NICE National Institute for Health and Care Excellence

NICE guideline

Delirium: prevention, diagnosis and management in hospital and long-term care

Clinical guideline

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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.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

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

This guideline is the basis of QS50 and QS63.

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.

For advice on care for people with delirium related to alcohol use (delirium tremens) see the NICE guideline on alcohol-use disorders.

Who is it for?

- NHS staff caring for patients in hospital (including critical care) and long-term residential care settings (including primary care healthcare professionals)
- Adults in hospital, long-term residential care or a nursing home who have, or are at high risk of developing, delirium; their family and carers.

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about 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 prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 Think delirium

1.1.1 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. For recommendations on managing delirium in palliative care, see the NICE guideline on care of dying adults in the last days of life. **[2010]**

1.2 Risk factor assessment

1.2.1 When people first present to hospital or long-term care, assess them for the following risk factors. If any of these risk factors are present, the person is at risk of delirium.

- Age 65 years or older.
- Cognitive impairment (past or present) and/or dementia (for guidance on diagnosing dementia, see the section on diagnosis in the NICE guideline on dementia). 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; for further information on recognising and responding to acute illness in adults in hospital, see the NICE guideline on acutely ill adults in hospital). **[2010]**

1.2.2 Observe people at every opportunity for any changes in the risk factors for delirium. **[2010]**

1.3 Indicators of delirium: at presentation

1.3.1 At presentation, assess people at risk for recent (within hours or days) changes or fluctuations that may indicate delirium. These may be reported by the person at risk, or a carer or relative. These 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, difficulty engaging with or following requests, withdrawal, or alterations in communication, mood and/or attitude.

  If any of these changes are present, the person should have an assessment (see recommendation 1.6.1). **[2010, amended 2023]**

1.3.2 Be particularly vigilant for changes that may indicate hypoactive delirium, which are often missed, such as withdrawal, slow responses, reduced mobility and movement, worsened concentration and reduced appetite. **[2010]**

1.4 Preventing delirium

1.4.1 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. **[2010]**

1.4.2 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 1.4.4 to 1.4.13. **[2010]**

1.4.3 The tailored multicomponent intervention package should be delivered by a multidisciplinary team trained and competent in delirium prevention. **[2010]**

1.4.4 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. **[2010]**

1.4.5 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). **[2010]**

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

Be aware that some pulse oximeters can underestimate or overestimate oxygen saturation levels, especially if the saturation level is borderline. Overestimation has been reported in people with dark skin. See also the NHS England Patient Safety Alert on the risk of harm from inappropriate placement of pulse oximeter probes. **[2010]**

1.4.7 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. **[2010]**

1.4.8 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. **[2010]**

1.4.9 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. **[2010]**

1.4.10 Carry out a medication review for people taking multiple drugs, taking into account both the type and number of medications. For information on medicines optimisation see the NICE guideline on medicines optimisation. **[2010]**

1.4.11 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. **[2010]**

1.4.12 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. **[2010]**

1.4.13 Promote good sleep patterns and sleep hygiene 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. **[2010]**

1.5 Indicators of delirium: daily observations

1.5.1 Observe, at least daily, all people in hospital or long-term care for recent (within hours or days) changes or fluctuations indicating delirium (for example, see recommendation 1.3.1). These may be reported by the person at risk, or a carer or relative. If any of these changes are present the person should have an assessment using an appropriate tool (see recommendation 1.6.1). **[2010, amended 2023]**

1.5.2 Ensure that any changes that may indicate delirium are documented in the person's record or notes. **[2023]**

For a short explanation of why the committee made these recommendations and how they might affect practice, see the rationale and impact section on indicators of delirium: daily observations.

Full details of the evidence and the committee's discussion are in evidence review A: diagnostic accuracy of tests to identify delirium.

1.6 Assessment and diagnosis

1.6.1 If indicators of delirium are identified, a health or social care practitioner who is competent to do so should carry out an assessment using the 4AT. In critical care or in the recovery room after surgery use the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) or Intensive Care Delirium Screening Checklist (ICDSC) instead of the 4AT. **[2023]**

1.6.2 If the assessment described in recommendation 1.6.1 indicates delirium, a healthcare professional with the relevant expertise should make the final diagnosis. This could be the same person who made the assessment. **[2023]**

1.6.3 If there is difficulty distinguishing between the diagnoses of delirium, dementia or delirium superimposed on dementia, manage the delirium first. **[2010]**

1.6.4 Ensure that the diagnosis of delirium is documented both in the person's record or notes, and in their primary care health record. **[2010]**

For a short explanation of why the committee made the 2023 recommendations and how they might affect practice, see the rationale and impact section on assessment and diagnosis.

Full details of the evidence and the committee's discussion are in evidence review A: diagnostic accuracy of tests to identify delirium.

1.7 Treating delirium

Initial management

1.7.1 In people diagnosed with delirium, identify and manage the possible underlying cause or combination of causes. **[2010]**

1.7.2 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 1.4.1 in the section on preventing delirium). **[2010]**

Distressed people

1.7.3 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. **[2010]**

1.7.4 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 haloperidol (usually for 1 week or less). Start at the lowest clinically appropriate dose and titrate cautiously according to symptoms. Take into account the Medicines and Healthcare products Regulatory Agency's advice about the risks of using haloperidol for the acute treatment of delirium in older people, including the risks of cardiac and neurological side effects (especially in people living with Parkinson's disease or dementia with Lewy bodies). **[2010]**

If delirium does not resolve

1.7.5 For people in whom delirium does not resolve:

- re-evaluate for underlying causes
- follow up and assess for possible dementia (see the NICE guideline on dementia). **[2010]**

1.8 Information and support

1.8.1 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. **[2010]**

1.8.2 Ensure that information provided meets the cultural, cognitive and language needs of the person. **[2010]**

Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline.

Health or social care practitioners

Health and social care staff across the wider care team. This could include registered nurses and care workers (also called care assistants or support workers), social workers, therapists, case managers, GPs, lead clinicians, community nurses and allied

professionals, such as physiotherapists, occupational therapists and dietitians.

Healthcare professionals

Health professionals regulated or licensed with a professional body to provide care and support, for example, generalist and specialist doctors registered with the General Medical Council, and nurses registered with the Nursing and Midwifery Council.

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.

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.

Recommendations for research

The guideline committee has made the following key recommendations for research.

1 Delirium assessment tools

What is the diagnostic accuracy, and ease of implementation, of different delirium assessment tools:

- for people with pre-existing cognitive impairment, for example dementia, learning disability or severe depression
- for people who do not speak English as a first language
- in different settings, for example emergency departments, residential care homes or virtual consultations
- when delivered by different types of health and social care practitioners, for example healthcare assistants or allied health professionals such as paramedics? **[2023]**

For a short explanation of why the committee made this recommendation for research, see the rationale section on assessment and diagnosis.

Full details of the evidence and the committee's discussion are in evidence review A: diagnostic accuracy of tests to identify delirium.

2 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? **[2010]**

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: 3 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 2 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.

3 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? **[2010]**

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.

4 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? **[2010]**

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.

5 Delirium in long-term care

How common is delirium and what are its adverse outcomes in people in long-term care? **[2010]**

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.

6 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? **[2010]**

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 3 timepoints before and after the intervention.

Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice.

Indicators of delirium: daily observations

Recommendations 1.5.1 to 1.5.2

Why the committee made the recommendations

The committee agreed with the recommendation in the previous version of the guideline that all staff should be observing the people in their care and should be alert for changes indicating delirium. They noted that some simple tools like the Single Question to Identify Delirium (SQiD) might be useful to help practitioners notice any changes. They did not add SQiD specifically to the recommendation because they agreed that it is just one of many ways to encourage observation and that many places already have systems set up for this. They noted that in some settings the recording of these observations could be inconsistent, and that routine recording of changes that might indicate delirium was important.

How the recommendations might affect practice

Better recording of the indicators of delirium will improve the chances of these changes being noticed and acted upon.

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Assessment and diagnosis

Recommendations 1.6.1 to 1.6.2

Why the committee made the recommendations

The committee agreed that once a change that might indicate delirium has been noted

and recorded, a member of staff competent to do so should carry out a formal assessment.

Several assessment tools had high enough sensitivity and specificity to be useful in clinical practice. However, the committee agreed that implementation issues need to be considered as well. For example, who can do the test, how long does it take and how much training is needed?

Balancing the evidence for accuracy and cost effectiveness with the practicality of implementing the tests, the committee agreed that the 4AT was the best option for most settings. It is among the most accurate of the tools reviewed, quick and simple to use, and has a broader range of evidence to support it.

The committee agreed that a range of health and social care practitioners would be able to carry out the 4AT and that special training is not needed, although practitioners should be assessed as competent in its use. They also discussed that some specialist professionals may not need to use a screening tool to carry out an assessment and diagnose delirium, but that it would generally be considered good practice. Overall, they agreed that its use will help ensure that delirium is picked up promptly in different care settings, especially those where a healthcare professional may not be immediately available.

For critical care and post-surgical settings, the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) and Intensive Care Delirium Screening Checklist (ICDSC) worked best because they were specifically designed for those settings. However, the committee noted that training is needed for both CAM-ICU and ICDSC before practitioners can use them.

If the assessment shows delirium is likely, the committee agreed that the final diagnosis should be carried out by a healthcare professional with the necessary experience and expertise, for example, a specialist nurse, a GP, lead clinician or a member of the frailty team. Depending on the circumstances, this might be the same person who carried out the 4AT. If there is uncertainty about the diagnosis, a specialist such as a geriatrician or psychiatrist, may need to be involved.

The committee agreed that although the evidence allowed them to make recommendations overall, further, more specific, research on the accuracy and ease of use of different assessment tools in different settings, for different patient groups (including those with dementia, cognitive impairments, learning disabilities or affective disorders)

and by different healthcare practitioners, would help to make future guidance more specific. They therefore made a recommendation for research on delirium assessment tools.

How the recommendations might affect practice

The committee noted that the assessment tools they recommended are already the most commonly used in practice. The change from healthcare professional in the previous version of this guideline to health or social care practitioner in this version will potentially reduce the workload for healthcare professionals who previously had to carry out assessments for delirium.

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Context

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 to 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.

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.

Finding more information and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE topic page on mental health, behavioural and neurodevelopmental conditions.

For full details of the evidence and the guideline committee's discussions, see the full guideline and evidence review. You can also find information about how the guideline was developed, including details of the committee.

NICE has produced tools and resources to help you put this guideline into practice. For general help and advice on putting our guidelines into practice, see resources to help you put NICE guidance into practice.

Update information

January 2023: We have reviewed the evidence and made new recommendations on assessing and diagnosing delirium. These recommendations are marked **[2023]**.

We have also made some changes without an evidence review:

- formatting changes to improve accessibility
- 'changes or fluctuations in usual behaviour' has been changed to 'changes or fluctuations indicating delirium' to reflect that some indicators may not be related to behaviour
- to reflect the new recommendation on the use of an assessment tool.

These recommendations are marked **[2010, amended 2023]**.

Recommendations marked **[2010]** last had an evidence review in 2010. In some cases minor changes have been made to the wording to bring the language and style up to date, without changing the meaning.

March 2019: Olanzapine has been removed from recommendation 1.7.4 because the clinical need can now be met by a licensed product. Additional information for this recommendation stated that haloperidol and olanzapine do not have UK marketing authorisation for delirium treatment. However, haloperidol does now have marketing authorisation, therefore, the additional information was removed because it no longer applies to haloperidol.

Minor changes since publication

October 2022: We added text to indicate that pulse oximetry may be less reliable in people with dark skin. We also added a link to the NHS patient safety alert on the risk of harm from inappropriate placement of pulse oximeter probes. See recommendation 1.4.6.

April 2022: We amended recommendation 1.7.4 to highlight the possible risks associated with using haloperidol for the acute treatment of delirium in older people.

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