

Delirium: diagnosis, prevention and management

NICE guideline

Draft for consultation, November 2009

If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence is contained in the full version.

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Introduction

Delirium (sometimes called 'acute confusional state') is a clinical syndrome characterised by disturbed consciousness, cognitive function or perception, which has an acute onset and fluctuating course. It usually develops over 1–2 days. Delirium may be present when a person is admitted to hospital or long-term care (prevalent delirium) or may develop during a hospital admission or residential stay in long-term care (incident delirium).

Delirium is a common but complex clinical syndrome associated with poor outcomes. However, it can be prevented and treated.

Older people and people with dementia, severe illness or a hip fracture are more at risk of delirium. The prevalence of delirium in people on medical wards in hospital ranges from 10% to 31%, and up to 50% of people having surgery develop delirium. In long-term care the prevalence has been reported as 16%. But in the UK reporting of delirium is poor, indicating that awareness and reporting procedures need to be improved.

There is a significant burden associated with this condition. Compared with people who do not develop delirium, people who develop delirium may:

- need to stay longer in hospital or in critical care
- have an increased incidence of dementia
- have more hospital-acquired complications, such as falls and pressure sores
- be more likely to need to be admitted to long-term care if they are in hospital
- be more likely to die.

This clinical guideline describes improved methods of identifying and diagnosing delirium. In particular, the guideline focuses on preventing delirium in people identified to be at risk, using a targeted, multicomponent, non-pharmacological intervention that addresses a number of modifiable risk factors. If delirium is prevented, it should generate cost savings. This clinical guideline also describes how delirium should be managed.

DRAFT FOR CONSULTATION

The guideline will assume that prescribers will use a drug's summary of product characteristics to inform decisions made with individual patients.

Patient-centred care

This guideline offers best practice advice on the prevention of delirium in adults in hospital or long-term care who are at risk of delirium, and on the care of adults in hospital or long-term care who develop delirium.

Treatment and care should take into account patients' needs and preferences. People with delirium or at risk of delirium should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If patients do not have the capacity to make decisions, healthcare professionals should follow the Department of Health's advice on consent (available from www.dh.gov.uk/consent) and the code of practice that accompanies the Mental Capacity Act (summary available from www.publicguardian.gov.uk). In Wales, healthcare professionals should follow advice on consent from the Welsh Assembly Government (available from www.wales.nhs.uk/consent).

Good communication between healthcare professionals and patients is essential. It should be supported by evidence-based written information tailored to the patient's needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

Families and carers should also be given the information and support they need.

Key priorities for implementation

Risk factor assessment

- When people first present to hospital or long-term care, assess them for the following risk factors:
 - Age 65 years or older.
 - Cognitive impairment: a previous history of cognitive impairment or, if cognitive impairment is suspected, confirm it using a standardised and validated cognitive impairment measure.
 - Current hip fracture.
 - Severe illness (a clinical condition that is deteriorating or is at risk of deterioration)¹.

If any of these risk factors is present, the person is considered at risk of delirium. **[1.1.1]**

Indicators of prevalent delirium

- At presentation, assess people at risk for indicators of delirium, which are sudden changes or fluctuations in usual behaviour. These may be reported by the person at risk, or a carer or relative. The changes may be in any of the following:
 - cognitive function: for example, worsened concentration, slow responses, confusion
 - perception: for example, visual or auditory hallucinations
 - physical function: for example, reduced mobility, reduced movement, restlessness, agitation, changes in appetite, sleep disturbance
 - social behaviour: for example, poor cooperation, withdrawal, or alterations in communication, mood and/or attitude.

If any of these indicators is present, a healthcare professional who is trained and competent in the diagnosis of delirium should carry out a clinical assessment to confirm the diagnosis. **[1.2.1]**

¹ For further information on recognising and responding to acute illness in adults in hospital see 'Acutely ill patients in hospital' (NICE clinical guideline CG50).

Interventions to prevent delirium

- Ensure that people at risk of delirium have a care environment that:
 - avoids unnecessary room changes
 - maintains a team of healthcare professionals who are familiar to the person at risk. **[1.3.1]**
- Within 24 hours of admission, assess people at risk for clinical indicators contributing to delirium (recommendations 1.3.3.1–1.3.3.9). Based on this assessment, provide a multicomponent intervention package tailored to the person's individual needs and care setting. **[1.3.2]**
- The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention. The tailored package should address the clinical indicators in recommendations 1.3.3.1–1.3.3.9. **[1.3.3]**

Diagnosis (specialist clinical assessment)

- If indicators of delirium are identified, carry out a clinical assessment using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria or short Confusion Assessment Method (short CAM). In critical care or in the recovery room after surgery, CAM-ICU should be used. A healthcare professional who is trained and competent in the diagnosis of delirium should carry out the assessment. **[1.5.1]**
- Ensure that the diagnosis of delirium is documented in the person's healthcare record. **[1.5.2]**

Non-pharmacological interventions

- In people diagnosed with delirium, identify and manage the possible underlying cause or combination of causes. **[1.6.1]**
- Ensure effective communication and reorientation and provide reassurance for people diagnosed with delirium. Family, friends and carers may be able to help with this. **[1.6.2]**

Pharmacological interventions

- If non-pharmacological approaches are ineffective, consider giving short-term (for 1 week or less) haloperidol² or olanzapine² if people with delirium are distressed or a risk to themselves or others. **[1.6.4]**

² Haloperidol and olanzapine do not have UK marketing authorisation for this indication.

1 Guidance

The following guidance is based on the best available evidence. The full guideline ([add hyperlink]) gives details of the methods and the evidence used to develop the guidance.

The Guideline Development Group (GDG) used the following definitions in this guideline.

- Multidisciplinary team: a team of healthcare professionals with the full spectrum of clinical skills needed to offer holistic care to patients with complex problems.
- Long-term care: residential care within a facility that may include ongoing skilled nursing care and/or assistance with activities of daily living. Long-term care facilities include nursing homes, residential homes and elderly mentally infirm (EMI) homes.

Awareness of delirium and its consequences

Be aware that people in hospital or long-term care may be at risk of delirium, which can have serious consequences (such as increased risk of dementia and/or death) and, for people in hospital, may increase their risk of new admission to long-term care.

1.1 Risk factor assessment

1.1.1 When people first present to hospital or long-term care, assess them for the following risk factors:

- Age 65 years or older.
- Cognitive impairment: a previous history of cognitive impairment or, if cognitive impairment is suspected, confirm it using a standardised and validated cognitive impairment measure.
- Current hip fracture.

- Severe illness (a clinical condition that is deteriorating or is at risk of deterioration)³.

If any of these risk factors is present, the person is considered at risk of delirium.

- 1.1.2 Observe people at every opportunity for any changes in the risk factors for delirium.

1.2 *Indicators of prevalent delirium*

- 1.2.1 At presentation, assess people at risk for indicators of delirium, which are sudden changes or fluctuations in usual behaviour. These may be reported by the person at risk, or a carer or relative. The changes may be in any of the following:

- cognitive function: for example, worsened concentration, slow responses, confusion
- perception: for example, visual or auditory hallucinations
- physical function: for example, reduced mobility, reduced movement, restlessness, agitation, changes in appetite, sleep disturbance
- social behaviour: for example, poor cooperation, withdrawal, or alterations in communication, mood and/or attitude.

If any of these indicators is present, a healthcare professional who is trained and competent in the diagnosis of delirium should carry out a clinical assessment to confirm the diagnosis.

1.3 *Interventions to prevent delirium*

- 1.3.1 Ensure that people at risk of delirium have a care environment that:
- avoids unnecessary room changes
 - maintains a team of healthcare professionals who are familiar to the person at risk.

³ For further information on recognising and responding to acute illness in adults in hospital see 'Acutely ill patients in hospital' (NICE clinical guideline CG50).

- 1.3.2 Within 24 hours of admission, assess people at risk for clinical indicators contributing to delirium (recommendations 1.3.3.1–1.3.3.9). Based on this assessment, provide a multicomponent intervention package tailored to the person’s individual needs and care setting.
- 1.3.3 The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention. The tailored package should address the clinical indicators in recommendations 1.3.3.1–1.3.3.9.

Disorientation

1.3.3.1 Address reorientation through the following actions:

- Provide clear signage, soft lighting, a 24-hour clock and a calendar, all easily visible to the person at risk.
- Introduce cognitively stimulating activities (for example, structured reminiscence) and reorienting communication.
- Facilitate regular visits from family and friends.

Dehydration and/or constipation

1.3.3.2 Address dehydration and/or constipation through the following actions:

- Ensure adequate fluid intake to prevent dehydration by encouraging the person to drink. Consider offering subcutaneous or intravenous fluids if necessary.
- Take advice where necessary when managing fluid balance in people with comorbidities (for example heart failure or chronic kidney disease).

Infection

1.3.3.3 Address problems with infection through the following actions:

- Look for and treat infection.
- Avoid unnecessary catheterisation.
- Implement good infection control procedures in line with 'Infection control' (NICE clinical guideline CG2).

Pain

1.3.3.4 Address problems with pain through the following actions:

- Find out whether the person has pain.
- Look for non-verbal signs of pain, particularly in those with communication difficulties (for example, people with learning difficulties or dementia, or people on a ventilator or who have a tracheotomy).
- If people have been prescribed pain relief, ensure they receive it.

Polypharmacy effects

1.3.3.5 Address problems with polypharmacy effects through the following actions:

- Carry out a drug review for people taking multiple drugs in line with 'Medicines adherence' (NICE clinical guideline CG76).

Poor nutrition and/or constipation

1.3.3.6 Address problems with poor nutrition and/or constipation through the following actions:

- Follow the advice given on nutrition in ‘Nutrition support in adults’ (NICE clinical guideline CG32).
- If people have dentures, ensure they are well fitting.

Restricted or limited mobility or immobility

1.3.3.7 Address problems with restricted or limited mobility or immobility through the following actions:

- Encourage people to:
 - walk around
 - carry out active range-of-motion exercises, **and**
 - mobilise early after surgery.

Sensory impairment

1.3.3.8 Address problems with sensory impairment through the following actions:

- Ensure hearing and visual aids are available to and used by people who need them, and that they are in good working order.

Sleep disturbance

1.3.3.9 Address problems with sleep disturbance through the following actions:

- Promote good sleep patterns and sleep hygiene by:
 - scheduling medication rounds to avoid disturbing sleep, **and**
 - reducing noise to a minimum during sleep periods.

For more information on good sleep hygiene, see also ‘Parkinson’s disease’ (NICE clinical guideline CG35).

1.4 *Indicators: daily observations (all people in hospital or long-term care)*

- 1.4.1 Observe at least daily, all people in hospital or long-term care for indicators of delirium, which are sudden changes or fluctuations in usual behaviour (see recommendation 1.2.1).
If any of these indicators is present, a healthcare professional who is trained and competent in the diagnosis of delirium should carry out a clinical assessment to confirm the diagnosis.

1.5 *Diagnosis (specialist clinical assessment)*

- 1.5.1 If indicators of delirium are identified, carry out a clinical assessment using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria or short Confusion Assessment Method (short CAM). In critical care or in the recovery room after surgery, CAM-ICU should be used. A healthcare professional who is trained and competent in the diagnosis of delirium should carry out the assessment.
- 1.5.2 Ensure that the diagnosis of delirium is documented in the person's healthcare record.

1.6 *Treatment of delirium*

Non-pharmacological interventions

- 1.6.1 In people diagnosed with delirium, identify and manage the possible underlying cause or combination of causes.
- 1.6.2 Ensure effective communication and reorientation and provide reassurance for people diagnosed with delirium. Family, friends and carers may be able to help with this.
- 1.6.3 If the person with delirium is distressed or a risk to themselves or others, first use verbal and non-verbal techniques to de-escalate the situation before considering pharmacological interventions. For more information on de-escalation techniques, see 'Violence' (NICE clinical guideline 25).

Pharmacological interventions

1.6.4 If non-pharmacological approaches are ineffective, consider giving short-term (for 1 week or less) haloperidol⁴ or olanzapine⁴ if people with delirium are distressed or a risk to themselves or others.

1.7 *Information giving and support*

1.7.1 Offer information to people who are at risk of delirium or who have delirium, and their family and/or carers, which:

- describes people's experience of delirium
- informs them that the experience of delirium is common and is usually temporary
- encourages people at risk and their families and/or carers to tell their healthcare team about any sudden changes or fluctuations in usual behaviour
- encourages the person with delirium to share their experiences during recovery with the healthcare professional.

1.7.2 Ensure that information provided meets the cultural, linguistic, cognitive and language needs of the person.

⁴ Haloperidol and olanzapine do not have UK marketing authorisation for this indication.

2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from www.nice.org.uk/DeliriumScope

The Department of Health asked NICE:

‘To prepare a clinical guideline on the diagnosis, prevention and management of delirium.’

Groups that will be covered:

- Adult patients (18 years and older) in hospital.
- Adults (18 years and older) in long-term residential care.

Groups that will not be covered:

- Children and young people (younger than 18 years).
- People receiving end-of-life care.
- People with intoxication and/or withdrawing from drugs or alcohol, and people with delirium associated with these states.

How this guideline was developed

NICE commissioned the National Clinical Guideline Centre for Acute and Chronic Conditions (NCGC-ACC) to develop this guideline. The Centre established a guideline development group (see appendix A), which reviewed the evidence and developed the recommendations. An independent guideline review panel oversaw the development of the guideline (see appendix B).

There is more information about how NICE clinical guidelines are developed on the NICE website (www.nice.org.uk/howwework). A booklet, ‘How NICE clinical guidelines are developed: an overview for stakeholders, the public and the NHS’ (fourth edition, published 2009), is available from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N1739).

3 Implementation

NICE has developed tools to help organisations implement this guidance (see www.nice.org.uk/CGXX).

4 Research recommendations

The GDG has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future.

The GDG's full set of research recommendations is detailed in the full guideline (see section 5).

4.1 *Pharmacological prevention*

Are atypical antipsychotics more clinically and cost effective than placebo, typical antipsychotics, benzodiazepines or acetylcholinesterase inhibitors in preventing the development of delirium in hospital patients at high risk of delirium?

Why this is important

The serious nature of delirium and its consequences makes it important to establish all methods of prevention. Pharmacological agents may be a simple preventative treatment for delirium, but they can also cause delirium so they should be used with caution. The evidence is limited: three low-quality studies were found, each of which was unrepresentative either of the population or the drug used, but there was some indication of clinical effectiveness. A large randomised trial (with at least 100 patients in each arm) should be conducted in hospital patients at high risk of delirium to compare atypical antipsychotics, typical antipsychotics, benzodiazepines or acetylcholinesterase inhibitors with placebo for preventing delirium. It would be necessary to define the included population in terms of their delirium risk (for example high-risk patients could be those with two or more risk factors for delirium). The primary outcome should be the incidence of delirium, measured at least daily using a validated diagnostic tool. The severity and duration of delirium should also be recorded, together with adverse effects of the drugs, notably extrapyramidal symptoms and stroke.

4.2 *Pharmacological treatment*

In hospital patients with delirium, are atypical antipsychotics better than placebo or typical antipsychotics or benzodiazepines for treating delirium?

Why this is important

Pharmacological interventions are currently used in clinical practice to manage the symptoms of delirium but the evidence for this is limited. One moderate-quality study showed that typical and atypical antipsychotics were clinically and cost effective compared with placebo, but there is no evidence for benzodiazepines. Pharmacological agents that alter the course of delirium or control particular symptoms might be useful in treating delirium, but we need to determine whether the drugs should be given routinely or for selected symptoms, and what adverse events may occur. A large randomised trial (with at least 100 patients in each arm) should be conducted in hospital patients with delirium to compare atypical antipsychotics, typical antipsychotics, or benzodiazepines with placebo for the treatment of delirium. The outcomes should be recovery from delirium (complete response), and the duration and severity of delirium, measured using a validated diagnostic tool. Adverse events, notably extrapyramidal symptoms and stroke, should also be recorded.

4.3 *Multicomponent intervention*

For patients in long-term care, is a multicomponent non-pharmacological intervention more clinically and cost effective than usual care in preventing the development of delirium?

Why this is important

Although there is moderate-quality evidence of clinical and cost effectiveness for multicomponent interventions for the prevention of delirium in patients in hospital, there is no evidence in a long-term care setting. It is anticipated that such an intervention would benefit this long-term care population. A large, adequately powered, randomised trial, or a large, adequately powered, cluster randomised trial should be conducted in people in long-term care to compare

a multicomponent intervention with usual care. The multicomponent intervention should include assessment by a trained and competent healthcare professional, who would recommend actions tailored to the person's needs. The intervention should include reorientation, drug review, hydration and sleep hygiene. The primary outcome should be the incidence of delirium, measured at least daily using a validated diagnostic tool. The severity and duration of delirium should also be recorded using a validated tool, together with the consequences of delirium, including admission to hospital.

4.4 *Delirium in long-term care*

How common is delirium and what are its adverse outcomes in people in long-term care?

Why this is important

Although there is evidence for adverse outcomes consequent to delirium in hospital, there is very little evidence from long-term care. It is important to determine whether people in long-term care, who already have a high risk of death, dementia and other adverse outcomes, have a further increased risk of these outcomes if they develop delirium. The risk of hospital admission as a consequence of delirium is also unknown. A large cohort study should be conducted in people in long-term care to determine:

- the prevalence of delirium in this setting, **and**
- if the presence of delirium is a prognostic factor for death, dementia, admission to hospital, falls and other adverse outcomes.

The multivariate analysis conducted in this study should take into consideration the potential significant risk factors and confounding factors identified in the guideline. Such a study would also inform cost-effectiveness analyses for the prevention and treatment of delirium.

4.5 *Education programme*

Does a staff education programme (compared with an educational leaflet or usual care) reduce the incidence of delirium and improve the recognition and recording of delirium in people in hospital?

Why this is important

There is some evidence from multicomponent prevention studies to suggest that an education programme for healthcare professionals who care for people at risk of delirium reduces the incidence of delirium. However, the quality of this evidence is poor. There is a need to determine whether education has an important preventative effect on the incidence of delirium. There is also a need to find out if an educational programme increases awareness of delirium, so that delirium is recorded accurately, which is not the case in the UK at present. A cluster randomised trial should be carried out, with whole hospitals randomised to the educational interventions (thereby reducing the trial contamination effects of staff vicariously picking up education from colleagues randomised to the education programme arm). The primary outcomes (incidence of delirium and recording of delirium in the patient's healthcare record) should be measured at a minimum of three timepoints before and after the intervention.

5 Other versions of this guideline

5.1 *Full guideline*

The full guideline, 'Delirium: diagnosis, prevention and management' contains details of the methods and evidence used to develop the guideline. It is published by the NCGC-ACC, and is available from [NCC website details to be added] and our website (www.nice.org.uk/CGXXfullguideline). **[Note: these details will apply to the published full guideline.]**

5.2 *Quick reference guide*

A quick reference guide for healthcare professionals is available from www.nice.org.uk/CGXXquickrefguide

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N1XXX). **[Note: these details will apply when the guideline is published.]**

5.3 'Understanding NICE guidance'

A summary for patients and carers ('Understanding NICE guidance') is available from www.nice.org.uk/CGXXpublicinfo

For printed copies, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk (quote reference number N1XXX). **[Note: these details will apply when the guideline is published.]**

We encourage NHS and voluntary sector organisations to use text from this booklet in their own information about delirium.

6 Related NICE guidance

Published

- Schizophrenia. NICE clinical guideline 82 (2009). Available from www.nice.org.uk/CG82
- Medicines adherence. NICE clinical guideline 76 (2009). Available from www.nice.org.uk/CG76
- Surgical site infection. NICE clinical guideline 74 (2008). Available from www.nice.org.uk/CG74
- Drug misuse. NICE clinical guideline 52 (2007). Available from www.nice.org.uk/CG52
- Acutely ill patients in hospital. NICE clinical guideline 50 (2007). Available from www.nice.org.uk/CG50
- Dementia. NICE clinical guideline 42 (2006). Available from www.nice.org.uk/CG42
- Parkinson's disease. NICE clinical guideline 35 (2006). Available from www.nice.org.uk/CG35
- Nutrition support in adults. NICE clinical guideline 32 (2006). Available from www.nice.org.uk/CG32

- Violence. NICE clinical guideline 25 (2005). Available from www.nice.org.uk/CG25
- Infection control. NICE clinical guideline 2 (2003). Available from www.nice.org.uk/CG2
- Donepezil, galantamine, rivastigmine (review) and memantine for the treatment of Alzheimer's disease (amended). NICE technology appraisal 111 (2009). Available from www.nice.org.uk/TA111

Under development

NICE is developing the following guidance (details available from www.nice.org.uk):

- Alcohol use disorders in adults and young people: clinical management. NICE clinical guideline. Publication expected May 2010.
- Alcohol dependence and harmful alcohol use. NICE clinical guideline. Publication expected January 2011.

7 Updating the guideline

NICE clinical guidelines are updated so that recommendations take into account important new information. New evidence is checked 3 years after publication, and healthcare professionals and patients are asked for their views; we use this information to decide whether all or part of a guideline needs updating. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations.

Appendix A: The Guideline Development Group

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Appendix B: The Guideline Review Panel

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

[NICE to add]

[Name; style = Unnumbered bold heading]

[job title and location; style = NICE normal]

Appendix C: The algorithms

[NB NICE to add a note here if the algorithms are being published as a separate file on the website]

[Add a hyperlink to the QRG here if relevant]