

# Delirium: prevention, diagnosis and management

Clinical guideline

Published: 28 July 2010

[nice.org.uk/guidance/cg103](https://www.nice.org.uk/guidance/cg103)

## Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

## Contents

Overview .....	4
Who is it for? .....	4
Introduction .....	5
More information.....	6
Key priorities for implementation .....	7
1 Guidance .....	10
1.1 Risk factor assessment .....	10
1.2 Indicators of delirium: at presentation .....	11
1.3 Interventions to prevent delirium .....	11
1.4 Indicators of delirium: daily observations .....	14
1.5 Diagnosis (specialist clinical assessment) .....	14
1.6 Treating delirium.....	14
1.7 Information and support.....	15
2 Research recommendations .....	17
2.1 Pharmacological prevention .....	17
2.2 Pharmacological treatment.....	17
2.3 Multicomponent intervention.....	18
2.4 Delirium in long-term care.....	18
2.5 Education programme .....	19
Appendix A: The Guideline Development Group .....	20
Appendix B: The Guideline Review Panel.....	22

This guideline is the basis of QS50, QS63 and QS110.

## Overview

This guideline covers diagnosing and treating delirium in people aged 18 and over in hospital and in long-term residential care or a nursing home. It also covers identifying people at risk of developing delirium in these settings and preventing onset. It aims to improve diagnosis of delirium and reduce hospital stays and complications.

NICE has published separate advice for the care of people with [alcohol-related physical health problems](#), including delirium related to alcohol use (known as delirium tremens).

## Who is it for?

- NHS staff responsible for patients in hospital (including critical care) and long-term residential care settings (including primary care healthcare professionals)
- Adult hospital patients
- Adults in long-term residential care or a nursing home
- Family and carers of people with or at high risk of developing delirium

## Introduction

Delirium (sometimes called 'acute confusional state') is a common 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. It is a serious condition that is associated with poor outcomes. However, it can be prevented and treated if dealt with urgently.

A person may already have delirium when they present to hospital or long-term care or it may develop during a hospital admission or residential stay in long-term care. Delirium can be hypoactive or hyperactive but some people show signs of both (mixed). People with hyperactive delirium have heightened arousal and can be restless, agitated and aggressive. People with hypoactive delirium become withdrawn, quiet and sleepy. Hypoactive and mixed delirium can be more difficult to recognise.

It can be difficult to distinguish between delirium and dementia and some people may have both conditions. If clinical uncertainty exists over the diagnosis, the person should be managed initially for delirium.

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 is about 20% to 30%, and 10% to 50% of people having surgery develop delirium. In long-term care the prevalence is under 20%. But reporting of delirium is poor in the UK, 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 methods of preventing, identifying, diagnosing and treating 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 ('clinical factors').

If delirium is prevented, it should generate cost savings.

This guideline does not cover children and young people (younger than 18 years), people receiving end-of-life care, or people with intoxication and/or withdrawing from drugs or alcohol, and people with delirium associated with these states.

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

### *More information*

To find out what NICE has said on topics related to this guideline, see our web page on [delirium](#).

## Key priorities for implementation

### Risk factor assessment

- When people first present to hospital or long-term care, assess them for the following risk factors. If any of these risk factors is present, the person is at risk of delirium.
  - Age 65 years or older.
  - Cognitive impairment (past or present) and/or dementia<sup>[1]</sup>. 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)<sup>[2]</sup>.

### Indicators of delirium: at presentation

- At presentation, assess people at risk for recent (within hours or days) changes or fluctuations in behaviour. These may be reported by the person at risk, or a carer or relative. Be particularly vigilant for behaviour indicating hypoactive delirium (marked\*). These behaviour changes may affect:
  - 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, lack of cooperation with reasonable requests, withdrawal\*, or alterations in communication, mood and/or attitude.

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

### Interventions to prevent delirium

- Ensure that people at risk of delirium are cared for by a team of healthcare professionals who are familiar to the person at risk. Avoid moving people within and between wards or rooms unless absolutely necessary.

- Give a tailored multicomponent intervention package:
  - Within 24 hours of admission, assess people at risk for clinical factors contributing to delirium.
  - Based on the results of this assessment, provide a multicomponent intervention tailored to the person's individual needs and care setting as described in recommendations 1.3.3.1–1.3.3.10.
- The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention.

### Diagnosis (specialist clinical assessment)

- If indicators of delirium are identified, carry out a clinical assessment based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria or short Confusion Assessment Method (short CAM) to confirm the diagnosis. 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. If there is difficulty distinguishing between the diagnoses of delirium, dementia or delirium superimposed on dementia, treat for delirium first.
- Ensure that the diagnosis of delirium is documented both in the person's hospital record and in their primary care health record.

### Initial management

- In people diagnosed with delirium, identify and manage the possible underlying cause or combination of causes.
- Ensure effective communication and reorientation (for example, explaining where the person is, who they are, and what your role is) and provide reassurance for people diagnosed with delirium. Consider involving family, friends and carers to help with this. Provide a suitable care environment (see recommendation 1.3.1).

### Distressed people

- If a person with delirium is distressed or considered a risk to themselves or others and verbal and non-verbal de-escalation techniques are ineffective or inappropriate, consider giving short-term (usually for 1 week or less) haloperidol<sup>[3]</sup> or olanzapine<sup>[3]</sup>. Start at the lowest clinically appropriate dose and titrate cautiously according to symptoms.

<sup>[1]</sup> For guidance on diagnosing dementia, see [diagnosis](#) in the NICE guideline on dementia.

<sup>[2]</sup> For further information on recognising and responding to acute illness in adults in hospital, see the NICE guideline on [acutely ill adults in hospital](#).

<sup>[3]</sup> Haloperidol and olanzapine do not have UK marketing authorisation for this indication.

## 1 Guidance

People have the right to be involved in discussions and make informed decisions about their care, as described in [your care](#).

[Making decisions using NICE guidelines](#) explains how we use words to show the strength (or certainty) of our recommendations, and has information about professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

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

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

- **Hyperactive delirium:** a subtype of delirium characterised by people who have heightened arousal and can be restless, agitated or aggressive.
- **Hypoactive delirium:** a subtype of delirium characterised by people who become withdrawn, quiet and sleepy.
- **Multidisciplinary team:** a team of healthcare professionals with the different clinical skills needed to offer holistic care to people with complex problems such as delirium.
- **Long-term care:** residential care in a home that may include skilled nursing care and help with everyday activities. This includes nursing homes and residential homes.

### Think delirium

Be aware that people in hospital or long-term care may be at risk of delirium. This can have serious consequences (such as increased risk of dementia and/or death) and, for people in hospital, may increase their length of stay in hospital and 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. If any of these risk factors is present, the person is at risk of delirium.

- Age 65 years or older.

- Cognitive impairment (past or present) and/or dementia<sup>[a]</sup>. 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)<sup>[a]</sup>.

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

## 1.2 *Indicators of delirium: at presentation*

1.2.1 At presentation, assess people at risk for recent (within hours or days) changes or fluctuations in behaviour. These may be reported by the person at risk, or a carer or relative. Be particularly vigilant for behaviour indicating hypoactive delirium (marked\*). These behaviour changes may affect:

- 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, lack of cooperation with reasonable requests, withdrawal\*, or alterations in communication, mood and/or attitude.

If any of these behaviour changes are present, a healthcare professional who is trained and competent in diagnosing 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 are cared for by a team of healthcare professionals who are familiar to the person at risk. Avoid moving people within and between wards or rooms unless absolutely necessary.

1.3.2 Give a tailored multicomponent intervention package:

- Within 24 hours of admission, assess people at risk for clinical factors contributing to delirium.
- Based on the results of this assessment, provide a multicomponent intervention tailored to the person's individual needs and care setting as described in recommendations 1.3.3.1–1.3.3.10.

1.3.3 The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention.

1.3.3.1 Address cognitive impairment and/or disorientation by:

- providing appropriate lighting and clear signage; a clock (consider providing a 24-hour clock in critical care) and a calendar should also be easily visible to the person at risk
- talking to the person to reorientate them by explaining where they are, who they are, and what your role is
- introducing cognitively stimulating activities (for example, reminiscence)
- facilitating regular visits from family and friends.

1.3.3.2 Address dehydration and/or constipation by:

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

1.3.3.3 Assess for hypoxia and optimise oxygen saturation if necessary, as clinically appropriate.

1.3.3.4 Address infection by:

- looking for and treating infection
- avoiding unnecessary catheterisation
- implementing infection control procedures in line with the NICE guideline on [healthcare-associated infections](#).

1.3.3.5 Address immobility or limited mobility through the following actions:

- Encourage people to:
  - mobilise soon after surgery
  - walk (provide appropriate walking aids if needed – these should be accessible at all times).
- Encourage all people, including those unable to walk, to carry out active range-of-motion exercises.

1.3.3.6 Address pain by:

- assessing for pain
- looking 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 tracheostomy)
- starting and reviewing appropriate pain management in any person in whom pain is identified or suspected.

1.3.3.7 Carry out a medication review for people taking multiple drugs, taking into account both the type and number of medications.

1.3.3.8 Address poor nutrition by:

- following the advice given on nutrition in the NICE guideline on [nutrition support for adults](#)
- if people have dentures, ensuring they fit properly.

1.3.3.9 Address sensory impairment by:

- resolving any reversible cause of the impairment, such as impacted ear wax
- ensuring hearing and visual aids are available to and used by people who need them, and that they are in good working order.

1.3.3.10 Promote good sleep patterns and sleep hygiene<sup>[6]</sup> by:

- avoiding nursing or medical procedures during sleeping hours, if possible
- scheduling medication rounds to avoid disturbing sleep
- reducing noise to a minimum during sleep periods.

## 1.4 *Indicators of delirium: daily observations*

1.4.1 Observe, at least daily, all people in hospital or long-term care for recent (within hours or days) changes or fluctuations in usual behaviour (see recommendation 1.2.1). These may be reported by the person at risk, or a carer or relative. If any of these behaviour changes 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 based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria or short Confusion Assessment Method (short CAM) to confirm the diagnosis. 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. If there is difficulty distinguishing between the diagnoses of delirium, dementia or delirium superimposed on dementia, treat for delirium first.

1.5.2 Ensure that the diagnosis of delirium is documented both in the person's hospital record and in their primary care health record.

## 1.6 *Treating delirium*

### Initial management

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 (for example explaining where the person is, who they are, and what your role is) and provide reassurance for people diagnosed with delirium. Consider involving family,

friends and carers to help with this. Provide a suitable care environment (see recommendation 1.3.1).

## Distressed people

- 1.6.3 If a person with delirium is distressed or considered a risk to themselves or others, first use verbal and non-verbal techniques to de-escalate the situation. For more information on de-escalation techniques, see the NICE guideline on [violence and aggression](#). Distress may be less evident in people with hypoactive delirium, who can still become distressed by, for example, psychotic symptoms.
- 1.6.4 If a person with delirium is distressed or considered a risk to themselves or others and verbal and non-verbal de-escalation techniques are ineffective or inappropriate, consider giving short-term (usually for 1 week or less) haloperidol<sup>[7]</sup> or olanzapine<sup>[7]</sup>. Start at the lowest clinically appropriate dose and titrate cautiously according to symptoms.
- 1.6.5 Use antipsychotic drugs with caution or not at all for people with conditions such as Parkinson's disease or dementia with Lewy bodies<sup>[8]</sup>.

## If delirium does not resolve

- 1.6.6 For people in whom delirium does not resolve:
- Re-evaluate for underlying causes.
  - Follow up and assess for possible dementia<sup>[9]</sup>.

## 1.7 Information 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:
- informs them that delirium is common and usually temporary
  - describes people's experience of delirium
  - encourages people at risk and their families and/or carers to tell their healthcare team about any sudden changes or fluctuations in behaviour

- encourages the person who has had delirium to share their experience of delirium with the healthcare professional during recovery
- advises the person of any support groups.

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

---

<sup>[4]</sup> For guidance on diagnosing dementia, see [diagnosis](#) in the NICE guideline on dementia.

<sup>[5]</sup> For further information on recognising and responding to acute illness in adults in hospital, see the NICE guideline on [acutely ill adults in hospital](#).

<sup>[6]</sup> For more information on good sleep hygiene, see the NICE guideline on [Parkinson's disease](#).

<sup>[7]</sup> Haloperidol and olanzapine do not have UK marketing authorisation for this indication.

<sup>[8]</sup> For more information on the use of antipsychotics for these conditions, see the NICE guidelines on [Parkinson's disease](#) and [dementia](#).

<sup>[9]</sup> For guidance on dementia, see the NICE guideline on [dementia](#).

## 2 Research recommendations

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline (see section 5).

### 2.1 *Pharmacological prevention*

In people in hospital who are at high risk of delirium, which medication (atypical antipsychotics, typical antipsychotics, benzodiazepines or acetylcholinesterase inhibitors), compared with placebo or each other, is more clinically and cost effective in preventing the development 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 preventive treatment for delirium, but there is uncertainty about effectiveness and side effects 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 medication used, but there was some indication of clinical effectiveness. A large randomised trial (with at least 100 people in each arm) should be conducted in people in hospital who are at high risk of delirium to compare atypical antipsychotics, typical antipsychotics, benzodiazepines or acetylcholinesterase inhibitors with placebo, or each other, for preventing delirium. The included populations should be defined in terms of their delirium risk (for example people at high risk 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 medication, notably extrapyramidal symptoms and stroke.

### 2.2 *Pharmacological treatment*

In people in hospital who have delirium, which is the most effective medication (atypical antipsychotics, typical antipsychotics or benzodiazepines) compared with placebo or each other 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 medication should be given routinely or for selected symptoms, and what adverse events may occur. A large randomised trial (with at least 100 people in each arm) should be conducted in people in hospital with delirium to compare atypical antipsychotics, typical antipsychotics, or benzodiazepines with placebo, or each other, 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.

### 2.3 *Multicomponent intervention*

For people 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 people 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 the recommended interventions to prevent delirium, particularly reorientation, medication 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.

### 2.4 *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.

## 2.5 *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 preventive 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 person's healthcare record) should be measured at a minimum of three timepoints before and after the intervention.

## Appendix A: The Guideline Development Group

### David Anderson

Consultant in Old Age Psychiatry, Mersey Care NHS Trust

### Andrew Clegg (non-voting member)

Specialist Registrar in Geriatric and General Medicine, Bradford Royal Infirmary, West Yorkshire

### Melanie Gager

Sister in Critical Care Follow Up, Royal Berkshire Hospital, Reading

### Jim George

Consultant Physician, Cumberland Infirmary, Carlisle

### Wendy Harvey (nee Tomlinson)

Homes Manager, MHA Care Group

### Jane Healy

Senior Clinical Practice Facilitator, University College London Hospitals NHS Foundation Trust, London

### Anne Hicks

Consultant in Emergency Medicine, Plymouth Hospitals NHS Trust

### John Holmes

Senior Lecturer in Old Age Liaison Psychiatry, Institute of Health Sciences, University of Leeds

### Emma Ouldred

Dementia Nurse Specialist, King's College Hospital NHS Foundation Trust, London

### Najma Siddiqi

Consultant Psychiatrist, Bradford District Care Trust, West Yorkshire

### Beverley Tabernacle

Nurse Consultant, Salford Royal Foundation Trust (until January 2009)

### Gordon Sturmeay

Patient and carer member, Critpal (Intensive Care Society) (until August 2008)

**Rachel White**

Patient and carer member

**Matt Wiltshire**

Patient and carer member (from November 2008)

**John Young (Chair)**

Honorary Consultant Geriatrician, Bradford Teaching Hospitals Foundation NHS Trust

## 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.

**Graham Archard**

GP, Dorset

**Catherine Arkley**

Lay Member

**Mike Drummond (Chair)**

Director, Centre for Health Economics, University of York

**David Gillen**

Medical Director, Wyeth Pharmaceutical

**Ruth Stephenson**

Consultant Anaesthetist, Department of Anaesthetics, Aberdeen Royal Infirmary

ISBN: 978-1-4731-2992-4

### *Accreditation*

