University of Glasgow
College of Medical, Veterinary & Life Sciences
Nursing & Health Care School

NHS
Quality Improvement Scotland

Best Practice Statement ~ March 2011

Pain management following acute stroke

NHS Quality Improvement Scotland is committed to equality and diversity. We have assessed this Best Practice Statement for likely impact on the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. For a summary of the equality and diversity impact assessment, please see our website (www.nhshealthquality.org). The full report in electronic or paper form is available on request from the NHS QIS Equality and Diversity Officer.

This best practice statement was published jointly by the University of Glasgow and NHS Quality Improvement Scotland (NHS QIS). On 1 April 2011, NHS QIS will become Healthcare Improvement Scotland.

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www.**nhshealthquality**.org

Contents

Introduction

NHS Quality Improvement Scotland (NHS QIS) leads the use of knowledge to promote improvement in the quality of health for the people of Scotland and performs three key functions:

- providing advice and guidance on effective clinical practice, including setting standards
- driving and supporting implementation of improvements in quality, and
- assessing the performance of the NHS, reporting and publishing the findings.

In addition, NHS QIS also has central responsibility for patient safety and clinical governance across NHSScotland.

This best practice statement was produced by University of Glasgow using the NHS QIS methodology and with project support from NHS QIS. Funding for the project was granted by the National Advisory Committee on Stroke with support from NHS Greater Glasgow and Clyde Stroke Managed Clinical Network. It is a consensus statement agreed by a representative working group of stroke care professionals. It is not a systematic review or a clinical guideline but is based upon a review of the available literature, conducted in a systematic and logical way.

Key principles of best practice statements

A series of best practice statements has been produced by NHS QIS, designed to offer guidance on best and achievable practice in a specific area of care. These statements reflect the current emphasis on delivering care that is patient-centred, cost-effective and fair. They reflect the commitment of NHS QIS to sharing local excellence at a national level.

Best practice statements are produced by a systematic process, outlined overleaf, and underpinned by a number of key principles.

- They are intended to guide practice and promote a consistent, cohesive and achievable approach to care. Their aims are realistic but challenging.
- They are primarily intended for use by registered nurses, midwives, allied health professionals, and the staff who support them, but will also be of relevance to medical professionals.
- They are developed where variation in practice exists and seek to establish an agreed approach for practitioners.
- Responsibility for implementation of these statements rests at local level.

Best practice statements are periodically reviewed, and, if necessary, updated in order to ensure the statements continue to reflect current thinking with regard to best practice.

This best practice statement is accessible electronically via the NHS QIS website **(www.nhshealthquality.org)** and the University of Glasgow University website **(www.glasgow.ac.uk/nursing)**.

Supporting implementation

In the interests of supporting implementation, readers are encouraged to use the tools in Appendices 1 and 2, either for reflection on individual competence, confidence and practice, or for improvement at an organisational level.

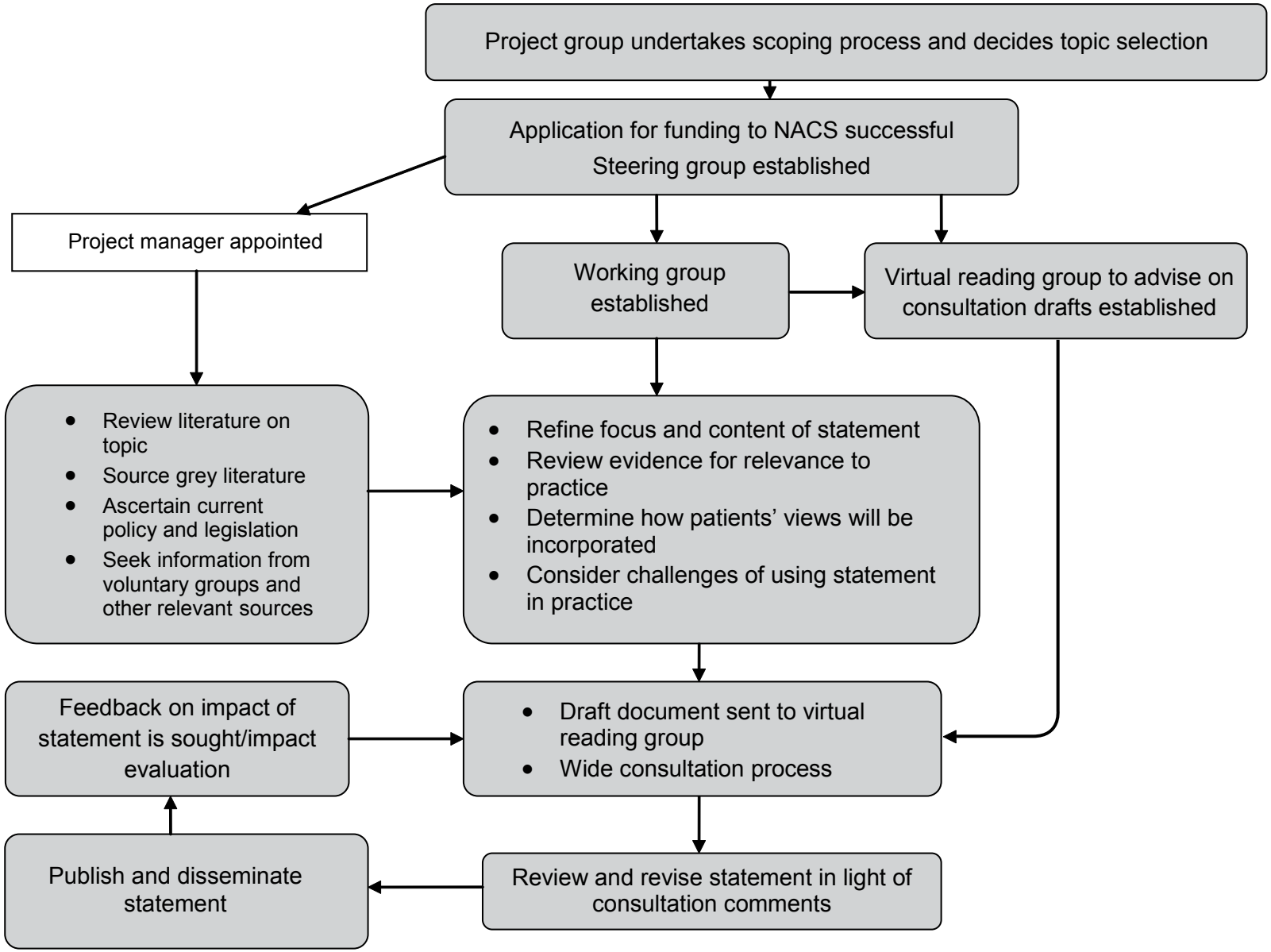
Comments on best practice statements are very much welcomed. We are always keen to hear from anyone who has been involved with using the statements in their own area of practice. In particular, we would like to hear about specific successes or challenges relating to implementation and impact on quality of care provision.

Any information provided will be used to inform the next review of the statement.

Please forward any comments to: **qis.bestpracticestatements@nhs.net**

Privacy note: We will only use your email details to reply to your comment. Your address will not be passed on to any third parties.

Key stages in the development of this best practice statement



Background

Stroke can be a sudden and catastrophic event, carrying a significant risk of death. In 2009, around 8,000 people were admitted to hospitals in Scotland following a stroke[1]. Stroke, along with cancer and heart disease, remains one of the three biggest killers in Scotland[2]. For these reasons, stroke remains a national clinical priority for Scotland[3]. Caring for stroke patients in dedicated stroke units has been shown to result in lower levels of mortality and disability[4].

Throughout this statement, the term 'patient' refers to patients affected specifically by stroke unless otherwise indicated.

Pain is known to be a common complication following stroke[5]. Pain may be present for a variety of reasons relating to the effects of stroke or to pre-existing conditions[5].

Pain has been defined by the International Association for the Study of Pain (IASP) as:

> "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[6,p250]

The Royal College of Physicians gives an expanded definition as follows:

> "Pain is a subjective, personal experience, only known to the person who suffers. The experience of pain is multidimensional and may be described at several levels:
>
> - sensory dimension: the intensity, location and character of the pain sensation
> - affective dimension: the emotional component of pain and how pain is perceived
> - impact: the disabling effects of pain on the person's ability to function and participate in society."[7,p2]

In addition, McCaffery (1980) made a classic statement that:

> "Pain is whatever the patient in pain says it is, existing whenever he says it does."[8,p26]

Pain is a significant part of many stroke patients' experience. Although pain is defined as an individualised experience, specific types of pain which commonly occur following stroke are well described. Headache[9], hemiplegic shoulder pain(HSP)[10] and neuropathic pain including central post stroke pain (CPSP)[11] are among the major types of pain described and all can occur within the first month following stroke[12-14] as well as in the longer term. While pain and other symptoms of stroke require to be managed, the patient and their experience should always be at the centre of staff concerns. The British Pain Society makes a distinction between acute and chronic pain:

> "Pain is an emotion experienced in the brain; it is not like touch, taste, sight, smell or hearing. It is categorised into acute pain - less than twelve weeks duration and chronic pain - of more than twelve weeks. Pain can be perceived as a warning of potential damage, but can also be present when no actual harm is being done to the body."[15]

Within post stroke pain literature there are many papers which deal with chronic pain following stroke, for example chronic shoulder pain[16] and CPSP[17]. It has been demonstrated that pain is common in the first 30 days following stroke[18,19] and that specific types of CPSP may actually begin within the first 30 days[14,18-22]. Therefore this statement will highlight best nursing practice in the assessment, management and prevention of pain within that time period.

SIGN 118 states that every stroke patient is to be assessed for the presence of pain "as soon as possible"[5,p6]. Pain has been referred to as the fifth vital sign[23] after blood pressure, heart rate, respiratory rate and temperature. Routine measurement of pain as a fifth vital sign, however, has been shown not to lead in itself to an improvement in pain management[24].

Stroke-related cognitive impairment or aphasia may affect a patient's ability to self-report pain[7]. However, in many cases, it is still possible for healthcare staff to assess pain in affected patients by using an appropriate scale[7]. Further work is required to produce validated tools for pain assessment in those with cognitive, visual and severe communication impairment post stroke.

The literature on pain following stroke tends to look at chronic pain. There were relatively few papers concerned with pain in the first 30 days following stroke. Papers tended to be concerned with specific types of post stroke pain and no paper looked at the total pain experience of individuals up to 30 days post stroke. This highlights a need for further research into post stroke pain and the need to establish the efficacy of individual interventions in preventing and treating post stroke pain.

Search strategy

Literature was searched systematically to answer the search question, 'What is the best practice in end of life care following an acute stroke?' where acute stroke was defined as 30 days following the stroke event. Databases searched were:

- All Evidence Based Medicine Reviews
- The Cochrane Library
- Medline
- CINAHL
- Embase
- AMED
- PsychBite
- PsychInfo
- IBSS
- Web of Science
- British Nursing Index

Search priorities

1. To identify any systematic reviews
2. To identify any literature searches done systematically
3. To identify observational literature
4. Identification of grey literature, ie

> "Grey literature is best defined as literature which cannot readily be acquired through normal bookselling channels and which is therefore difficult to identify and obtain. Other terms, such as 'non-conventional' or 'semi-published' are also used to describe it. Examples of grey literature include technical or research reports, doctoral dissertations, some conference papers and pre-prints, some official publications, discussion and policy papers."[25]

Keywords

Stroke, pain, nausea, distress, agitation, mood, headache, aphasia, multidisciplinary team, nurse, nursing care, patient, hospital, stroke unit, referral, information, assessment, impact, non-pharmacological relief of pain, pharmacological relief of pain, analgesia, pain prevention, positioning, instrument, tool.

Exclusions from searches

Literature relating to hospices or community/primary care was excluded by the steering group on the grounds that the target audience are nurses working in hospitals or care homes, and that hospices and primary care have guidelines and frameworks which are particular to their specialty.

Other exclusions included paediatric literature (this statement concerns care of adult patients) and any papers relating to subarachnoid haemorrhage. Although meeting the classic World Health Organisation definition of stroke[26] subarachnoid haemorrhage is usually excluded from stroke management guidelines since it has different risk factors, pathology and clinical management[27,28].

Search parameters

- written in English
- related to studies of humans
- contained abstracts and
- published between 2003-2010
- a proviso allowed consideration of 1997-2002 papers if necessary but this was not required.

Search results

3,527 papers were identified.

Methodology

Rapid evidence assessments

A rapid evidence assessment (REA) methodology was used. While similar in principle to systematic reviews, REAs have a narrower focus with a specific search question, inclusion/exclusion criteria, condensed timescales (2-6 months) and review processes allowing a quick, feasible evaluation of good quality information[29,30]. They have been used effectively in mental health[30] and social science reviews[31].

Identification of literature and handling of results

The search strategy was devised with support from a University of Glasgow librarian. Results of searches were reduced to 190 relevant references by using the search question when reading the abstracts, and further reduced to 83 following cull by second independent reviewer. Papers fell into five topic areas. The 83 papers were distributed to the working group and evaluated using relevant data evaluation tools.

Data evaluation

Standard SIGN methodological checklists were used to evaluate systematic reviews, randomised controlled trials, cohort studies and case-control studies[32].

In order to identify a relevant tool to evaluate qualitative research, we reviewed literature and consulted with peers. Following appraisal of each identified tool (eg Newcastle Ottawa Scale[33], Joanna Briggs Institute tools[34]), it was decided to adapt a checklist devised by the Critical Appraisal Skills Programme(CASP),[35] on the grounds that it was user friendly and has been widely used. The CASP employs statements as prompts for evaluation. These were turned into questions eg "Consider: if the findings are explicit, if there is adequate discussion of the evidence" became "Consider: are the findings explicit? Is there adequate discussion of the evidence both for and against the researcher's arguments?"

(Further information about this checklist may be obtained by contacting the University of Glasgow project team via www.glasgow.ac.uk/nursing).

Evidence summary sheets were adapted from SIGN[32].

The working group

The working group was made up of healthcare professionals with a range of experience and expertise in stroke or palliative care of pain, from seven NHS boards in Scotland. A patient representative was a member of this group.

Distribution of tools to working group

A questionnaire was sent to all working group members to gauge familiarity with systematic reviewing. Results showed that there was a range of experience in terms of systematic reviewing, eg participation in SIGN guidelines but that none had authored a systematic review.

Papers were allocated to five topic subgroups (2-4 members in each) of the working group. Consideration was given to topic groups, in terms of professional background and reviewing experience so there was a blend of knowledge and skill. Each paper was sent with appropriate reviewing tools and evidence summary sheets. Working group members used the checklists and evidence summaries to make statements about the evidence base or to reject papers.

Group members read papers individually and collaborated on evaluating evidence, making consensus statements of best practice where evidence was absent. Decisions and justifications to accept or reject papers and their findings, or to make statements of best practice had to be agreed with other subgroup members.

Virtual reading group

Similar to the working group, the virtual reading group comprised healthcare professionals, educationalists and academics with an interest in stroke or palliative care. Virtual readers read and commented on the statement in draft form. In addition there was widespread consultation on the document with distribution through the stroke managed clinical networks, NHS QIS networks, and the Scottish Stroke Nurses' Forum and other groups. All consultation comments were considered and responded to by the working group with changes made to the statement as necessary.

Format of statement

The statement is divided into seven sections covering:

Section 1: Early recognition and assessment of pain

Section 2: Pain assessment tools

Section 3: Pharmacological interventions

Section 4: Positioning

Section 5: Central post stroke pain (CPSP)

Section 6: Hemiplegic shoulder pain (HSP)

Section 7: Headache

Each section contains a table corresponding to the what, why and how of best practice, ie summarising the statement, the reason for the statement and how to achieve the statement or to demonstrate that it is being achieved and highlights the underpinning philosophy of the statement and/or explicit skill requirements to achieve best practice. Key challenges of the statement reflect existing examples of best practice and highlight areas that may require specific action or development.

How can the statement be used?

This best practice statement can be used in a variety of ways, although primarily it is intended to serve as a guide to best practice and promote a consistent and cohesive approach to care. The target audience for this statement is registered nurses working in acute stroke units and care homes.

The statement is intended to be challenging but realistic and can be used:

- as a basis for developing and improving care directly and indirectly
- to stimulate learning among multidisciplinary teams
- to promote effective multiprofessional team working and enhance partnerships with patients, carer(s) and relevant others, and
- to stimulate ideas and priorities for research.

Section 1: Early recognition and assessment of pain

Key points:

1. Early recognition and management of pain is essential for stroke rehabilitation. Staff consider the inclusion of pain assessment in proforma for admission and day-to-day documentation of care.
2. Early and appropriate treatment of pain can reduce the risk of chronic pain states.
3. Early recognition of the type of pain is key to appropriate management.
4. Early assessment of pain is followed by referral to appropriate specialist colleagues as required.

Statement	Reason for statement	How to demonstrate statement is being achieved
All patients following stroke have the presence of pain assessed, documented and reassessed on an ongoing basis.	There is a high prevalence of pain post stroke[5,36] . Patients may have pain independent of stroke[36] .	Audit of patient notes shows the presence, location and type of pain is recorded.
Early recognition of pain is essential to delivering timely patient-centred care.	Early intervention prevents further complications and enhances stroke recovery. Nurses have a responsibility to recognise pain symptoms and should understand the need for regular pain assessment[37].	The patient notes show that pain has been assessed. Drug administration documentation records that appropriate analgesia is being given.
Staff recognise that patients who have had a stroke may have communication difficulties and/or cognitive impairment which make assessment of pain a challenge.	Communication difficulties are common after stroke[5]. Due to the subjective nature of pain, self- reporting is the most accurate indicator of pain. However, where communication difficulties exist, alternative assessment methods are recommended[38]. Observable non-verbal pain behaviours may include grimacing, rocking, withdrawal or aggression[7]. Cognitive impairment occurs in 10% of stroke patients[5]. Patients with communication difficulties or cognitive impairment may not be able to vocalise their pain needs.	The patient notes show that assessment has been completed and action taken. A range of assessment tools are available for use in the clinical area. The patient notes show evidence of involvement of an occupational therapist/psychologist for those with cognitive impairment. The patient notes show evidence of involvement of a speech and language therapist for those with communication needs.

Statement	Reason for statement	How to demonstrate statement is being achieved
During pain assessment, staff identify the location and nature of pain and how it is experienced by the patient.	Early recognition of the type of pain is crucial for appropriate management[39]. Patients may suffer from pain related to pre-existing conditions[5].	Audit of patient notes shows the presence, location and type of pain is recorded. The patient notes show that appropriate medication and treatment strategies are initiated.

Key challenges:

- Availability of non-verbal pain assessment tools.
- Finding a suitable stroke pain assessment tool for use in clinical practice.
- Providing staff with training and education in the recognition of pain in all stroke patients.

Section 2: Pain assessment tools

Key points:

1. Whenever possible, the patient is the primary assessor of their own pain.
2. All stroke patients have their pain assessed, documented and reassessed.
3. A range of pain assessment tools is available to suit the needs of the patient.
4. Visual analogue scales and behavioural pain assessment tools are available in the clinical area.

Statement	Reason for statement	How to demonstrate statement is being achieved
Nurses use an appropriate pain assessment tool which takes into account the cognitive and communication abilities of every patient.	Pain assessment tools are most effective when tailored to individual need[38].	A range of tools is available and used within the clinical area. Patient notes show that assessment has been carried out and action taken where appropriate.
Nurses are able to select tools to meet the needs of patients with visual field deficits.	Vertical visual analogue scales have been shown to be more effective in stroke patients with visual field deficits[40].	Tools are available within the clinical area and their use is evidenced in the patient notes.
The use of an algorithm is considered when assessing post stroke pain. Algorithms may be general[7] or address more complex issues such as shoulder pain[5].	Pain may be related to stroke or to other conditions. It is important in either case that its assessment is accurate, appropriate treatment is offered and change is monitored.	Assessment, treatment and monitoring of pain is recorded in the patient notes.

Key challenges:

- Training and education in the use of pain assessment tools.
- Knowledge and availability of stroke-specific pain assessment tools.
- Some visual, cognitive and psychomotor impairments may have an impact on the successful use of visual analogue scales.
- The lack of validated tools for pain assessment in those with cognitive, visual and severe communication impairment post stroke.

Section 3: Pharmacological interventions

Key points:

1. Nurses take into account the prescribed and over the counter medicines the patient is already taking. They are aware of the potential cumulative and antagonistic effects and interactions which may occur when additional medicines are prescribed for post stroke pain.
2. Nursing staff are aware of the limitations of the effectiveness of medicines for post stroke pain[41].

Statement	Reason for statement	How to demonstrate statement is being achieved
Nurses are aware that there is little evidence for effective therapies for prevention of the onset of central post stroke pain (CPSP).	The tricyclic antidepressant, amitriptyline is ineffective for **prevention** of onset of CPSP but may be an **effective** treatment. In a trial of 39 patients with central post stroke pain after thalamic stroke, amitriptyline was no better than placebo at preventing onset of CPSP[42,43].	There are local protocols for the use of pain medicines in stroke patients and there is evidence that staff access clinical guidelines.
Nurses are aware that there are effective treatments for neuropathic pain.	Antidepressants, in particular amitriptyline and venlafaxine are effective for neuropathic pain. A Cochrane review of antidepressants for neuropathic pain concluded that a third of patients obtained relief of neuropathic pain with these particular antidepressants. There is limited evidence for selective serotonin reuptake inhibitors (SSRIs) and none for serotonin-norepinephrine reuptake inhibitors (SNRIs)[42].	There are local protocols for the use of pain medicines in stroke patients and there is evidence that staff access clinical guidelines.
Opportunities exist for nurses to link with pharmacy staff and access expert pharmacy advice.	Nurses have a professional obligation to access specialist advice when necessary[37].	Patient notes show that advice is sought where appropriate.
Nurses are aware that there are alternative medicines formulations and routes of administration other than oral available for patients who have difficulty swallowing.	Dysphagia is a frequent complication in the acute phase following stroke[44] and patients with dysphagia often experience difficulty in swallowing medicines[44]. "Administration of medicines by NG and PEG tubes has some inherent problems. Alternative formulations of medicines, routes of administration, or medication may be available... Hospital and community pharmacists or medicines information centres should be consulted…" [44, p18]	The patient notes demonstrate consideration of routes other than oral for administration of medicines where the patient has dysphagia. Patient notes show that advice is sought where appropriate.

Key challenges:

- The development of staff training to understand the risks and uses of medicine formulations in poststroke pain.
- Research to establish the efficacy of individual pharmacological treatments for poststroke pain.

Section 4: Positioning

Key points:

1. The rehabilitation potential following stroke is maximised.
2. Therapeutic positioning prevents complications and minimises pain.
3. Pictorial reminders[45] of good positioning may be helpful when related to individuals' specific positioning issues.
4. Staff are trained through organisational and/or online training, eg Stroke Training and Awareness Resources (STARS)[46], in specific positioning and handling of people with stroke.

Statement	Reason for statement	How to demonstrate statement is being achieved
Therapeutic positioning[5] is initiated for all stroke patients following stroke.	Therapeutic positioning is integral to the prevention of pain and reduction of complications[5]. Stroke morbidity is increased by inappropriate positioning during the early recovery phase[39].	The patient notes show that therapeutic positioning has been undertaken. The patient notes show that there is consideration of the patient's comfort.
As part of the pain assessment, nurses include a review of the positioning of the patient and consider how this affects the patient's pain.	Pain can be avoided and/or minimised by a regular change of the patient's position. The aims of ensuring good body alignment/therapeutic positioning include reduction of complications such as contractures and pressure sores[47],which may occur after stroke[19].	The patient notes demonstrate regular changes of position.
Staff implement careful positioning and handling of the patient at all times.	Careful positioning and handling is part of usual care and is recommended for prevention of post stroke shoulder pain[5]. Allodynia is common in individuals with central post stroke pain (CPSP)[48] and may be evoked by gentle touch or temperature change.	This is documented in the patient notes. Training records demonstrate staff attendance at moving and handling training provided by the organisation. There is a record of training in stroke core competencies[49].

Key challenges:

- Providing training and education in therapeutic positioning.
- Extending routine organisational training on moving and handling to accommodate the requirements of stroke patients.

Section 5: Central post stroke pain (CPSP)

Key points:

1. Nurses are aware of signs and symptoms of CPSP and its treatment, including allodynia. This is important for appropriate pain management.
2. Assessment of pain in stroke patients is ongoing.
3. If patients report pain, this is communicated to the multidisciplinary team and appropriate action taken by the relevant healthcare professional.
4. Nurses provide information about CPSP to patients and family/carers in a variety of formats.

Statement	Reason for statement	How to demonstrate statement is being achieved
Where CPSP is suspected, patients are assessed according to recommended grading systems.	Nurses are well placed to inform other members of the multidisciplinary team of the patient's condition. A grading scale exists[11,22] and should be made available for use by the multidisciplinary team.	Assessment is documented in the patient notes.
Nurses are aware that there are effective treatments available for CPSP.	Amitriptyline can be considered as first line therapy for treating CPSP[50]. Amitriptyline has been shown to achieve a reduction in CPSP in research studies[51].	Consideration of treatment is documented in the patient notes.
Patients not responding to initial treatments are considered for other therapies.	Research studies have shown small effects on CPSP within the first 30 days following stroke from other drugs such as gabapentin, pregabalin, lamotrigine or drug combinations which may be worth using where other drugs have not been effective[22,52-54].	Consideration of treatment is documented in the patient notes.
Non-pharmacological interventions such as coping strategies and behavioural therapy may benefit patients.	Some patients find these approaches beneficial[55].	Consideration of these interventions is documented in the patient notes.

Key challenges:

- Cognitive or communication difficulties may make assessment difficult.
- Training of nurses to screen for, assess and record post stroke pain.
- Availability of staff with the appropriate training to deliver non-pharmacological interventions.

Section 6: Hemiplegic shoulder pain (HSP)

Key points:

1. Where there is evidence of a patient having HSP, there is referral to specialist colleagues.
2. Patients with more severe hemiplegia are identified as having greater risk of developing HSP.
3. A positioning and handling strategy is paramount in the prevention and treatment of HSP in stroke patients with upper limb weakness.

Statement	Reason for statement	How to demonstrate statement is being achieved
Staff are aware that stroke patients experience shoulder pain which may develop as a direct result of trauma to soft tissue structures around the shoulder joint.	HSP is common and distressing for stroke patients. The shoulder joint is intrinsically unstable and as a result trauma to joint structures is common in the context of care and rehabilitation[13,56].	There is a record of training in stroke core competencies[49].
Patients reporting shoulder pain have an early assessment to determine the source and nature of the pain.	The extent of shoulder trauma increases over time following a stroke. Early referral to physiotherapy will allow the relevant diagnostic tests to be undertaken[21].	This is documented in the patient notes.
Staff are aware that partial dislocation of the shoulder joint (subluxation) is associated with more HSP and the presence of either or both is recorded.	Subluxation of the shoulder joint contributes to shoulder pain, trauma and damage to soft tissue structures[57,58]. Reducing subluxation may reduce the risk of HSP developing[59].	There is a record of training in stroke core competencies[49]. Presence of subluxation or HSP is documented in the patient notes.
Staff are aware that trauma to the shoulder can occur during, and possibly as a consequence of handling.	Normal alignment of the shoulder joint and scapula requires intact muscular control which may be compromised as a result of weakness and loss of sensation following the stroke. Continual awareness of this and ongoing physical management of shoulder alignment during day-to-day care handling procedures and rehabilitation may help to prevent the onset of damage[10,56].	There is a record of training in stroke core competencies[49]. Training records demonstrate staff attendance at moving and handling training provided by the organisation.
Staff are aware of the increased risk of HSP in patients with left hemiplegia.	HSP is associated more with left hemiplegia than right, and this may be as a result of left visuo-spatial neglect. The trauma may be as a result of a lack of awareness, and therefore self-care, of the affected side[56].	There is a record of training in stroke core competencies[49].

Statement	Reason for statement	How to demonstrate statement is being achieved
Staff ensure that they seek appropriate guidance and support in following local protocols in therapeutic handling.	This includes access to local expertise, and more formal learning programmes. Pictorial reminders[60] of good positioning may be helpful.	Clear local protocols are available for staff to access. There is a record of training in stroke core competencies[49].
Nurses ensure analgesia is offered to the patient.	Musculoskeletal pain will respond to appropriate and adequate analgesia.	Drug administration records demonstrate this.
On discharge, the patient, and/or family/carer, is given guidance on medication, moving and handling and shoulder care.	This is good practice.	There is a record that information has been given.

Key challenges:

- Education of staff and promoting insight into the patient experience of stroke, eg through use of Stroke Training and Awareness Resources (STARS) Advancing Modules[61].
- Preserving normal anatomical alignment of the patient's shoulder complex at all times.
- Extending routine organisational training on moving and handling to accommodate the requirements of stroke patients.

Section 7: Headache

Key points:

1. Nurses specifically enquire about headache in stroke patients.
2. Headache associated with dipyridamole use is managed by adherence to good prescribing guidelines.

Statement	Reason for statement	How to demonstrate statement is being achieved
Assessment of patients who have had a transient ischaemic attack (TIA) or stroke includes enquiry about headache.	Headache is often overlooked by the clinician as a result of concentrating on clinical signs and management[62].	Enquiry about headache, and its outcome is documented in the patient notes.
Particular attention is paid to patients with a history of migraine as they are at greater risk of headache after stroke. Patients with lacunar strokes are less at risk of headache.	Headache after stroke is more common in patients with a history of migraine[63,64] and is rare in lacunar stroke[65].	History of migraine is documented in the patient notes.
Patients being started on dipyridamole MR (modified release) are informed that headache is a common side effect, and that it can be controlled by dose titration and paracetamol.	It is good practice to inform the patient of common side effects of medicines.	It is documented in the patient notes that this information has been given.
Dipyridamole MR used as secondary prevention after stroke is introduced by dose titration. Paracetamol is used as additional treatment for initial doses, to reduce the incidence of headache.	Dipyridamole in modified release form is effective in secondary stroke prevention, therefore it is used in acute stroke, but it causes headache in a large proportion of patients[66]. Titration of the dose with additional analgesia (eg paracetamol) with initial doses reduces the severity and incidence of headache caused by dipyridamole MR[67].	Use of this regime is documented in the patient notes.

Key challenges:

- Assessing the patient with cognitive or communication difficulties.
- Ensuring other causes of headache (eg acute intracerebral bleeding or arterial dissection) are excluded.
- Ensuring clear communication about titrated dose of dipyridamole MR, especially when the patient is transferred between wards or discharged.

Appendix 1: A sample reflective tool for individual practitioners

This tool is not for audit but is for individual practitioners to reflect on their practice in light of the best practice statement. It is to encourage self-assessment of knowledge and skills in caring for patients following acute stroke and who may be suffering from pain. It may be useful in self-assessment before and after a training event.

This tool has been developed from the best practice statement; it should be used in conjunction with the statement and not in isolation.

As a nurse caring for patients following acute stroke:						
I assess every stroke patient for pain including headache:						
on admission					Yes	No
on an ongoing basis					Yes	No
I do this by:						
asking the patient about pain					Yes	No
involving family/carers					Yes	No
using pain assessment tools Y/N (specify which ones)					Yes	No
observing for non-verbal pain behaviours Y/N (give examples)					Yes	No
I am confident in:						
a	assessing patients who communicate to me that they are in pain	not confident 1	2	3	4	fully confident 5
b	interpreting non-verbal signs of pain in patients with communication difficulties after stroke	not confident 1	2	3	4	fully confident 5
I am confident in undertaking my role in:						
a	positioning stroke patients and how to modify this for those who may experience pain	not confident 1	2	3	4	fully confident 5
b	moving and handling stroke patients and how to modify this for those who may experience pain	not confident 1	2	3	4	fully confident 5

As a nurse caring for patients following acute stroke:

I know where I can seek further help:			
a	with specialist advice for moving and handling stroke patients who may experience pain	Yes	No
b	in communicating with patients with poststroke aphasia	Yes	No
c	with administering medicines including analgaesia to patients who cannot swallow following an acute stroke	Yes	No
d	with specialist advice if a patient suffers from hemiplegic shoulder pain	Yes	No
I am aware of the signs and symptoms of shoulder subluxation		Yes	No
I recognise shoulder subluxation in patients following acute stroke		Yes	No
I am aware of the signs and symptoms of allodynia		Yes	No
I consider the possibility that allodynia may be present in patients following acute stroke		Yes	No
I monitor the effectiveness of pain-relieving interventions including the administration of analgesia, in the following ways:			
I communicate about pain management, eg moving, positioning, monitoring the effects of analgesia and other drugs with:			
a	the patient	Yes	No
b	family/carers	Yes	No
c	others in the multidisciplinary team	Yes	No
	I do this by: (specify method, eg discussion, written information, team meeting, notes, communication folder, phone)		

As a nurse caring for patients following acute stroke:

I am confident in communicating about pain management with:						
a	the patient	not confident 1	2	3	4	fully confident 5
b	family/carers	not confident 1	2	3	4	fully confident 5
c	the multidisciplinary team	not confident 1	2	3	4	fully confident 5

Having reflected on my practice, I will undertake the following actions to address the gaps this reflection has identified:	

Appendix 2: An improvement framework using case notes

The following framework is for those practitioners who would like to identify in the local area aspects of care for improvement in management of pain following acute stroke. This could also support healthcare professionals and organisations who would like to improve current practice[i]. This should be used in conjunction with the best practice statement and not in isolation.

In identifying areas for improvement, the stroke team should first identify a possible 'gap' in the service they are providing and agree an area for improvement. A small number of case notes extracted at random from the unit can then be surveyed for evidence that this particular aspect of care is being undertaken and recorded in the notes. 100% success with this would suggest that this area is working well and that a different area of care could be identified for improvement. As with all change for improvement, it is important that all the team members take part in discussions and are in agreement about what the area for improvement is, what will be done, who will do it, and by when.

For example, it could be that the team agrees that an appropriate area for improvement is headache assessment. An agreed index or measure, for example assessment of patients for headache, is selected. Five case notes are surveyed to indicate if this happened for each patient (or if the reason for the variance from this was documented). If the notes indicate that information is not being sought and recorded systematically, this could form the focus of an improvement activity. A typical aim would be that a small sample of case notes identifies 100% compliance with the assessment of patients for headache within, for example, one month's time.

1	Use one of the following statements to identify an area for improvement:	Yes	No
a	There is evidence that all patients following stroke have the presence of pain assessed.		
b	There is evidence that assessment of pain is followed by appropriate action.		
c	There is evidence of communication about pain management with the patient.		
d	There is evidence of communication about pain management within the multidisciplinary team.		

[i]A further source of support may be locally-defined fields on the Scottish Stroke Care Audit Computer System[68] which should become available from summer 2011. Practitioners may consider use of one or more of these fields to conduct a local audit. These fields will be left blank for this purpose and may be used for short term audit of local practice, for example, particular aspects of pain assessment or management including whether all patients are screened for headache, or the use of pain assessment tools. These data will not be analysed centrally by the Scottish Stroke Care Audit but can be extracted and used locally.

2	This clinical area has the following characteristics:	Yes	No
a	There are training opportunities in pain management for different professional groups including nurses. If Yes: What is the frequency? Are they tailored to stroke staff? Are there gaps in this provision? Action:		
b	Pain assessment tools are available which are suitable for use in patients with stroke.		
c	Information on pain after stroke is available for patients and families/carers – specify how this is delivered:		

A negative answer to any of these questions would indicate that action is necessary.

Glossary

algorithm	A set of agreed routes by which a process can be carried out following a logical flow.
allodynia	Pain due to a stimulus which does not normally provoke pain. For example, stroking the skin lightly with clothes or cotton wool will produce pain.
antagonistic effect (drug)	Where a drug binds to a receptor cell and inhibits the normal physiological reaction of a receptor cell.
aphasia	A condition which affects the speech, language and communication skills of people after they have experienced brain damage. One of the most common sources of such damage in adults is stroke and about a quarter of people who have strokes also have aphasia.
arterial dissection	A tear in the innermost wall of the artery causing blood to pool in the lining of the artery, which can partially or completely block blood flow, or cause rupture followed by bleeding into surrounding tissues.
behavioural pain assessment tool	A method for detecting the presence of pain in patients with cognitive or communication difficulties.
central post stroke pain (CPSP)	The development of continuing and often severe neuropathic pain, often in the distribution of the original stroke. This often gives a combination of sensory loss and allodynia as well as spontaneous pains.
cognitive impairment	A reduced ability to know, think, learn or make decisions.
cumulative effect (drug)	The state at which repeated administration of a drug may produce effects that are stronger than those produced by the first dose.
dose titration	To slowly increase the dose of a drug to a level that can be maintained.
dysphagia	Difficulty in swallowing.
formulation (medicine)	The form of a drug. Common formulations include tablets, soft-gel capsules, oral liquids, injected liquids, creams and dermal patches.
hemiplegic shoulder pain (HSP)	Often affects post stroke patients with reduced arm function, and may contribute to poor upper limb recovery, depression, and sleeplessness.
incidence	The number of new cases of a disease within a defined group of people over a period of time.

interaction (drug)	A modification of the effect of a drug when administered with another drug. The effect may be an increase or a decrease in the action of either substance, or it may be an adverse effect that is not normally associated with either drug.
lacunar stroke	Small strokes in the deeper part of the brain.
multidisciplinary team	A group of people from different fields such as medicine, nursing, and social work who work together to provide care for patients with a particular condition. Team members may come from different organisations.
musculoskeletal pain	Pain affecting bones, muscles, ligaments, tendons and bursae. It can be caused by trauma, disease, or over use.
nasogastric (NG) tube	A narrow tube that is passed into the nose and down the oesophagus (food pipe) into the stomach. This allows feed to be delivered directly into the stomach.
National Advisory Committee on Stroke (NACS)	Established in October 2002, to oversee the recommendations in the stroke element of the Coronary Heart disease and Stroke Strategy. Website address: www.sehd.scot.nhs.uk/stroke/NAC.htm
neuropathic pain	Pain arising as a direct consequence of a lesion or disease affecting the somatosensory system. Treede et al (2009) on behalf of Special Interest Group for Neuropathic Pain, International Association for the Study of Pain (IASP).
non-verbal pain behaviour	Physical expression of pain, in the face for example.
pain assessment tool	A way of measuring a patient's pain often taking the form of a chart, list or questionnaire.
patient-centred care	Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
percutaneous endoscopic gastrostomy (PEG) tube	Where a small feeding tube goes directly through the skin and into the stomach. The tube is inserted using an endoscope to guide the tube through a small abdominal incision.
placebo	Dummy treatment which is given to some of the volunteers participating in a clinical trial. Patients can feel better even when the treatment they are given is a 'sugar pill' or placebo.

prevalence	The number of existing cases of a disease among a certain group of people, usually at a specified point in time.
psychomotor	Relating to the production of voluntary movements.
Scottish Stroke Nurse Forum (SSNF)	A group whose aims include sharing and developing knowledge, expertise and best practice in stroke nursing services. Website address: www.chss.org.uk/links/ssnf/ssnf.shtml
secondary prevention	Deals with areas such as lifestyle changes or drugs in order to reduce the likelihood of a disease's recurrence or to slow or reverse its progress.
selective serotonin reuptake inhibitor (SSRI)	A type of antidepressant medication.
self-report	Where patients report their experiences and behaviour.
serotonin-norepinephrine reuptake inhibitor (SNRI)	A class of compounds mainly used as antidepressants.
Stroke Training and Awareness Resources (STARS)	A learning tool for health and social care staff to enable them to become more knowledgeable and skilful in the care they provide. Website address: www.strokecorecompetencies.org
subluxation	Partial dislocation.
therapeutic positioning (of patients)	Aims to prevent complications such as contractures, pain, abnormal tone, respiratory problems and pressure sores or to assist functional recovery.
transient ischaemic attack (TIA)	The result of temporary disruption of the circulation to part of the brain due to a blood clot or spasm of the vessel walls. Similar symptoms to a stroke, but the patient recovers within 24 hours.
tricyclic antidepressant	Among the first modern psychiatric drugs, and named for their three-ring chemical structure.
vertical visual analogue scale	Direct rating where raters are asked to place a mark at a point between two anchor states appearing at either end of a vertical line. It is used as a method of valuing health states.
visual analogue scale	Direct rating where raters are asked to place a mark at a point on a scale, that is, between two anchor states which appear at either end of the line. It is used as a method of valuing health states.

visual field defect	Constant deficits in vision. Visuo-spatial neglect may also be present.
visuo-spatial neglect	Those affected typically fail to report or orient appropriately for visual stimuli presented on the opposite side to the damaged area of the brain.

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