

www.disabilityalliance.org

Email: office@disabilityalliance.org

Momentum

Pavilion 7 Watermark Park,

325 Govan Road, Glasgow G51 2SE

Tel: 0141 419 5299

Fax: 0141 419 0821

www.momentumscotland.org

Email: headoffice@momentumscotland.org

Princess Royal Trust for Carers

Charles Oakley House,

125 West Regent Street, Glasgow G2 2SD

Tel: 0141 221 5066

www.carers.org.uk

Email: infoscotland@carers.org

Royal National Institute for the Blind (RNIB) Scotland

12-14 Hillside Crescent,

Edinburgh, EH7 5EA

Tel: 0131 652 3140

Scottish Centre of Technology for the Communication Impaired (SCTCI)

WESTMARC, Southern General Hospital,

1345 Govan Road, Glasgow, G51 4TF

Tel: 0141 201 2619

Fax: 0141 201 2618

Email: sctci@ggc.scot.nhs.uk

Scottish Driving Assessment Service at SMART Centre

Astley Ainslie Hospital, 133 Grange Loan,

Edinburgh, EH9 5HL

Tel: 0131 537 9192

Speakability

1 Royal Street, London, SE1 7LL

Helpline: 080 8808 9572

www.speakability.org.uk

Email speakability@speakability.org.uk

Stroke Association

15 Links Place, Edinburgh EH6 7EZ

Tel: 0131 555 7240

National stroke helpline: 0845 30 33 100

Fax: 0131 555 7259

www.stroke.org.uk

Email: scotland@stroke.org.uk

ISBN 978 1 905813 64 3

Scottish Intercollegiate Guidelines Network
Elliott House
8-10 Hillside Crescent
Edinburgh EH7 5EA

www.sign.ac.uk

