Assessment and management of older patients with delirium in acute settings

Martha Dixon

Abstract

This article aims to assist nurses and nursing students to consider the presentation of delirium in older patients and the resulting assessment and nursing interventions required. It considers the three types of delirium: hyperactive, hypoactive and mixed. It also discusses potential causes of delirium. Older patients are at increased risk of delirium due to factors such as cognitive impairment, co-morbidities and acute illness. Nurses should be confident in the use of the 4AT score to assess patients with delirium. Use of the mnemonic PINCH ME is suggested to guide management of delirious patients in acute settings. Families of patients with delirium have emotional and other care needs and there are several ways in which nurses can meet them.

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Citation


Peer review

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Conflict of interest

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Aim and intended learning outcomes

The aim of this article is to assist nurses and nursing students to consider the presentation of delirium in older patients and the resulting assessment and nursing interventions required. After reading this article and completing the time out activities, you should be able to:

» Differentiate between the three types of delirium: hyperactive, hypoactive and mixed.
» Discuss the potential causes of delirium and understand why older patients can be at increased risk due to factors such as cognitive impairment, co-morbidities and acute illness.
» Express confidence in the assessment of patients with delirium using the 4AT tool (MacLullich et al 2014).
» Express confidence in the use of the mnemonic PINCH ME (Let’s Respect 2014) to guide nursing interventions.
» Discuss techniques to reduce delirium in acute settings.
» Identify the care needs of families and ways in which nurses can meet them.

Relevance to The Code

Nurses are encouraged to apply the four themes of The Code: Professional Standards of Practice and Behaviour for Nurses and Midwives to their professional practice (Nursing and Midwifery Council (NMC) 2015). The themes are: prioritise people, practise effectively, preserve safety, and promote professionalism and trust. This article relates to The Code in the following ways:

» The Code requires that nurses keep their knowledge up to date, assess patients’ needs and deliver treatment to the best of their abilities, based on the best evidence available and best practice. This article provides information on available options for assessing and treating delirium in older people.
» Information about appropriate management of delirium can be used to inform safe practice, which is integral to The Code.
» The Code emphasises the need for nurses to treat all people with dignity and respect. Appropriate assessment and management of delirium is essential to ensure the dignity and well-being of older people.
» The Code requires nurses to share with people, their families and their carers, as far as the law allows, the information they want or need to know about their health, care and ongoing treatment sensitively and in a way they can understand. This article highlights the importance of involving families in the care of patients with delirium, including supporting their needs for information.
**Introduction**

Delirium, previously called acute confusional state (National Institute for Health and Care Excellence (NICE) 2010a), is a common clinical syndrome. It is characterised by four distinct hallmarks (American Psychiatric Association (APA) 2013):

» Altered consciousness: newly sleepy, hyperactive or alternating states.
» Cognitive change: acute confusion.
» Acute onset: sudden change in the patient.
» Fluctuating course: unpredictable changing cognition and consciousness.

Delirium is a symptom of acute illness that is generally reversible and can have numerous causes (Reade and Finfer 2014). It has short-term distressing effects but can also lead to long-lasting physical and cognitive impairment and can even be fatal (NICE 2010a). It is important to identify it early and manage it as a multidisciplinary team (NICE 2010a); this approach could reverse up to 50% of delirium cases (Healthcare Improvement Scotland 2013).

Delirium is an acute medical emergency and older patients with dementia, severe illness or hip fracture are at greater risk (Healthcare Improvement Scotland 2015). It has a 20-30% prevalence on medical wards and affects up to 50% of older patients after surgery (NICE 2010a).

The poor clinical outcomes associated with delirium can be catastrophic if it is not recognised and treated quickly (van den Boogaard et al 2012). These may include a lengthened stay in hospital, increased incidence of pressure ulcers or falls, an increased risk of admission to long-term care and a higher risk of dementia (NICE 2010a).

In the worst cases, delirium can be fatal: there is an estimated 10% increase in the relative risk of mortality with each day of delirium (Pisani et al 2009). Early identification improves patient outcomes and reduces NHS costs significantly (NICE 2010b).

**TIME OUT 1**

Delirium in your care setting

Consider the care of patients you may have seen with new confusion, unpredictable behaviour or drowsiness. Is delirium routinely considered as a diagnosis? Would you feel confident in querying it with the medical team?

**Risk factors**

The pathophysiology of delirium in acute care varies according to cause. Patients who are withdrawing from drugs or alcohol can be delirious for several days. There are also clear links between sepsis and delirium (NICE 2010a, Sonneville et al 2013, Tsuruta and Oda 2016).

Advanced age (>65 years) and dementia are the two most common risk factors for delirium (Martins and Fernandes 2012). Other common risk factors for delirium are visual and hearing impairments, reduced mobility, dehydration, poor nutrition, polypharmacy and multiple co-morbidities (Saxena and Lawley 2009).

In older patients with hip fractures, delirium is the most common postoperative complication (Royal College of Physicians (RCP) 2016). Older people are more likely to have these risk factors than the general population and are therefore at greater risk of delirium (Martins and Fernandes 2012).

Although patients with dementia are at greater risk of developing delirium, it can often be missed due to uncertainty in differentiating between the symptoms of the two conditions (Mandebvu and Kalman 2015). Dementia causes a progressive decline in memory over a long period of time, usually months or years. Some types, such as Lewy body dementia, can have symptoms similar to delirium including a fluctuating course and altered perception (Miller 2008). Delirium is a sudden onset of

**TABLE 1. Characteristics of hypoactive and hyperactive delirium**

<table>
<thead>
<tr>
<th>Hypoactive</th>
<th>Hyperactive</th>
<th>Both types</th>
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<tbody>
<tr>
<td>» Withdrawal</td>
<td>» Hyperalert</td>
<td>» Sudden/acute onset</td>
</tr>
<tr>
<td>» Drowsiness</td>
<td>» Unpredictable</td>
<td>» Disorientation</td>
</tr>
<tr>
<td>» Sudden reduced mobility</td>
<td>» Shouting/screaming</td>
<td>» Hallucination</td>
</tr>
<tr>
<td></td>
<td>» Raised heart rate/respiratory rate</td>
<td>» Fluctuating cognition</td>
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(NICE 2000a, Banerjee et al 2011, Steiner 2011, Kalish et al 2014)

**BOX 1. Suggestive markers of delirium: changes in behaviour**

» Cognitive function: changes to baseline concentration, confusion and response time that are not explained by medical diagnosis. For example, a patient admitted with a stroke is expected to have a slower response time that may not be caused by delirium

» Perception: hallucinations, feeling of skin crawling and visual disturbance

» Physical function: reduced mobilisation, restlessness, agitation, changes in appetite and sleep pattern

» Social behaviour: changes in mood, unpredictable behaviour and lack of cooperation with requests

(Summarised from NICE 2010a)
change to the patient’s baseline; they may become markedly more confused, withdrawn or agitated compared with their normal level of function. This can make it possible to distinguish delirium from dementia although it can be clinically challenging, and the two often coexist (Peacock et al 2012).

When caring for a patient with dementia, family involvement is important to establish their baseline estimate of normal behaviour. If there is any uncertainty about whether a patient is presenting with delirium or dementia, delirium must be treated until it is ruled out (NICE 2010a).

The confusing and frightening environment of a ward can be a significant contributing factor to delirium (Jones et al 2012). Furthermore, when older patients are unwell, they can undergo multiple tests, scans and transfers between departments. These fluctuating and potentially rapid stimuli, combined with a perceived loss of control and dignity, can cause stress and emotional upset (Moore and Woodrow 2009).

**TIME OUT 2**
Stimuli in your care environment
Take ten minutes to think about the environment where you work. Make a list of all the different stimuli that could disorientate a patient. Examples include strange noises, several different healthcare professionals involved in care and going for scans.

### Presentation
There are three types of delirium: hyperactive, hypoactive and mixed. The characteristics of hyperactive and hypoactive delirium are shown in Table 1. Mixed delirium occurs when a patient unpredictably switches between a hyperactive and hypoactive state.

Patients who are sleepy and withdrawn while hypoactively delirious are less commonly diagnosed (Blazer and van Nieuwenhuizen 2012). Hypoactive delirium can be difficult to identify and differentiate from depression, withdrawal or other states. It is important to identify if the patient is undergoing an acute change and whether it fluctuates. These are two defining markers of delirium. If there is any concern that a patient may have delirium, a structured assessment should be carried out and the multidisciplinary team informed.

In all types of delirium, there will often be changes to vital signs; this can be an indication of impending deterioration and should be a cause for concern and escalation as appropriate (Benner et al 2011). These changes may include tachycardia, tachypnoea and high serum glucose (Moore and Woodrow 2009).

Everyone involved in a patient’s care should be vigilant for changes in behaviour such as those listed in Box 1. Concerns are often raised by family members who recognise that the patient is behaving differently. Not all the signs and symptoms discussed are definitive indicators of delirium. They must be considered in the light of the admitting diagnosis, medical history and any subsequent changes to the patient’s clinical status. A comprehensive multidisciplinary assessment and management approach triggered by behavioural changes can enable prompt diagnosis and improve patient outcomes (NICE 2010a).

### Assessment
Early identification and management of delirium are important to improving outcomes. NICE (2010a) recommends the use of

#### BOX 2. PINCH ME

- **Pain**
- **Infection/Intoxication**
- **Nutrition**
- **Constipation**
- **Hydration/Hypoxia**
- **Medication, for example antihistamines, steroids, opiates and sedatives**
- **Environment**

(Adapted from MacLullich et al 2014) ©2011-2014 MacLullich, Ryan, Cash

### Table 2. The 4AT

<table>
<thead>
<tr>
<th>TABLE 2. The 4AT</th>
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<tbody>
<tr>
<td>Alertness</td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Abbreviated Mental Test-4 (AMT4)</td>
</tr>
<tr>
<td>(Age, date of birth, place, current year)</td>
</tr>
<tr>
<td>Attention</td>
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<tr>
<td>(Months of the year backwards)</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Acute change or fluctuating course</td>
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(Adapted from MacLullich et al 2014) ©2011-2014 MacLullich, Ryan, Cash
a clinical assessment based on the Diagnostic and Statistical Manual of Mental Disorders (APA 2013) criteria. A commonly seen tool is the 4AT (MacLullich et al 2014) (Table 2). It is a rapid screening tool designed to assess patients for delirium and cognitive impairment and is validated in numerous studies (Lees et al 2013, Bellelli et al 2014, Hendry et al 2016, Kuladee and Prachason 2016, De et al 2017).

The 4AT is widely considered a good tool to use for assessing all older patients: it is the only one that incorporates brevity (it takes 2-3 minutes to complete), accessibility (it requires no training), the ability to test patients who are extremely agitated and a general cognitive screen (Bellelli et al 2014).

**Case study 1. 4AT**

Newly qualified nurse Mary arrives for a morning shift on a 5-bed surgical ward. During handover she learns that Mrs Jones, a newly admitted patient, has been trying to climb out of bed overnight and shouting at imaginary figures. Mrs Jones is 81 years old and has dementia, hypertension and osteoarthritis. She was admitted with a fractured hip after a fall at home. She had previously lived in a supported living environment with minimal support.

Mary is concerned about Mrs Jones’s confusion and goes to see her immediately. She calls Mrs Jones’s daughter Sarah to check if this behaviour is normal for her. Sarah is shocked to hear about her mother’s behaviour saying that she normally has some dementia-associated memory loss and occasional drowsiness. Due to this sudden change, Mary completes a 4AT with Mrs Jones:

- Alertness: Mrs Jones has been hyperalert overnight. **Score 4**
- AMT4: Mrs Jones states that she is 62 years old. She correctly states her birthday. She is unable to say where she is or what year it is – she states it is 1975. **Score 2**
- Attention: Mrs Jones starts to say the months of the year backwards but is unable to move past December. **Score 1**
- Acute change: As Mary had established a baseline from Sarah, she was able to state that Mrs Jones had had an acute change from her normal function. **Score 4**
- Mrs Jones’ total 4AT score was 11. Using this information, Mary was able to approach the doctors, therapists and ward manager to inform them that Mrs Jones was showing signs of delirium rather than delirium (MacLullich et al 2014).

**Case study 1 outlines how the 4AT might be used in practice.**

Nurses should feel equipped and confident in performing cognitive assessments for patients. As seen in the case study of Ms Jones, Mary’s ability to assess and identify delirium meant that she could escalate her findings with confidence to a doctor. The actions that she took were simple and could be taken by anyone; they are not time-consuming and could save lives (NICE 2010a). Cognitive assessment also informs a wide area of other nursing assessments including social care or discharge planning, preventing falls and individualised care plans (RCP 2016).

**Nursing interventions**

Delirium is more treatable the earlier it is recognised (NICE 2010a, Healthcare Improvement Scotland 2015). It is helpful to maintain consistency in allocation of nurses if possible so that they are aware of the patient’s baseline and are more alert to changes.

The involvement of family is also important to establish a baseline and find out if they have noted any changes in the patient (NICE 2010a).

Use of initiatives such as the This is Me booklet (Alzheimer’s Society 2017) can improve care for patients with dementia and reduce the risk of delirium (Royal College of Psychiatrists (RCPsych) 2013). This is Me is a simple form that can be completed by patients or families, which details patients’ beliefs, habits, memories and other important aspects of their character (Alzheimer’s Society 2017).
Healthcare workers can then use the completed form and familiar items to reorientate the patient and promote a sense of trust, belonging and well-being.

NICE (2010a) proposes several interventions to manage patients with delirium. Minimising the effect of the environment in an acute care setting is difficult but efforts can be made to do so. Distinctive zones in wards and contrasting colours for equipment can also help patients feel safe and confident in their environment (Moore and Woodrow 2009). Providing a 24-hour clock, a calendar and clear signage can help address cognitive impairment and disorientation (NICE 2010a). It is important to avoid moving the patient to a new area of the hospital unless necessary.

Promoting sleep also reduces the risk of delirium. Noise is the most disturbing factor for patients at night (Bihari et al 2012, Beltrami et al 2015); a conscious effort by ward staff to reduce noise at night is vital. Another helpful nursing practice is to cluster care to allow uninterrupted sleep periods (Redeker and McEnany 2011).

Physiological issues such as dehydration, hypoxia and infection should be addressed as well as encouraging mobilisation, optimising pain control and adequate nutrition (NICE 2010a). These nursing interventions could be achieved by the use of a ‘dementia and delirium bundle’ for at-risk patients. This bundle could include charts such as fluid balance, stool, comfort rounds to prompt oral intake, nutrition charts, turning care plans and pain assessment tools (NICE 2010a).

A mnemonic that nurses can use when looking after patients with signs of delirium is PINCH ME (Let’s Respect 2014) (Box 2). It prompts consideration of the root causes of delirium, which is helpful as identifying these can lead to quicker interventions and treatment (Pryor and Clarke 2017). PINCH ME forms part of the nursing dementia and delirium bundles in some trusts. Case study 2 is an example of how PINCH ME can be used in practice.

The Hospital Elder Life Program (HELP) has been successful in reducing rates of delirium in the US (Inouye et al 2000, Strijbos et al 2013). It aims to prevent delirium before it develops by targeting patients older than 70 who have been in hospital for 48 hours or less and have not developed delirium. Volunteers visit patients up to three times a day to provide stimulation, companionship and reorientation. Its use was found to prevent delirium in up to 96% of patients (Boodman 2015). The NICE (2010a) delirium guideline was partially based on HELP (Yue et al 2014); a similar programme could be developed in the NHS using dementia volunteers who already assist with care in many acute trusts.

### TIME OUT 4

**Changes to practice**

Reading the case study outlining Mary’s care of Mrs Jones, think of two or three changes you could make to your own practice to prevent or manage delirium in older patients

**Are there wider changes that could be made to your work environment?**

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**Case study 2. PINCH ME**

The following is an excerpt from Mary’s shift notes. She used PINCH ME to guide her care of Mrs Jones

**Pain:** Mrs Jones appears to be in pain at times. As she was not able to communicate consistently, her pain was assessed using the Abbey pain scale (Abbey et al 2004). Painkillers were given and the pain team was contacted to review the patient.

**Infection:** No signs of infection currently – as assessed on ward round.

**Nutrition:** Mrs Jones is eating very small amounts. She appears malnourished – unable to weigh today as she is in too much pain to be hoisted out of bed. Food chart maintained and patient referred to dietitian.

**Constipation:** Mrs Jones has not opened her bowels since theatre yesterday. Laxatives started today.

**Hydration/hypoxia:** Mrs Jones is receiving intravenous fluids as she is not drinking well. Her catheter is draining more than 0.5mL/kg/hr (Resuscitation Council (UK) 2015), passing approximately 40-50mL of urine hourly. Hourly fluid balance chart maintained. \(\text{SpO}_2\) maintained >94% throughout the day on room air.

**Medication:** Mrs Jones’ team have reviewed her medications today and temporarily stopped any unnecessary medications to minimise the risk of confusion and unwanted side effects.

**Environment:** There is a 24-hour clock visible in the bay and reorientation aids including the names of the hospital and her nurse. Familiar objects from home have been brought in to promote a sense of safety and security. The bay is free of clutter and well-lit and the call bell is next to her.

These interventions could be seen as routine nursing care. They are not revolutionary or difficult. Note that appropriate and prompt escalation is important, for example, Mary asked the pain team to review Mrs Jones.
Involving and supporting families

Involvement of families in the planning and delivery of care can result in better overall outcomes for patients (Benner et al 2011, Barry and Edgman-Levitan 2012, Royal College of General Practitioners 2014). Such involvement should begin as soon as the patient is admitted as it may bear implications for discharge planning (Holland et al 2012). Family involvement can also result in fewer readmissions to hospital (Cloonan et al 2013, Ketterer et al 2016).

Psychological support for patients and relatives is becoming increasingly important in nursing (Currid 2012, NMC 2015). Some studies suggest that caring for families may lead to ‘burnout’, excessive levels of stress and post-traumatic stress disorder for nurses (Bailey et al 2011, Bridges et al 2013). Lack of support for nursing staff appears to be related to poor support from other healthcare workers, inadequate resources and education gaps (Coyne et al 2011). For all nurses caring for older patients, regular training updates and support in practice are crucial (Barker 2016).

Acute wards are busy, vibrant environments with several machines and devices that can be frightening for family members who are already concerned for the patient (Davidson et al 2012). If families see a loved one undergoing delirium, it can be highly distressing; the patient can be disorientated, possibly experiencing hallucinations and delusions or unable to recognise relatives (Schiemann et al 2011, Boot 2012, Jones and Pisani 2012).

**TIME OUT 5**

**Involving families**

- Are families encouraged to give input in discharge planning in your clinical area?
- Are there ways in which this input could be done more effectively?

**References**


Alzheimer’s Society (2017) This is Me. www.alzheimers.org.uk/download/downloads/6/3423/this_is_me.pdf (Last accessed: 13 March 2018.)


Nurses should provide correct information that is sensitively divulged while maintaining confidentiality (Adams et al 2014, NMC 2015). Providing information leaflets for families on managing delirium is an important part of care (NICE 2010a). The RCPsych (2013) produces a helpful leaflet, which is available free online.

**Conclusion**

Older patients, particularly those with a pre-existing cognitive impairment, acute illness or trauma, are at high risk of developing delirium. Delirium is characterised by a sudden change in the patient’s cognition, behaviour or mood and follows a fluctuating course. It can now be diagnosed relatively easily using a multidisciplinary assessment such as the 4AT (MacLullich et al 2014). The use of the PINCH ME mnemonic (Let’s Respect 2014) approach enables high quality care and improves patient outcomes.

**TIME OUT 7**

**The Code**

Nurses are encouraged to apply the four themes of The Code (NMC 2015) to their professional practice. Consider how assessment and management of delirium relates to The Code.

**TIME OUT 8**

**Reflection**

Now that you have completed the article you might like to write a reflective account as part of your revalidation.

Kuladhe S, Pratichason T (2016) Development and validation of the Thai version of the 4+1% Test for delirium screening in hospitalized elderly patients with acute medical illnesses. Neuropsychiatric Disease and Treatment. 12, 437-443.


Assessment and management of older patients with delirium in acute settings

TEST YOUR KNOWLEDGE BY COMPLETING THIS MULTIPLE-CHOICE QUIZ

1. A hallmark of delirium is:
   a) Acute onset
   b) Defined course
   c) Coherent state of consciousness
   d) Chronic onset

2. After surgery, delirium affects what percentage of older patients:
   a) 10%
   b) 30%
   c) 50%
   d) 65%

3. A common risk factor for delirium is:
   a) Age 65 years or older
   b) Dementia
   c) Dehydration
   d) All of the above

4. A characteristic of hypoactive delirium is:
   a) Raised heart rate
   b) Withdrawal
   c) Shouting
   d) Screaming

5. A clinical assessment of a patient with delirium can be made using:
   a) 4AT
   b) PINCH ME
   c) Hospital Elder Life Program
   d) This is Me booklet

6. A score of 4 on the 4AT suggests the patient has:
   a) Possible delirium with or without cognitive impairment
   b) Possible mild cognitive impairment
   c) No severe cognitive impairment
   d) No delirium

7. Staff can minimise the adverse environmental effects of busy acute wards by:
   a) Encouraging mobilisation
   b) Prompting intake of drinks
   c) Providing patients with earplugs at night
   d) Optimising pain control

8. In the mnemonic PINCH ME, ‘M’ represents:
   a) Mobilisation
   b) Multidisciplinary
   c) Medication
   d) Malnourished

9. Involvement of families in the care of patients with delirium is important because they can:
   a) Provide a baseline of patients’ usual behaviour
   b) Highlight if patients’ behaviour has changed
   c) Provide information about the patient that can promote person-centred care
   d) All of the above

10. A clinical outcome of delirium is:
    a) Reduced hospital stay
    b) Death
    c) Decreased risk of admission to long-term care
    d) Reduced risk of dementia

How to complete this quiz

This multiple-choice quiz will help you test your knowledge. It comprises ten multiple choice questions broadly linked to the previous article. There is one correct answer to each question.

You can read the article before answering the questions or attempt the questions first, then read the article and see if you would answer them differently.

When you have completed the questionnaire, cut out this page and add it to your professional portfolio. You can record the amount of time it has taken you to complete it.

You may want to write a reflective account. Visit rcni.com/reflective-account

Go online to complete this multiple-choice quiz and you can save it to your RCNi portfolio to help meet your revalidation requirements. Go to rcni.com/cpd/test-your-knowledge

The answers to this quiz are: a, c, d, b, a, a, c, c, d, b

This activity has taken me minutes/hours to complete. Now that I have read this article and completed this assessment, I think my knowledge is:

Excellent ☐ Good ☐ Satisfactory ☐ Unsatisfactory ☐ Poor ☐

As a result of this I intend to: ___________________________________________________________
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