

CONCISE GUIDANCE TO GOOD PRACTICE

A series of evidence-based guidelines for clinical management

NUMBER 6

The prevention, diagnosis and management of delirium in older people

NATIONAL GUIDELINES

June 2006

CLINICAL
EFFECTIVENESS &
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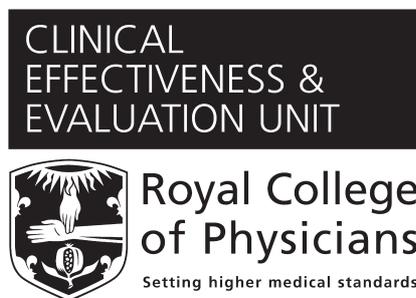
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Acknowledgements

The Guideline Development Group would like to thank and acknowledge the support received from Najma Siddiqi in assisting in appraising the literature, and the expert panel that reviewed the draft update.

They would like to thank the Information Centre of the Royal College of Physicians, London, for their advice, support and time in the preparation of the guidelines.

They would also like to thank Annette Guerda-Fischer and Jo Gough for their administrative help in organising the Guideline Development Group's activities.

The Clinical Effectiveness and Evaluation Unit

The Clinical Effectiveness and Evaluation Unit (CEEU) of the Royal College of Physicians has expertise in the development of evidence-based guidelines and the organisation and reporting of multicentre comparative performance data. The work programme is collaborative and multiprofessional, involving the relevant specialist societies and patient groups, the National Institute for Health and Clinical Excellence (NICE) and the Healthcare Commission. The CEEU is self-financing with funding from national health service bodies, the Royal College of Physicians, charities and other organisations.

Concise Guidance to Good Practice series

This series covers issues that are not covered by the major guideline producers but which are likely to be encountered across several medical specialties and primary care. The guidelines are designed to allow clinicians to make rapid, informed decisions based on up-to-date, systematically reviewed and accessible evidence. Where such evidence does not exist, consensus will be used to complete the clinical pathway.

Series Editor: Lynne Turner-Stokes FRCP

Citation: British Geriatrics Society and Royal College of Physicians. *Guidelines for the prevention, diagnosis and management of delirium in older people*. Concise guidance to good practice series, No 6. London: RCP, 2006.

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Registered Charity No 210508

ISBN 1 86016 279 7

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Royal College of Physicians of London

Designed and typeset by the Publications Unit
of the Royal College of Physicians

Printed in Great Britain by Sarum ColourView Group,
Salisbury, Wiltshire

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Delirium (acute confusional state) is a common condition in older people, affecting up to 30% of all older patients admitted to hospital. The hospital environment often precipitates or exacerbates episodes of delirium. Patients who develop delirium have high mortality, institutionalisation and complication rates, and have longer lengths of stay than non-delirious patients. Delirium is often not recognised by clinicians, and is often poorly managed.

Recent evidence, however, demonstrates that improved understanding of delirium among health professionals and improved attention to the environment surrounding at-risk patients can both prevent the onset of delirium and curtail episodes that do arise.

The purpose of these guidelines is to provide healthcare professionals with a practical approach to the identification, prevention and management of delirium in the hospital setting and in community care settings.

Objective

The objective of the Guideline Development Group was to update the *Guidelines for the diagnosis and management of delirium in the elderly* (1997) compiled by Dr Lesley Young and Dr Jim George based on the work of the multidisciplinary working party on Confusion in Crises, Royal College of Physicians, 1995.

Methodology

The update was overseen by a multi-professional Guideline Development Group (GDG) including representatives from nursing, care of the elderly, and old age psychiatry (see above).

Ms Karen Reid, Information Centre, Royal College of Physicians (RCP), supported by Dr Jim George and Dr John Holmes, carried out a literature search using the following databases:

Medline, Embase, Cochrane Library, PsychINFO, BNI, HMIC, CINAHL.

Dr Jim George and Dr John Holmes appraised the literature. All abstracts were reviewed. Abstracts were excluded if they related to letters, case reports, editorials, palliative care or to the paediatric literature.

The Information Centre at the RCP holds a database of the literature identified and the papers appraised.

The guidelines were prepared in accordance with the principles laid down by the AGREE Collaboration (Appraisal of Guidelines for Research and Evaluation). A summary of the guideline development process is given in Appendix 1.

Grading of evidence during literature appraisal and grading of recommendations in the guidelines followed the principles used by the Scottish Intercollegiate Guideline Network (SIGN) as indicated in Appendix 2.

The GDG reviewed the evidence and recommendations. The draft update was circulated to a multi-professional expert panel for peer review. The GDG considered the comments of the expert panel and produced a final version.

The Clinical Practice and Evaluation Committee and the Policy Committee of the British Geriatrics Society have endorsed the update.

Summary of guidelines

	<i>Grade of recommendation*</i>
Aids to diagnosis	
• Cognitive testing should be carried out on all elderly patients admitted to hospital. ^{34,36}	C
• Serial measurements in patients at risk help to detect the new development of delirium or its resolution. ^{33,34}	B
• A history from a relative or carer about the onset and course of the confusion is essential to help distinguish between delirium and dementia. ^{36,53}	C
• The diagnosis of delirium can be made by non-psychiatrically trained clinicians quickly and accurately using the Confusion Assessment Method (CAM) screening instrument. ^{29,31}	B
Prevention	
• Patients at high risk should be identified at admission and prevention strategies incorporated into their care plan. ^{3,4}	A
History	
• Many patients with delirium are unable to provide an accurate history. Wherever possible, corroboration should be sought from the carer, general practitioner or any source with good knowledge of them. ³⁶	C
Management	
• The most important action for the management of delirium is the identification and treatment of the underlying cause. ^{38,56}	C
• The patient should be nursed in a good sensory environment and with a reality orientation approach, and with involvement of the multidisciplinary team. ⁵⁵	C
• Keep the use of sedatives and major tranquillisers to a minimum. ⁵⁶	C
• Use one drug only – haloperidol is currently recommended – starting at the lowest possible dose and increasing in increments if necessary after an interval of 2 hours. ^{70,71}	D
• Review all medication at least every 24 hours. ⁷¹	D
• One-to-one care of the patient is often required and should be provided while the dose of psychotropic medication is titrated upward in a controlled and safe manner. ⁷¹	D
Staff training, education audit	
• Senior doctors and nurses should ensure that doctors in training and nurses are able to recognise and treat delirium. ^{56,73}	C
• Regular audit should be undertaken to assess the processes and outcomes of care of patients with delirium, eg use of cognitive scores, ward moves, length of stay, complications and mortality.	(GPP)
• The results of audit should be used as feedback on the performance of doctors and nurses in order to target educational programmes.	(GPP)

GPP = Good Practice Point.

*See Appendix 2, page 17.

Introduction

Delirium (acute confusional state) is a common condition in older people affecting up to 30% of all older medical patients. Patients who develop delirium have high mortality, institutionalisation and complication rates, and have longer lengths of stay than non-delirious patients.¹ Delirium is often not recognised by clinicians,² and is often poorly managed. Delirium may be prevented in up to a third of older patients.^{3,4} The aim of these guidelines is to aid recognition of delirium and to provide guidance on how to manage this complex and challenging condition.

Definitions and diagnosis

Delirium is characterised by a disturbance of consciousness and a change in cognition that develop over a short period of time. The disorder has a tendency to fluctuate during the course of the day, and there is evidence from the history, examination or investigations that the delirium is a direct consequence of a general medical condition, drug withdrawal or intoxication.

(Diagnostic and Statistical Manual of Mental Disorders (DSM-IV))

In order to be diagnosed with delirium, a patient must show all of the four features listed below.

- 1 A disturbance of consciousness (ie reduced clarity of awareness of the environment) is evident, with reduced ability to focus, sustain or shift attention.
- 2 There is a change in cognition (such as memory deficit, disorientation, language disturbance) or the development of a perceptual disturbance that is not better accounted for by a pre-existing or evolving dementia.
- 3 The disturbance develops over a short period of time (usually hours to days) and tends to fluctuate during the course of the day.
- 4 There is evidence from the history, physical examination, or laboratory findings that the disturbance is caused by the direct physiological consequences of a general medical condition, substance intoxication or substance withdrawal.⁵

Delirium may have more than one causal factor (ie multiple aetiologies). A diagnosis of delirium can also be made when there is insufficient evidence to support criterion 4, if the clinical presentation is consistent with delirium, and the clinical features cannot be attributed to any other diagnosis, for example delirium due to sensory deprivation.

Frequency and impact

Some older people come to hospital with delirium (prevalent) while others develop delirium during their hospital stay (incident). Hospital prevalence rates for delirium vary widely because of different patient characteristics in the different studies – the highest rates are seen in older patients in critical care settings. The average prevalence of delirium in older people in general hospitals is 20% (range 7% to 61%).⁶ After fracture of the neck of the femur, the prevalence varies from 10% to 50%.⁷

Patients with delirium have increased length of stay, increased mortality and increased risk of institutional placement.^{8–10} Hospital mortality rates of patients with delirium range from 6% to 18% and are twice that of matched controls.^{10,11} Patients with delirium are also three times more likely to develop dementia. Delirium appears to be an important marker of risk for dementia or death, even in older people without prior cognitive or functional impairment.¹¹

A. Prevention

Patients at high risk should be identified on admission and prevention strategies incorporated into their care plan.

A

Up to a third of delirium is preventable.^{3,4} Early attention to possible precipitants of delirium and adopting the approaches detailed under 'Management of confusion' below in those patients at increased risk of delirium may prevent the development of delirium and improve the outcome in those who go on to develop it.^{4,12–14} Delirium is more common in those with a pre-existing organic brain syndrome⁷ or dementia,^{15–22} and may co-exist with disorders such as depression, which are also common in older people.^{15,23,24} Patients with dementia are five times more likely to develop delirium.⁶ Risk factors for the development of delirium^{7,21,23} are shown in **Box 1**. Precipitating factors^{20,25} are shown in **Box 2**.

Box 1. Risk factors for developing delirium.

Old age²⁶
Severe illness²⁰
Dementia²⁰
Physical frailty²⁷
Admission with infection or dehydration^{20,26}
Visual impairment²⁰
Polypharmacy^{23,26,28}
Surgery, eg fracture neck of femur
Alcohol excess²¹
Renal impairment

Box 2. Precipitating factors for delirium.

Immobility
Use of physical restraint
Use of bladder catheter
Iatrogenic events
Malnutrition
Psychoactive medications
Intercurrent illness
Dehydration

B. Assessment

Aids to diagnosis

- **Cognitive testing should be carried out on all older people admitted to hospital.** **C**
- **Serial measurements in patients at risk help to detect the new development of delirium or its resolution.** **B**
- **A history from a relative or carer of the onset and course of the confusion is essential to help distinguish between delirium and dementia.** **C**
- **The diagnosis of delirium can be made by non-psychiatrically trained clinicians quickly and accurately using the Confusion Assessment Method (CAM) screening instrument.^{29–31} (See Appendix 3.)** **B**

An initial assessment of the cognitive function of all patients should be made and recorded. When confusion is suspected the use of cognitive screening tools (such as the Abbreviated Mental Test (AMT) score³² and Mini-Mental State Examination (MMSE)³³) may increase recognition of delirium present on admission (see Appendix 3). However, by themselves these tools cannot distinguish between delirium and other causes of cognitive impairment.

Delirium is frequently a complication of dementia. Care is needed therefore to distinguish between the two. The most helpful factor is an account of the patient's pre-admission state from a relative or carer. Use of the Confusion Assessment Method²⁹ or serial measurements of cognition can help to differentiate delirium from dementia or detect its onset during a hospital admission.³⁴

*See Appendix 2, page 17.

Continued

Delirium can be subdivided into hypoactive, hyperactive and mixed subtypes.³⁵ It is important to recognise that hypoactive (quiet) delirium is the commonest type. Health staff should always be alert to the possibility of confusion when communicating with patients.

- Hyperactive delirium is characterised by increased motor activity with agitation, hallucinations and inappropriate behaviour.
- Hypoactive delirium in contrast is characterised by reduced motor activity and lethargy and has a poorer prognosis.

Delirium may be unrecognised by doctors and nurses in up to two-thirds of cases.³⁶

Differential diagnosis

The differential diagnosis of delirium includes:

- dementia
- depression
- hysteria
- mania
- schizophrenia
- dysphasia
- non-convulsive epilepsy/temporal lobe epilepsy.

Clinical assessment

The underlying cause of delirium is often multifactorial. Common contributory medical causes of delirium include:^{37–41}

- infection (eg pneumonia, urinary tract infection)
- cardiological illness (eg myocardial infarction, heart failure)
- respiratory disorder (eg pulmonary embolus, hypoxia)
- electrolyte imbalance (eg dehydration, renal failure, hyponatraemia)
- endocrine and metabolic disorder (eg cachexia, thiamine deficiency, thyroid dysfunction)
- drugs⁴¹ (particularly those with anticholinergic side effects, eg tricyclic antidepressants, anti-parkinsonian drugs, opiates, analgesics, steroids)
- drug (especially benzodiazepine) and alcohol withdrawal
- urinary retention
- faecal impaction
- severe pain
- neurological problem (eg stroke, subdural haematoma, epilepsy, encephalitis)
- multiple contributing causes.

History

Many patients with delirium are unable to provide an accurate history. Wherever possible corroboration should be sought from the carer, general practitioner or any source with good knowledge of them.

C

In addition to standard questions in the history, the following information should be specifically sought:

D

- onset and course of confusion

THE GUIDELINES

Grade of recommendation

- previous intellectual function (eg ability to manage household affairs, pay bills, compliance with medication, use of telephone and transport)
- full drug history including non-prescribed drugs and recent drug cessation (especially benzodiazepines)
- alcohol history
- functional status (eg activities of daily living)
- history of diet and food intake
- history of bladder and bowel voiding
- previous episodes of acute or chronic confusion
- symptoms suggestive of underlying cause (eg infection)
- sensory deficits
- aids used (eg hearing aid, glasses etc)
- pre-admission social circumstances and care package
- comorbid illness.

Communication between staff from different disciplines is essential to avoid unnecessary repetition of information gathering.

Examination

A full physical examination should be carried out, including in particular the following areas:

D

- conscious level
- nutritional status
- evidence of pyrexia
- search for infection: lungs, urine, abdomen, skin
- evidence of alcohol abuse or withdrawal (eg tremor)
- cognitive function using a standardised screening tool, eg AMT or MMSE, including tests for attention (eg serial 7's, WORLD backwards, 20-1 Test)
- neurological examination (including assessment of speech)
- rectal examination – if impaction is suspected.

Investigations

The following investigations are almost always indicated in patients with delirium in order to identify the underlying cause:

D

- full blood count including C reactive protein
- urea and electrolytes, calcium
- liver function tests
- glucose
- chest X-ray
- electrocardiography
- blood cultures
- pulse oximetry
- urinalysis.

Continued

Other investigations may be indicated according to the findings from the history and examination.

These include:

- computed tomography (CT) of the head (see below)
- electroencephalogram (EEG) (see below)
- thyroid function tests
- B12 and folate
- arterial blood gases
- specific cultures, eg urine, sputum
- lumbar puncture (see below).

CT scan

Although many patients with delirium have an underlying dementia or structural brain lesion (eg previous stroke), CT has been shown to be unhelpful if used on a routine basis to identify a cause for delirium,¹⁵ and should be reserved for those patients in whom an intracranial lesion is suspected.

Indications for the use of CT scanning are:

C

- focal neurological signs
- confusion developing after head injury
- confusion developing after a fall
- evidence of raised intracranial pressure.

Electroencephalogram (EEG)

Although the EEG is frequently abnormal in those with delirium,^{42–44} showing diffuse slowing, routine use as a diagnostic tool has not been fully evaluated.

EEG may be useful where there is difficulty in the following situations:

C

- differentiating delirium from dementia
- differentiating delirium from non-convulsive status epilepticus and temporal lobe epilepsy
- identifying those patients in whom the delirium is due to a focal intracranial lesion, rather than a global abnormality.

Lumbar puncture

Although various abnormalities have been seen in the cerebrospinal fluid of patients with delirium,⁴⁵ routine lumbar puncture is not helpful⁴⁶ in identifying an underlying cause for the delirium.

C

It should therefore be reserved for those in whom there is reason to suspect a cause such as meningitis. This might include patients with the following features:

- meningism
- headache and fever.

C. Management

Treatment of underlying cause

The most important action for the management of delirium is the identification and treatment of the underlying cause.

C

- Incriminated drugs should be withdrawn wherever possible. In the cases of opiates causing delirium, it may be possible to reduce the dose or change to an alternative.⁴⁷
- Biochemical derangements should be corrected promptly.³⁸
- Infection is one of the most frequent precipitants of delirium. If there is a high likelihood of infection (eg abnormal urinalysis, abnormal chest examination etc), appropriate cultures should be taken and antibiotics commenced promptly, selecting a drug to which the likely infective organism will be sensitive.
- Parenteral thiamine should be administered when alcohol abuse or undernutrition is apparent.

Management of confusion

In addition to treating the underlying cause, management should also be directed at the relief of the symptoms of delirium.

Environment

The patient should be nursed in a good sensory environment and with a reality orientation approach, and with involvement of the multidisciplinary team.^{3,4,12–14,39,48–58}

B

Ensure:

- appropriate lighting levels for time of day
- regular and repeated (at least three times daily) cues to improve personal orientation
- use of clocks and calendars to improve orientation
- hearing aids and spectacles available as appropriate and in good working order
- continuity of care from nursing staff
- encouragement of mobility and engagement in activities and with other people
- patient is approached and handled gently
- elimination of unexpected and irritating noise (eg pump alarms)
- regular analgesia, for example regular paracetamol
- encouragement of visits from family and friends who may be able to help calm the patient
- explanation the cause of the confusion to relatives. Encourage family to bring in familiar objects and pictures from home and participate in rehabilitation
- fluid intake to prevent dehydration (use subcutaneous fluids if necessary)⁵⁹
- good diet, fluid intake and mobility to prevent constipation
- adequate central nervous system oxygen delivery (use supplemental oxygen to keep saturation above 95%)
- good sleep pattern (use milky drinks at bedtime, exercise during the day).

Avoid:

- inter- and intra-ward transfers⁶⁰
- use of physical restraint^{61–64}
- constipation
- anticholinergic drugs where possible, and keep drug treatment to a minimum
- catheters where possible.

Continued

Depending on the layout and nature of the ward, these measures may be facilitated by nursing the patient in a single room. For example, in a busy Nightingale ward, a patient with delirium may be better managed in a side room, whereas in a ward with small bays the presence of other patients may have a reassuring influence. Management of delirium is a measure of overall quality of care.⁶⁵

Wandering

Patients who wander require close observation within a safe and reasonably closed environment. The least restrictive option should always be used when acting in the best interests of the patient to keep them safe from assessed risk.⁶⁶ In the first instance, attempts should be made to identify and remedy possible causes of agitation, eg pain, thirst, need for toilet. If the cause of the agitation cannot be remedied, the next least restrictive option is to try distracting the agitated wandering patient. Relatives could be encouraged to assist in this kind of management as they will have information about the person which will help when offering meaningful distractions. The use of restraints or sedation should only be used as a final option, once others have been tried, and only if they can be justified as being in the best interests of the patient.

This stepwise approach should be adopted consistently by the whole team including relatives and other informal carers.

Rambling speech

Patients with delirium often exhibit confused and rambling speech. It is usually preferable not to agree with rambling talk, but to adopt one of the following strategies, depending on the circumstance:⁶⁷ C

- tactfully disagree (if the topic is not sensitive)
- change the subject
- acknowledge the feelings expressed – ignore the content.

Sedation

Keep the use of sedatives and major tranquillisers to a minimum. C

All sedatives may cause delirium, especially those with anticholinergic side effects.⁶⁸ Many older people with delirium have hypoactive delirium (quiet delirium) and do not require sedation.³⁵ Early identification of delirium and prompt treatment of the underlying cause may reduce the severity and duration of delirium.⁵³ The main aim of drug treatment is to treat distressing or dangerous behavioural disturbance (eg agitation and hallucinations).

Drug sedation may be necessary in the following circumstances: D

- in order to carry out essential investigations or treatment
- to prevent patient endangering themselves or others
- to relieve distress in a highly agitated or hallucinating patient.

Use one drug only – haloperidol is currently recommended starting at the lowest possible dose and increasing in increments if necessary after an interval of two hours. D

Review all medication at least every 24 hours. D

The preferred drug is haloperidol^{69–71} 0.5 mg orally which can be given up to two hourly. A maximum dosage of 5 mg (orally or IM) in 24 hours is a general guide but may need to be exceeded depending on the severity of distress, severity of the psychotic symptoms, weight and sex. Haloperidol can be given IM, 1–2 mg. An alternative in patients with dementia with Lewy bodies and those with Parkinson's disease is lorazepam

0.5–1 mg orally which can be given up to two hourly (maximum 3 mg in 24 hours). If necessary, lorazepam can be given 0.5–1.0 mg IV or IM (dilute up to 2 ml with normal saline or water) up to a maximum of 3 mg in 24 hours.

One-to-one care of the patient is often required and should be provided while the dose of psychotropic medication is titrated upward in a controlled and safe manner. C

Sedation should only be used in situations as indicated above and should not be used as a form of restraint. If sedatives are prescribed, the prescription should be reviewed regularly and discontinued as soon as possible. The aim should be to tail off any sedation after 24–48 hours.

For delirium due to alcohol withdrawal (delirium tremens) a benzodiazepine (eg diazepam or chlordiazepoxide) is preferred in a reducing course. Detailed guidelines for this condition are beyond the scope of these guidelines.

Prevention of complications

The main complications of delirium are:

- falls
- pressure sores
- nosocomial infections
- functional impairment
- continence problems
- over-sedation
- malnutrition.

Restraints (including cotsides, ‘geriatric chairs’ etc) have not been shown to prevent falls and may increase the risk of injury.^{61–64} It may be preferable to nurse the patient on a low bed or place the mattress directly on the floor. Adoption of the good practices described should make the use of physical restraints unnecessary for the management of confusion. C

Pressure sores – Patients should have a formal pressure sore risk assessment (eg Norton score, or Waterlow score), and receive regular pressure area care, including special mattresses where necessary. C

Patients should be mobilised as soon as their illness allows.

Functional impairment – Assessment by a physiotherapist and occupational therapist to maintain and improve functional ability should be considered in all delirious patients. D

There is evidence that patients who are managed by a multidisciplinary team do better than those cared for in a traditional way.^{3,4,12,14,39} B

Continence – A full continence assessment should be carried out. Regular toileting and prompt treatment of urinary tract infections may prevent urinary incontinence.³⁹ Catheters should be avoided where possible because of the increased risks of trauma in confused patients, and the risk of catheter associated infection. C

Malnutrition – It is often difficult for delirium patients to eat enough to meet increased metabolic needs. Food alternatives that take into account the patient’s preferences, and the option of finger foods should be considered. Adequate staffing levels should be ensured to support and encourage eating. Oral nutritional supplements can be considered and in severe cases short-term feeding by nasogastric tube may need to be considered,³⁹ although this is rarely a practical option.

Continued

Post delirium counselling

The literature suggests the delirium is often a very unpleasant experience for patients and that they may be left with unpleasant half-recollection of the events and of the delusions held during delirium.⁷² Consideration should be given to provide some support and counselling for patients who have been through the experience.

D. Service organisation*Staff training and education*

Senior doctors and nurses should ensure that doctors in training and nurses are able to recognise and treat delirium. **C**

An educational package for the multidisciplinary team is important. Such education of nurses and doctors has been shown to be effective in recognising and preventing delirium on an acute medical ward.⁷³

Liaison psychiatry

Liaison psychiatry services have a valuable role in preventing and managing delirium.⁶ In particular, help should be sought if there are behavioural problems. Many patients with delirium have an underlying dementia which may be best followed up and managed by a psychiatrist of old age.

Discharge

Care must be taken to ensure that the delirium has been properly investigated and treated before discharge. As with all older people discharge should be planned in conjunction with all disciplines involved in caring for the patient, both in hospital and in the community (including informal carers). Practical arrangements should be in place prior to discharge for activities such as washing, dressing, medication etc in accordance with the joint statement of the British Geriatrics Society and the Association of Directors of Social Services.⁷⁴ **C**

- Communication with all parties, including family and carers, involved in the patient's care is vital.
- Prior to discharge it is useful to assess the patient's cognitive and functional status (eg using standardised tools such as AMT and Barthel Index).
- Discharge summaries should be completed promptly.

Follow-up

Delirium is a common first presentation of an underlying dementing process. It may also be a marker of severe illness and comorbidity. It is therefore often appropriate to refer the patient to a geriatrician, psychiatrist of old age, community psychiatric nurse, occupational therapist or social worker for older people for further assessment and follow-up. Patients with delirium may benefit from more intensive support post discharge.⁷⁵

Steps in the prevention, diagnosis and management of delirium

STEP 1

Identify all older patients (over 65 years) with cognitive impairment using the AMT or MMSE on admission.

STEP 2

Consider delirium in all patients with cognitive impairment and at high risk (severe illness, dementia, fracture neck of femur, visual and hearing impairment). Use the CAM screening instrument.

STEP 3

Identify the cause of delirium if present from the history – obtained from relatives/carers – examination and investigations. Treat underlying cause or causes – commonly drugs or drug withdrawal, infection, electrolyte disturbance, dehydration or constipation.

STEP 4

In patients with delirium *and* patients at high risk of delirium:

Do:

- provide environmental and personal orientation
- ensure continuity of care
- encourage mobility
- reduce medication but ensure adequate analgesia
- ensure hearing aids and spectacles are available and in good working order
- avoid constipation
- maintain a good sleep pattern
- maintain good fluid intake
- involve relatives and carers (carers leaflet)
- avoid complications (immobility, malnutrition, pressure sores, over-sedation, falls, incontinence)
- liaise with old age psychiatry service.

Do not:

- catheterise
- use restraint
- sedate routinely
- argue with the patient.

STEP 5

If sedation has to be used, use one drug only starting at the lowest possible dose (haloperidol 0.5 mg currently recommended) and increasing in increments if necessary after an interval of two hours.

STEP 6

Ensure a safe discharge and consider follow-up with old age psychiatry team. Provide family/carer education and support.

AMT = Abbreviated Mental Test; AM = Confusion Assessment Method; MMSE = Mini-Mental State Examination.

Implications and implementation

The hospital environment could scarcely be worse for people at risk of delirium. The pressure to move patients between wards, the constant activity and noise, the understaffing of wards, the unfamiliar environment and faces could not be more calculated to cut the links to reality which support at-risk people.

Once confusion is established, the inability to clearly communicate symptoms such as pain or anxiety, the inability to carry out bodily functions such as micturition and eating and the inability to understand what is happening readily lead to a downward spiral including agitation, aggressive behaviour, poor nutrition, dehydration, incontinence and pressure ulcers.

The experience and training of staff in acute hospitals tends not to be underpinned with knowledge of the management of delirium and dementia.

Consideration must therefore be given to ensuring the following.

- At-risk patients (eg older people with hip fracture) are identified and preventive measures employed.
- Staff have the knowledge to recognise and manage older people at risk of or who have developed delirium.
- The environment is suitable to manage delirium.
- Sufficient staff are available to manage delirium. One-to-one nursing will frequently be necessary and there should be no barriers to obtaining staff at short notice if required.
- Close working relations with old age psychiatry services are established so that staff in acute hospitals have support and training in managing delirium.

Recommendations for an effective service are available in *Who cares wins* by the Royal College of Psychiatrists.⁶

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Appendix 1. Guideline development process

Scope and purpose

The scope	The scope of the current guidelines was the prevention, diagnosis and treatment of delirium in older people in hospital.
Overall objective of the guidelines	To update the <i>Guidelines for the diagnosis and management of delirium in the elderly</i> (1997, see www.bgs.org.uk) compiled by Dr Lesley Young and Dr Jim George based on the work of the multidisciplinary working party on Confusion in Crises, Royal College of Physicians, 1995.
The patient group covered	Older people admitted to hospital.
Target audience	Hospital doctors, nurses and allied health professionals, care assistants, commissioners of services, relatives and carers.
Clinical areas covered	Screening, prevention, assessment, treatment of the underlying cause, environmental management, guidance on the use of sedation. While the scope was restricted to hospital patients, the guidelines are relevant to older people with delirium in intermediate and community care settings.

Stakeholder involvement

The Guideline Development Group (GDG)	A multidisciplinary working party was convened by the Cerebral Ageing Special Interest Section of the British Geriatrics Society including representatives from: <ul style="list-style-type: none">• Age Concern• British Geriatrics Society• Royal College of Nursing• Royal College of Physicians• Royal College of Psychiatrists
Funding	Funding to support the project came from the British Geriatrics Society. The Royal College of Physicians (RCP) provided technical assistance through the Information Centre on a gratis basis as a pilot project.
Conflicts of interest	Members of the GDG were requested to declare conflicts of interest. None arose.

Rigour of development

Method of guideline development	The British Geriatric Society has adopted the AGREE methodology for guideline development (www.agreecollaboration.org)
Evidence gathering	The following databases were searched: Medline, Embase, Cochrane Library, PsychINFO, BNI, HMIC, CINAHL. Articles from 1997 to 2005 were identified to update the guidelines.
Review process and grading of recommendations	Dr Jim George and Dr John Holmes appraised the literature. All abstracts were reviewed. Abstracts were excluded if they related to letters, case reports, editorials, palliative care or to the paediatric literature. Grading of evidence during literature appraisal and grading of recommendations in the guidelines has followed the principles used by the Scottish Intercollegiate Guideline Network (SIGN) at www.sign.ac.uk/guidelines/fulltext/50/section6.html Where there was no evidence base, consensus was agreed by the GDG and ratified by the expert panel. The Information Centre at the RCP holds a database of the literature identified and the papers appraised.
Piloting and peer review	The guidelines were sent to a multi-professional panel of clinicians for peer review. The guidelines were ratified by the British Geriatrics Society Policy Committee and Clinical Effectiveness Committee.

Implementation

Methods of implementation	The guidelines will be made available to hospital clinicians through the publications department of the RCP and will be posted on the RCP and British Geriatrics Society Guidelines websites. The guidelines include guidance on assessment tools for the identification and monitoring of delirium.
Barriers to implementation	The major barrier to the implementation of the guidelines is the provision of the appropriate environment and staffing levels to provide the care required in acute hospital settings.
Plan for review	Review is planned for 2014.

Appendix 2. Grading system from the Scottish Intercollegiate Guideline Network (SIGN) methodology

Levels of evidence

- 1++** High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
- 1+** Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
- 1 -** Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias

- 2++** High quality systematic reviews of case-control or cohort studies
High quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal
- 2+** Well conducted case control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal
- 2 -** Case control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal

- 3** Non-analytic studies, eg case reports, case series
- 4** Expert opinion

Grades of recommendation

- A** At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; or
A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results
- B** A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or
Extrapolated evidence from studies rated as 1++ or 1+
- C** A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or
Extrapolated evidence from studies rated as 2++
- D** Evidence level 3 or 4; or
Extrapolated evidence from studies rated as 2+

Good Practice Point (GPP)

Recommended best practice based on the clinical experience of the Guideline Development Group.

RCT = randomised controlled trial.

Source: www.sign.ac.uk/guidelines/fulltext/50/section6.html

Appendix 3. Cognitive function screening tools

- **Abbreviated Mental Test Score (AMT)³² (a score of less than 8/10 is abnormal)**

- 1 Age
- 2 Time (to nearest hour)
- 3 Address for recall at end of test (42 West St)
- 4 Year
- 5 Name of hospital
- 6 Recognition of two people (eg doctor, nurse)
- 7 Date of birth
- 8 Year of First World War
- 9 Name of present monarch
- 10 Count backwards 20–1 (this also tests attention)

- **Mini-Mental State Examination^{33,76}**

- **Confusion Assessment Method (CAM)^{29–31}**

To have a positive CAM result the patient must display:

- 1 Presence of acute onset and fluctuating course
and
- 2 Inattention (eg 20–1 test with reduced ability to maintain attention or shift attention)
and either
- 3 Disorganised thinking (disorganised or incoherent speech)
or
- 4 Altered level of consciousness (usually lethargic or stuporous).