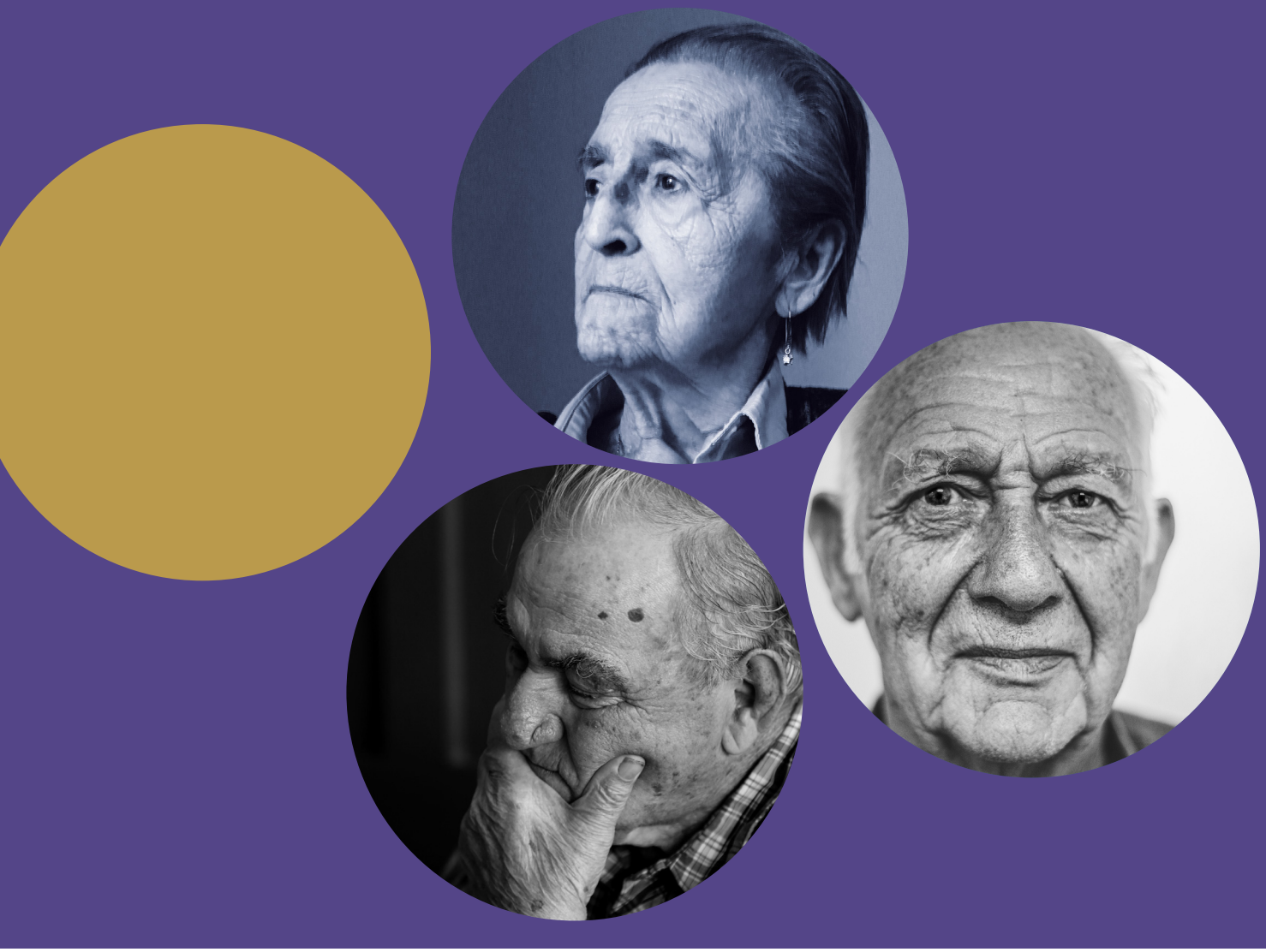
Assessment of delirium in hospital for people with dementia



Spotlight audit 2017–2018

DEMENTIA NATIONAL AUDIT OF DEMENTIA CCQI

HQIP Healthcare Quality Improvement Partnership

RC PSYCH ROYAL COLLEGE OF PSYCHIATRISTS

Audit governance

The National Audit of Dementia is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement in patient outcomes and to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies. A full list of NCAPOP projects is available on the HQIP website (www.hqip.org.uk/national-programmes).

The National Audit of Dementia (NAD) is managed by the Royal College of Psychiatrists' Centre for Quality Improvement (CCQI), working in close partnership with professional and service user representatives. We work with the following professional bodies, voluntary sector providers and campaigning organisations:

- Royal College of Psychiatrists
- Royal College of Nursing
- Royal College of Physicians
- British Geriatrics Society
- Alzheimer's Society
- Dementia Action Alliance
- Age UK, and
- John's Campaign.

Representatives from partner organisations collaborating in the audit form our steering group, together with representatives of people living with dementia and carers, and the audit project team. See www.nationalauditofdementia.org.uk for a list of steering group members.

Conflicts of interest

Members of the steering group are asked to declare any conflicts of interest at the outset and prior to each meeting. This is included as a standing item on the agenda. Should a conflict of interest affecting the conduct or results of the audit be declared, the member may be asked to absent themselves from all or part of the discussion, at the meeting and subsequently.

Contents

Dementia in general hospitals

Dementia is a term used to describe a range of symptoms caused by diseases which damage the brain, such as Alzheimer's disease or a series of strokes. Symptoms vary extensively but may include memory loss and difficulties with thinking, language and problem-solving, as well as changes in mood and behaviour.[1] Dementia is most prevalent in people over the age of 65 and the likelihood of developing dementia increases with age.

The National Audit of Dementia (care in general hospitals) (NAD) is commissioned by the Healthcare Quality Improvement Partnership on behalf of NHS England and the Welsh Government as part of the National Clinical Audit Programme. NAD examines aspects of the care received by people with dementia in general hospitals in England and Wales, and produces national and local reports to support hospitals to identify areas for quality improvement and share good practice, helping to improve outcomes for patients.

NAD has carried out three rounds of audit, reporting in 2011, 2013 and 2017. This **spotlight audit on delirium** has been carried out to look in more detail at an area where hospitals have seemed to be underperforming and to clarify inconsistencies in the data.

Who should read this report

In line with HQIP *Reporting for Impact Guidance*,[2] this report is designed to inform:

- **people who receive care or provide care for someone** – people with dementia and their families
- **people involved in providing care** – professional staff, managers and trust boards working in general hospitals in England and Wales
- **people involved in commissioning care** – NHS England, Welsh Government, clinical commissioning groups
- **people who regulate care** – including the Care Quality Commission, clinical audit and quality improvement professionals.

Data collection and reporting

Data for this round of audit were collected between September and November 2017.

1. Alzheimer's Society (2018a).

2. HQIP (2016).

Service user and carer participation

Representatives with experience of living with dementia or caring for someone who has dementia sit on the steering group, which advises on all aspects of the project, together with representatives from the organisations listed under 'Audit governance' on the inside front cover.

Data collection and anonymity

No patient identifiable data were collected for the audit of casenotes.

Further information

Audit reports, data collection tools and further information can be found on the NAD website (www.nationalauditofdementia.org.uk); see also p. 18 of this report (References).

Summary and key findings

Delirium is a serious condition defined as 'a common clinical syndrome characterised by disturbed consciousness, cognitive function or perception. [...] it has an acute onset and fluctuating course',[3] and is associated with worsened outcomes as a result of hospitalisation. People with dementia are at a higher risk of developing delirium. Therefore, all people with dementia admitted as emergencies to hospital should be screened for delirium and receive a full clinical assessment where evidence of the condition is found.

The National Audit of Dementia (care in general hospitals) has carried out three rounds of audit to date. The audit of casenotes included questions on delirium assessment in rounds 2 and 3 (reporting in 2013 and 2017). Following the third round of audit, the NAD project team carried out quality assurance checks and analysed feedback from participating sites. The team concluded that audit questions about delirium might be inconsistently interpreted, both within and between hospital sites. This could be because hospitals have not established clear guidelines on what constitutes a delirium assessment, with the consequence that the data reported might not give a true picture of the number of assessments actually carried out.

Following round 3, hospitals were asked to submit data for a 'spotlight audit' focusing on the identification and assessment of delirium. The aim was to look at variance in interpretation and to gain more accurate knowledge of the extent to which assessments are not performed. All hospital sites eligible to participate in round 3 of the audit were invited to submit data: 20 casenotes each. As the aim of the spotlight audit was to define variation and provide better guidance for future comparison, there was no need for sites to submit sufficient cases to permit comparison between site results. Out of 199 sites, 117 participated (59%) and 2228 casenotes were analysed (after data cleaning).

Patients whose notes were audited all had a diagnosis of dementia and were emergency admissions to acute care, and were therefore at a very high risk of delirium.

Round 3 of the audit found that 44% of casenotes of people with dementia contained evidence of an initial assessment or screen for delirium. Of these, 85% had received a full clinical assessment. In the spotlight audit sample 51% casenotes showed that an initial assessment was undertaken and of these 84% had a follow-up assessment. The spotlight audit tool went on to ask a number of questions which explored the different ways in which newly admitted patients might be initially assessed or screened for delirium. These questions were not mutually exclusive and there was overlap between different responses.

Key findings from the spotlight audit are summarised overleaf.

3. NICE (2010).

Key findings

⌦ A high proportion of patients with dementia admitted as emergencies to hospital did not receive an initial assessment for delirium, even after adjustment

After taking account of the greater number of initial assessments identified by the additional questions included in the questionnaire, we found that 32% of patients with dementia admitted to hospital as an emergency did not have an initial assessment for delirium. At just under one-third of the sample, this remains a very high proportion of people at high risk of delirium and requires improvement. The importance of ensuring that people with dementia who are acutely admitted to hospital are screened for delirium must continue to be emphasised.

⌦ Questions about initial screen or assessment for delirium are inconsistently interpreted

Variation is apparent in the approach hospitals take to carrying out and recording the assessment of delirium, as questions about an initial screen for delirium are inconsistently interpreted. In 219 casenotes (10%), auditors reported no screen, but questions about specific assessments found that it had taken place. Following adjustment allowing for responses for the follow-up questions, results for individual hospitals improved by an average of 19%,[a] with individual hospitals seeing increases ranging from 0 to 64 percentage points.

⌦ Over a quarter of patients have no confusion or cognitive tests recorded

On the whole, 27% of patients received no confusion or cognitive tests at all, as well as no initial screen for delirium. Cognitive assessment is an important part of comprehensive assessment which all patients with dementia admitted acutely should receive.

⌦ Delirium not included in discharge correspondence

Only 48% of patients whose casenotes recorded possible delirium at admission or after initial screening had this recorded on their discharge letter or summary. All patients who have delirium during admission to hospital should have this information communicated to their general practitioner (GP) and primary care team on discharge.

a. See Fig. 3 on p. 15.

Recommendations

1. People with dementia admitted to hospital for acute care must always be assessed for delirium.
2. The medical and nursing directors for each trust should create procedures to be implemented across the hospital for:
   a assessing, recording and following up people with a diagnosis of delirium
   b ensuring that all staff likely to treat people with delirium have appropriate training on how to recognise, investigate and manage people with delirium, including the different types/clinical presentations of delirium and approaches for managing them
   c ensuring effective communication about delirium throughout admission and to GPs on discharge.
3. The NAD project team should immediately amend questions and guidance in NAD round 4 in order that
   a hospitals can see what assessment tools or other processes are in use, and
   b false negatives are excluded from the results reported for round 4. (See Next steps, p. 17.)

Introduction

Background

Delirium is defined by the National Institute for Health and Care Excellence (NICE) as 'a common clinical syndrome characterised by disturbed consciousness, cognitive function or perception, which has an acute onset and fluctuating course'.[4] It has a rapid onset and is a serious condition, associated with worsened outcomes as a result of hospitalisation, including poorer treatment outcomes, loss of function, permanent move to residential care, and death.[5]

People with dementia are at a higher risk of developing delirium, and the risk increases with the progression of dementia. Frailty, being over 65 years old and having multiple health conditions can all heighten the risk of developing delirium.[6]

It can be difficult to distinguish between delirium and dementia. When a person is known to have dementia, delirium can be missed and symptoms can be attributed to worsening of the dementia. NICE recommends that all older people presenting with confusion should be treated for delirium unless this has been ruled out.[7]

Delirium and the National Audit of Dementia

The first round of the National Audit of Dementia (NAD) did not include specific questions on delirium, although many of the standards relating to assessment and environment are also relevant to managing delirium.

The NICE guideline *Delirium: prevention, diagnosis and management*, sets out a two-stage approach to detecting and diagnosing it:

1 assessing for changes/fluctuations in behaviour at presentation in people at risk of delirium, followed by
2 a full clinical assessment to confirm the diagnosis where these changes are present.[8]

As people with dementia have a higher risk of developing delirium, the initial and follow-up assessments were incorporated into the audit of casenotes of people with dementia carried out in rounds 2 and 3 of NAD.[9] The results from these rounds of audit are shown in Table 1.

4. NICE (2010).
5. Davis et al. (2017).
6. Alzheimer's Society (2018b).
7. NICE (2010).
8. NICE (2010).
9. Royal College of Psychiatrists (2017).

Table 1. Questions on delirium screening and assessment from rounds 2 and 3 of NAD		
	Round 2	Round 3
Questions from casenote audit	% Num/Den Median (IQR)	
Has an assessment been carried out for recent changes or fluctuation in behaviour that may indicate the presence of delirium?		
A: Yes, and there were indications delirium may be present	22% 1747/7986 20% (10–30%)	26% 2603/10047 24% (14–36%)
B: Yes, but there were no indications that delirium may be present	16% 1253/7986 13% (5–23%)	19% 1863/10047 15% (6–25%)
If A: Has the patient been clinically assessed for delirium by a healthcare professional? (Yes/No)		
Yes	86% 1497/1747 89% (72–100%)	85% 2220/2603 90% (78–100%)

Data for round 3 of the audit were collected in 2016. A total of 44% (4466/10047) of casenotes showed that an initial assessment for delirium had been carried out.[10] Where there were indications of delirium, 85% (2220/2603) of casenotes showed a clinical assessment for delirium.

Quality assurance visits in round 3

Round 3 of the audit incorporated five quality assurance visits to randomly selected participating sites. Our aim was to independently re-audit 10 randomly selected casenotes of the 50 casenotes each site submitted for audit. Dr Oliver Corrado, the consultant physician to the audit, carried out the checks and found some variation in interpretation of the delirium questions. In 14 out of the 50 records checked in total, the questions on delirium screen or assessment had been answered 'no' where 'yes' could have been answered. This was because some sites answered that an initial assessment had been carried out only if a specific local protocol, designed to improve awareness and management, had been followed, whereas others had permitted themselves more leeway in interpreting the notes. All submissions had been made in good faith and were thought to be legitimate within the broad scope of the questions, and were therefore allowed to stand. However, the difference in interpretation locally led Dr Corrado and the project team to question whether it was possible to properly compare the results derived from the existing questions.

The steering group took this into account when preparing key messages for round 3 of the audit and focused on the proper recording of delirium assessment to highlight the results. These appeared very poor (Table 1), with less than 50% of the casenotes sampled apparently containing any screen for delirium. The steering group also approved an immediate spotlight audit to collect further information about how hospitals were approaching assessment of delirium in people with dementia. The steering group considered it urgent to keep up the focus on this area, which almost all hospitals had selected as a key area for improvement for discussion in the workshops following local reporting, and also to discern whether changes to this part of the casenote audit would be required for clearer comparative reporting in round 4 of the NAD (due in spring 2019).

11. The total in Table 1 is 45% as a result of rounding.

Methodology

Development and structure of the audit tool

The joint clinical advisers to the audit, Dr Corrado and Ms Beth Swanson, consultant nurse, provided the content of the tool and supervised the editing. The tool consisted of 30 questions grouped in three parts.

- Section 1 collected demographic information about the patient whose notes were audited (see Appendix A; NAD round 3 demographic data are shown for comparison).
- Section 2A included the questions on delirium as they had been presented in round 3, with an additional question to pick up on casenotes where the possible presence of delirium had already been noted at admission, and therefore it may not have been thought necessary to carry out screening prior to clinical assessment.
- Section 2B contained questions designed to elicit the assessments actually performed (including cognition with relation to delirium), and a range of investigations and physical examinations. (See audit tool on the NAD website).[11]

11. https://www.rcpsych.ac.uk/workinpsychiatry/qualityimprovement/nationalclinicalaudits/dementia/nationalauditofdementia/auditmaterials/thirdroundofaudit.aspx

Tool content

Sampling criteria for patient casenotes to be audited were similar to those used for NAD round 3, but with the additional proviso that all patients should have been admitted as an emergency. This eliminated casenotes of elective admissions, and enabled section 2 questions to focus on the admission period and the 24 hours following. The demographic and contextual information collected in section 1 is shown together with the same information collected for round 3 (see Appendix A). It can be seen that the two samples of casenotes are very similar in terms of characteristics and causes of admission.

Section 2A repeated questions used in round 3 about delirium assessment, with important additions.

1 A timescale range was included (within the first 24 hours of admission/beyond this time/unknown).
2 An additional question asked whether delirium was recorded during the initial presentation or within the first 24 hours. This allowed for the possibility that the initial screening stage did not take place because possible symptoms of delirium had already been noted.

Questions about initial assessment and clinical assessment remained routed as in round 3: only for casenotes where the initial assessment

or screen did detect indications of delirium was the auditor required to answer about full clinical assessment. This was designed to enable data comparison between spotlight audit and round 3 audit.

Questions in section 2B were developed for the spotlight tool and designed to query inconsistency in interpreting and responding to section 2A questions. In practice, there are different approaches and assessment tools in use to detect and diagnose delirium. Where there is no whole-hospital approach or protocol, these may vary between patients in the same hospital, making it more difficult for auditors to determine what has been done.

Questions on delirium assessment covered simple initial assessments, such as the Single Question in Delirium (SQiD), and standardised confusion assessments which can confirm delirium. A separate question asked about standardised cognitive assessment such as Abbreviated Mental Test Score (AMTS) or AMT4 (4-item Abbreviated Mental Test). These assessments are used to determine whether cognitive impairment may be present, which can occur in both dementia and delirium. Cognitive impairment in delirium may improve with appropriate treatment.

Assessment questions also asked for details of the investigations and physical examinations carried out, and details of any nursing assessments recorded. The tool also requested information about discharge, focusing on whether a cognitive test was repeated before discharge and whether any delirium which was noted during the initial presentation had been recorded on the discharge letter or summary (this includes the notification to GP- and other community-based services).

Participation and sampling

All hospital sites eligible to participate in round 3 of the audit were invited to submit data. Each site was asked to submit 20 casenotes. As the aim of the spotlight audit was to define variation and provide better guidance for future comparison, there was no need for sites to submit sufficient cases to permit comparison between site results. Out of the 199 sites, 117 participated (59%).

Selection criteria for the casenotes were the same as for round 3 of the audit, with the added proviso that all casenotes should be emergency admissions. The casenotes were of people with dementia identified following discharge in April 2017 using ICD-10 coding (see sampling guidance for round 3).[12] Participating sites were asked to order the notes by date of discharge and submit the first 20 (Table 2).

Table 2. Sites and number of casenotes submitted

Sample size	Number of hospitals (*n*=117)
>20 casenotes	92
10–20 casenotes	21
<10 casenotes	4

Data analysis

Results for each question in the tool were analysed separately. The full breakdown of data is given in Appendix B.

Findings were compared and further analysed to discern variation in what was interpreted as 'assessment', and to determine whether the totals reported by each hospital might require adjustment for a more consistent picture.

12.Royal College of Psychiatrists (2016).

Results

Part 1. Comparison of results between questions

Questions on delirium in NAD round 3 and spotlight audit: comparison

It was thought likely that findings between NAD round 3 casenote audit and the spotlight audit would be similar. Casenotes sampled were from a period prior to round 3 reporting and therefore not affected by changes to practice resulting from national or local results. Q15 repeated the question on an initial delirium assessment or screen from round 3 of the audit, and Q16 repeated the question on full assessment (Table 3).

The fact that these results are similar suggests that these questions were interpreted and answered in a similar way to those in NAD round 3 data-set.

A question was included at the end of the spotlight audit tool to ascertain if any changes had been made to these responses after answering the additional questions about specific assessments in the audit tool. Only 18 casenotes (0.7%) had any changes recorded, indicating that the additional questions had no impact on how the original questions were reported on.

In total, 51% of casenotes in the spotlight audit data-set had the initial assessment or screen for delirium.

Table 3. Spotlight audit results for delirium compared with the same questions in round 3

Question	National (spotlight) % Num/Den Median (IQR)	Round 3 NAD
Has an assessment been carried out for recent changes or fluctuation in behaviour that may indicate the presence of delirium?		
A. Yes, and there were indications delirium may be present	33% 730/2228 30% (20–45%)	26% 2603/10047 24% (14–36%)
B. Yes, but there were no indications that delirium may be present	18% 406/2228 15% (5–29%)	19% 1863/10047 15% (6–25%)
C. No assessment has been carried out	49% 1092/2228 50% (30–67%)	56% 5581/10047 58% (40–73.1%)
If A: Has the patient been clinically assessed for delirium by a healthcare professional?		
Yes	84% 616/730 90% (73–100%)	85% 2220/2603 90% (78–100%)

Is there evidence that screening for delirium is not being carried out because delirium is already noted on admission?

Section 2A of the tool included a question (Q14) about possible delirium noted during the early stages of admission, to ascertain whether this could account for the casenotes where auditors said there had been no initial assessment or screen (Table 4).

Table 4. Total screened taking into account delirium recorded during admission

Q14. Was delirium or acute confusion recorded during the initial presentation or within 24 hours of admission?	National (spotlight) % (Num/Den)
Yes	42% (945/2228)
Total with delirium recorded during presentation and/or had initial screen carried out	62% (1371/2228)

There is some overlap for the results of questions on initial screening for delirium (Q15) and delirium recorded during initial presentation (Q14) (see Fig. 2, p. 15). In some cases, the fact that delirium was already noted may have been taken in lieu of an initial test or screen. This would increase the proportion of patients screened in the national data-set to 62%.

How did findings on an initial screen or assessment for delirium compare with the detailed questions about delirium screening assessments?

An initial assessment to detect possible signs of delirium can take various forms, which can include:

1 SQiD (Do you think [name of patient] has been more confused, sleepy or drowsy lately?) or a similar question usually put to a family member/carer.
2 Other evidence gathered from family or carer.
3 A standardised confusion assessment (such as Confusion Assessment Method (CAM) or 4AT rapid assessment test for delirium and cognitive impairment).[13,14]
4 Other assessments used (free text option included in the audit).

Section 2A of the tool asked if an assessment had been carried out for recent changes of fluctuations in behaviour that may indicate the presence of delirium – this is the initial assessment or screen for delirium (Q15).

Section 2B of the tool asked about evidence of the Single Question in Delirium (Q17), or of a standardised confusion assessment method such as CAM or 4AT (Q19). Results are given in Table 5.

For 219 of the casenotes, auditors had answered that there was no initial assessment/screen, although they then reported that either SQiD or a standardised confusion assessment had taken place. There is a slight overlap with the total in Table 5, where it had been answered that an initial screen had taken place and/or delirium had already been noted. However, taking all these results together, the total proportion of patients screened increases to 68%.

Cognitive tests

Section 2B also asked about a standardised cognitive test such as AMTS or AMT4 (Q20, Q21). Such tests may be incorporated within delirium assessments (e.g. AMT4 is part of the 4AT), but used on their own they are not intended to constitute an initial assessment for delirium. For the purposes of this analysis, cognitive test results have not been used to make adjustments to the percentage of patients screened for delirium.

Results show that patients who were screened were more likely to also receive a cognitive test (Table 5).

13. https://www.the4at.com
14. https://www.guysandstthomas.nhs.uk/resources/our-services/acute-medicine-gi-surgery/elderly-care/cam-diagnostic-algorithm.pdf

Table 5. National results – initial assessment/screen compared with SQiD,[a] confusion and cognitive assessments			
	Screen/initial assessment	No screen/initial assessment	Totals
Casenote shows SQiD and/or confusion assessment	60% (676/1136)	20% (219/1092)	40% (895/2228)
Casenote shows cognitive assessment (standardised or other)	64% (721/1136)	34% (374/1092)	49% (1095/2228)
a. SQiD, Single Question in Delirium			

Table 6. Details of assessment questions compared with occurrence of full clinical assessment for delirium		
	National (spotlight)	
	Clinical assessment for delirium	
Undertaken within 24 hours of admission	Yes (n=616)	No (n=114)
Full blood count	394 (64%)	62 (54%)
Urea and electrolytes	612 (99%)	113 (99%)
Glucose	609 (99%)	113 (99%)
Liver function tests	399 (65%)	59 (52%)
Calcium level	496 (81%)	88 (77%)
C-reactive protein	533 (87%)	96 (84%)
Blood cultures	400 (65%)	65 (57%)
Urinalysis/mid-stream urine specimen	190 (31%)	30 (26%)
Chest X-ray	553 (90%)	103 (90%)
If a full physical examination was carried out, which of the following were fully examined:		
Cardiac examination	579 (96%)	110 (97%)
Respiratory examination	590 (98%)	111 (98%)
Abdominal examination	580 (97%)	109 (97%)
Neurological examination	427 (71%)	74 (66%)

How did findings about the follow-up full clinical assessment compare with blood tests and physical assessments carried out?

In casenotes where there had been an initial assessment which found signs of delirium, the tool asked whether a clinical assessment by a healthcare professional had taken place (Q16).

If delirium is suspected, a full clinical assessment must be undertaken to help confirm the diagnosis and try and establish a cause. NICE guidelines recommend that initial management of diagnosed or suspected delirium should include identifying and managing the underlying cause or combination of causes. During or following a clinical assessment, a range of further investigations and tests may be required to determine the cause of the delirium.

Section 2B of the tool asked about a range of investigations and assessments (Q22, Q23) and compared these with the results for Q16 (Table 6).

Of patients whose initial assessment found indications of delirium (n=730), 16% (n=114) did not have a full clinical assessment for delirium. However, the range of tests and examinations appears to be as extensive for this group, with small differences apparent between the group where a full clinical assessment for delirium was recorded as carried out, and the group where this was not recorded. It is therefore not possible to say in what ways these assessments contribute to the diagnostic process. This range of assessment would be generally carried out as good practice, but it does not in itself constitute a delirium assessment.

What proportion of the sample have no recorded assessment relating to either confusion or cognition?

Over one-quarter of patients in this data-set (27%) did not receive a SQiD, a confusion assessment or any other cognitive assessment (Table 7). This includes those for whom only a corroborative history was noted. For the analysis, we have assumed that history gathered from family or carers may not have included information related to delirium and on its own cannot constitute assessment.

Table 7. Casenotes with no recorded assessment for confusion or cognition

	National (spotlight)
No initial screen, SQiD, confusion or cognitive test	27% (593/2228)
(Of above) Corroborative history only	60% (357/593)

Time to complete delirium assessment

The spotlight audit questions focused on the initial admission period, and we included questions on the time taken to complete assessment. Where the question on initial assessment (Q15) was answered that there were indications of delirium, a follow-up question (Q16) asked if a clinical assessment had been carried out and within what time frame. NICE guidelines recommend that interventions to prevent delirium should include assessment of people at risk for clinical factors contributing to delirium within 24 hours of admission where delirium is suspected or diagnosed. A multicomponent intervention plan should then be instigated based on the individual's needs.

The questions on timescale were included to discern whether there were wide differences in the time frame to complete clinical assessment. All responses indicating that there had been a full assessment were included in analyses (Fig. 1).

In patients in whom signs of delirium had been detected, 84% (625/744) had a full clinical assessment. Almost 90% (549/622) took place within 24 hours and a further 4% (23/622) within 48 hours (Fig. 1). For the remaining 8% (50/622), timescale to assessment recorded was longer or is unknown.

Discharge information and delirium

NICE recommends ensuring that information about delirium is communicated to primary care

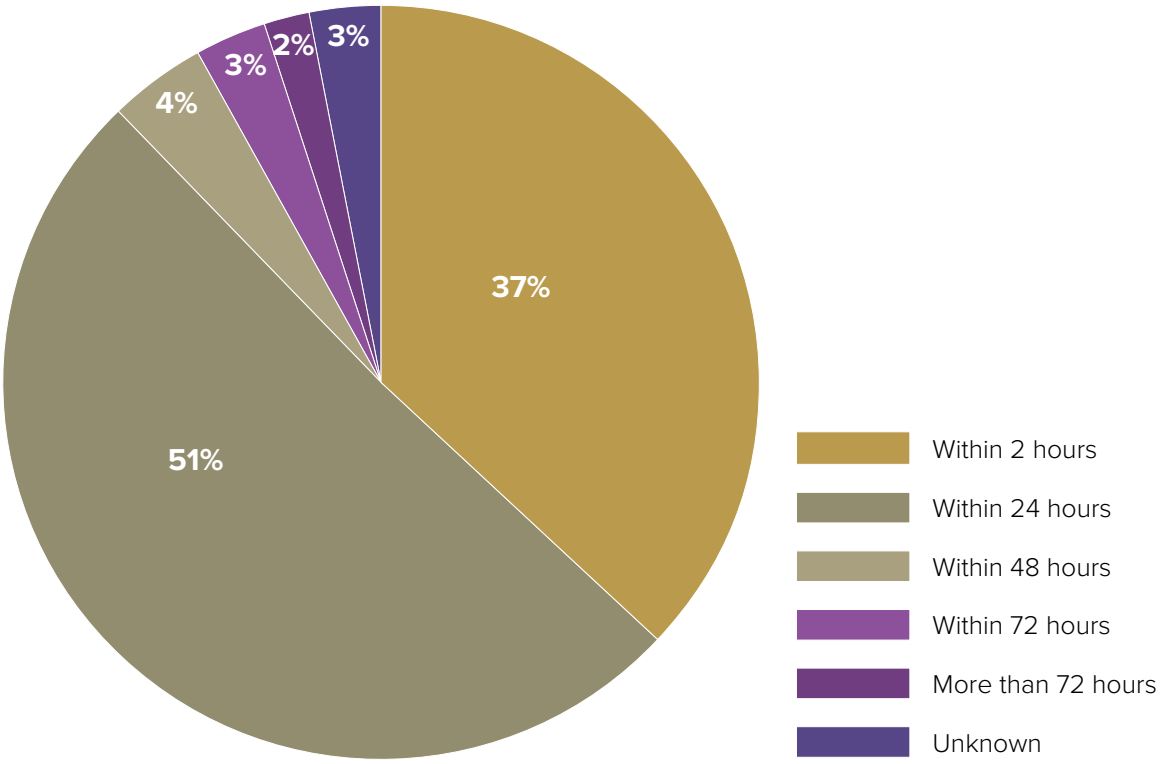


Fig . 1. Time to complete clinical assessment for delirium

teams on discharge so that the patient receives adequate follow-up care.[15] Information about the presence, cause and symptoms of delirium and the impact it had on the patient's cognition is very important in their ongoing care – delirium can have very serious health consequences, and decision-making about future place of residence can be affected if recurrence of delirium is missed.

The audit tool included a question asking whether delirium or acute confusion during the initial presentation or first 24 hours of admission was recorded on the discharge letter or summary. We have compared the results of this question with the data-set of patients who had either a record of symptoms during initial presentation (Q14), or indications of delirium on screening assessment (Q15, response A). This makes up 43% (947/2228) of the total sample, as question responses overlap. Only 48% (450/947) of these patients had this information recorded in the discharge letter or summary (Table 8).

As the spotlight audit did not collect information on **confirmed diagnoses**, it is possible that the overall reporting of the inclusion of delirium information on discharge is diluted by those patients who had no symptoms. However, even allowing for patients without delirium, it is likely that in a substantial number of people who have a diagnosis of delirium made in hospital this fact is not communicated to their primary care team.

Cognitive assessment at discharge

Just under 50% of patients had a standardised cognitive test or other cognitive test recorded on or after admission. The tool asked whether these patients had had the assessment repeated before discharge – only 22% of patients did (Table 9). It is important that cognitive tests are repeated in people with delirium to confirm that they are improving and responding to treatment.

Table 8. Casenotes with indications of delirium during initial admission, with information recorded at discharge

Q29. Was delirium or acute confusion during the initial presentation or within 24 hours of admission recorded on the discharge letter or summary?	% (Num/Den)
Yes	48% (450/947)
No	40% (379/947)
N/A – no delirium or acute confusion	13% (118/947)

Table 9. Casenotes where a cognitive test was performed, with repetition at dischargee

Q28. Was a standardised cognitive test (such as AMTS, AMT4 or similar) repeated before the patient was discharged from hospital?	% (Num/Den)
Yes	22% (222/1015)
No	71% (719/1015)
N/A – not done at any point of the admission	7% (74/1015)

15.NICE (2014).

Part 2. Overall and hospital-level adjustments for initial delirium assessment

The spotlight audit tool included a number of questions which explored the different ways in which newly admitted patients might be initially assessed for delirium. However, because these questions were not mutually exclusive, there was substantial overlap between different responses. To ensure the most extensive and inclusive interpretation of screening, any positive response to any of these questions were considered a screen in the final reporting.

Q14: Was delirium or acute confusion recorded during the initial presentation or within 24 hours of admission?

Q15: At or within 24 hours of admission, has an assessment been carried out for recent changes or fluctuation in behaviour that may indicate the presence of delirium?

Q17: Was the Single Question in Delirium (SQiD: 'Do you think [name of patient] has been more confused, sleepy or drowsy lately?') or a similar question regarding onset of behavioural change asked?

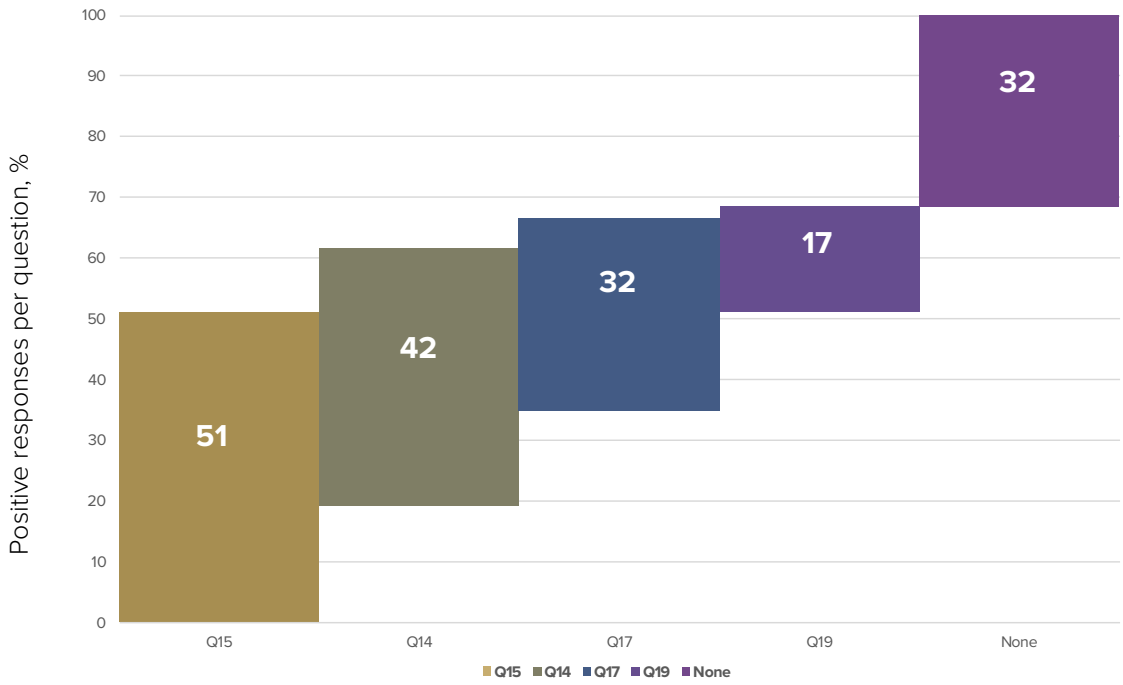
Q19: Was a standardised confusion assessment method such as a CAM or 4AT undertaken?

Questions 14, 17 and 19 were compared with the responses to Q15, which asked only if an initial assessment had taken place, without further detail. Figure 2 shows the overlap and the revised total for the data-set as a whole.

The revised total is 68%, an increase of 17% on the total reported for Q15.

This expanded definition allowed individual hospitals' screening rates to improve, with the scope for improvement directly related to a lower initial rate. Those hospitals which achieved 100% in their responses to Q15 therefore show no improvement with the expanded definition. Across the 117 hospitals included in the spotlight audit, screening rates improved with the expanded definition by an average of 19% (from 51% to 70%),[16] with individual hospitals seeing increases ranging from 0 to 64 percentage points (Fig. 3).

16. This hospital average differs from the whole sample average of 68.4% because of the equal weighting of hospitals with unequal record submission sample sizes.



Q14, Delirium noted on admission
Q15, Initial assessment/screen
Q17, Single Question in Delirium
Q19, Confusion assessment
None, No assessment recorded

Fig. 2. Initial assessment/screen, compared with additional questions showing initial investigation for delirium

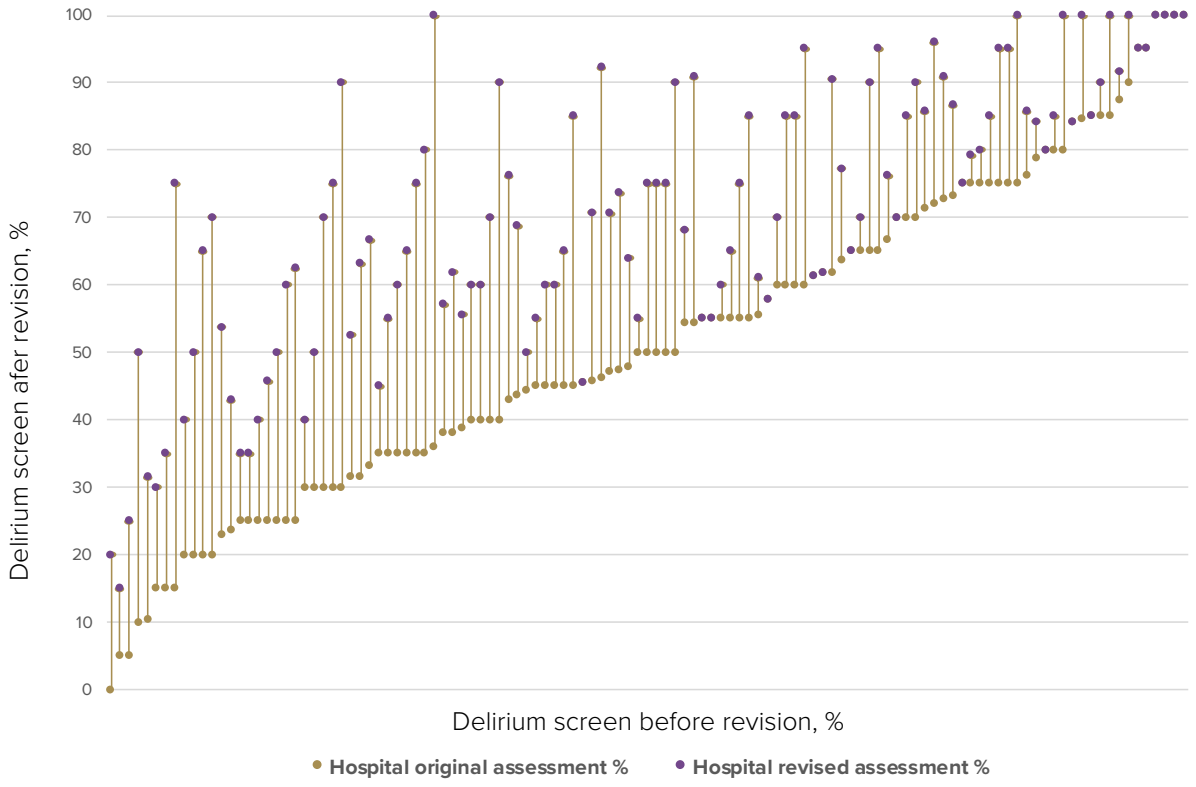


Fig. 3. Original totals (Q15 positive responses) and adjusted totals (including Q14, Q17 and Q19 responses) by hospital

Conclusions and recommendations

Patients whose notes were audited all had a diagnosis of dementia and were emergency admissions to acute care, and were therefore at a very high risk of delirium. The results of the spotlight audit suggest that patients who have received an initial screen or assessment for delirium may have been under-represented in previous audit results. Additional questions in this audit show that some patients who had an initial assessment may have been missed.

Taking the original question on initial assessment, the initial finding from this data-set is 51%. However, some of the patients said not to have had initial assessment have had either SQiD or confusion assessment, or had delirium noted on admission (Fig. 2). The adjusted percentage of patients receiving initial delirium assessment is 68%, which is a large improvement. However, this still leaves a sizeable proportion of patients (32%) without an initial assessment.

Adjustments to totals vary greatly between hospitals. Hospitals with the highest unadjusted results required little or no adjustment, suggesting a consistent approach to assessment. The scale of the adjustments suggests that varied approaches to carrying out and recording assessment of delirium are in place.

Recommendations

1. People with dementia admitted to hospital for acute care must always be assessed for the possibility of delirium.
2. The medical and nursing directors for each trust should create procedures to be implemented across the hospital for:
   a assessing, recording and following up people with a diagnosis of delirium
   b ensuring that all staff likely to treat people with delirium have appropriate training on how to recognise, investigate and manage people with delirium, including the different types/clinical presentations of delirium and approaches for managing them
   c ensuring effective communication about delirium throughout admission and to GPs on discharge.
3. The NAD project team should immediately amend questions and guidance in NAD round 4 in order that
   a hospitals can see what assessment tools or other processes are in use, and
   b false negatives are excluded from the results reported for round 4.

Next steps

Round 4 of NAD is underway at the point of publication. It includes an audit of casenotes (minimum 50 per hospital) which looks at:

- assessment of people with dementia
- collection and use of personal information for people with dementia
- discharge planning for people with dementia.

Delirium assessment questions are contained in the section on assessment. The spotlight audit results showed that the delirium questions previously used in the audit needed to be altered, so that hospitals could interpret and answer them more consistently.

Questions used in round 3 of the audit are shown in Table 1. They have been replaced in round 4 with the section displayed in Fig. 4.

Further information on all audit tools and guidance for round 4 can be found on the CCQI website.[17]

Q21. Were any of the following screening assessments carried out to assess for recent changes or fluctuation in behaviour that may indicate the presence of delirium? (Tick all that apply).

This refers to the assessment at presentation set out in NICE delirium guideline, which specifies that people at risk should be assessed for indications of delirium. This includes people with dementia/cognitive impairment. See http://www.nice.org.uk/cg103

- ❒ Single Question in Delirium (SQiD) ⇨**Go to 21a**
- ❒ History taken from someone who knows the patient well in which they were asked about any recent changes in cognition/behaviour ⇨**Go to 21a**
- ❒ 4AT ⇨**Go to 21a**
- ❒ Other, please specify: ..... ⇨**Go to Q21a**
- ❒ No ⇨**Go to 22**

Q21a. If Yes:

- ❒ Initial assessment above found evidence that delirium may be present ⇨**Go to Q22**
- ❒ Initial assessment above found no evidence of delirium ⇨**Go to Q23**

Q22. Did a healthcare professional (who is trained and competent in the diagnosis of delirium) complete any of the following assessments for delirium? (tick all that apply)

- ❒ 4AT ⇨**Go to Q22a**
- ❒ Confusion Assessment Method (CAM) – short or long form ⇨**Go to Q22a**
- ❒ Other, please specify: ..... ⇨**Go to Q22a**
- ❒ No assessment for delirium was carried out by a healthcare professional ⇨**Go to Q23**

Q22a. From this assessment(s), was a diagnosis of delirium confirmed?

- ❒ Yes
- ❒ No

Fig. 4. Questions 21–22 in round 4 of the audit

17. www.rcpsych.ac.uk/workinpsychiatry/qualityimprovement/nationalclinicalaudits/dementia/nationalauditofdementia/fourthroundofaudit.aspx

References

Online resources

The following documents can be accessed on the audit website (www.nationalauditofdementia.org.uk):

- reports from rounds 1, 2 and 3 of audit
- service user comments on the findings of round 3
- hospital scores for round 3
- standards documents, guidance and audit tools from all rounds of audit
- lists of participating trusts/health boards and hospitals
- comparisons between rounds of audit data.

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Appendices

Appendix A. Patient demographics

Age range, years	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
25–65	2.2% (221)	2.2% (50)
66–80	24.3% (2445)	23.9% (532)
81–100	73.0% (7332)	73.6% (1639)
101–103	0.4% (39)	0.3% (7)

Age, years	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Range	34–108	25–103
Mean	84.3	84.2
Median	85	85

Gender	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Male	40.1% (4029)	41.6% (927)
Female	59.9% (6018)	58.3% (1300)

Ethnicity	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
White/White British	82.1% (8250)	81.3% (1812)
Black/Black British	1.2% (123)	1.7% (37)
Asian/Asian British	2.0% (203)	2.2% (48)
Mixed	0.1% (11)	0.0% (1)
Other	12.4% (1250)	2.0% (45)
Not documented	2.1% (210)	12.8% (285)

First language	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
English	77.4% (7778)	73.8% (1644)
Welsh	0.6% (61)	0.9% (19)
Other European language	1.0% (96)	0.5% (11)
Asian language	1.4% (144)	1.3% (30)
Other	0.6% (59)	0.9% (20)
Not documented	19.0% (1909)	22.6% (503)

Primary diagnosis/cause of admission[a]	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Respiratory	19.9% (1998)	16.5% (367)
Fall	13.3% (1332)	13.7% (306)
Urinary/renal	9.0% (901)	8.8% (196)
Hip dislocation/hip fracture	7.5% (754)	6.9% (154)
Sepsis	6.3% (633)	7.4% (165)
Delirium/confusion	6.0% (604)	8.1% (181)
Gastrointestinal	5.9% (595)	6.4% (142)
Cardiac/vascular	5.1% (517)	6.5% (145)
Stroke	3.8% (380)	3.1% (69)
Neurological	3.6% (364)	3.3% (74)
Skin lacerations/lesions	2.0% (204)	1.9% (42)
Impaired consciousness	2.0% (198)	3.2% (71)
Dementia	1.9% (195)	1.5% (34)
Other	1.9% (192)	0.7% (16)
Unable to cope/frailty	1.6% (160)	3.8% (84)
Dehydration	1.4% (143)	0.7% (15)
Haematology	1.1% (115)	0.4% (9)
Endocrine/metabolic	1.1% (112)	1.3% (28)
Other fractures	1.0% (96)	2.4% (53)
Cancer	0.9% (94)	0.7% (16)
Surgical/non-surgical procedure	0.9% (86)	0.2% (4)
Pain/swelling	0.8% (85)	0.4% (10)
Hepatology	0.8% (84)	0.2% (4)
Oral/ visual/ auditory	0.4% (45)	0% (0)
Rheumatic	0.4% (45)	0.3% (7)
Psychiatric	0.4% (42)	0.3% (7)
Adverse reaction to medication/allergy/overdose	0.3% (28)	0.4% (8)
Injury/trauma	0.2% (24)	0.8% (18)
Not documented/ unknown	0.2% (21)	0.1% (3)

a. Primary cause of admission was taken as the first reason entered on the spotlight audit.

Specialty of the ward patients spent the longest time in	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Care of the elderly	41.1% (4125)	40.9% (911)
General medical	23.5% (2359)	22.8% (509)
Other medical	9.9% (999)	8.8% (195)
Orthopaedics	8.9% (892)	8.7% (193)
Surgical	6.8% (681)	5.1% (114)
Stroke	4.5% (456)	4.9% (109)
Cardiac	2.5% (248)	3.0% (66)
Other	1.4% (136)	4.7% (104)
Nephrology	0.5% (52)	0.6% (14)
Obstetrics/gynaecology	0.4% (41)	0.2% (4)
Critical care	0.2% (23)	0.2% (5)
Oncology	0.2% (22)	0.2% (4)

Patients who:	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Died in hospital	12.8% (1285)	11.2% (249)
Self-discharged from hospital	0.1% (12)	0.2% (4)
Marked 'fast track discharge'/'discharge to assess'/'transfer to assess'/'expedited with family agreement for recorded reasons'	5.5% (482)	6.1% (135)
Received end-of-life-care in hospital/were on an end-of-life-care plan	13.0% (1302)	11.9% (265)

Length of stay in the hospital, days	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
2–10	45.3% (4553)	50.9% (1133)
11–20	25.5% (2559)	22.8% (507)
21–30	11.3% (1132)	10.9% (243)
31–40	6.7% (671)	5.8% (130)
41–50	4.2% (418)	2.8% (62)
51–60	2.3% (230)	1.8% (41)
61–70	1.7% (168)	1.9% (42)
71–80	1.0% (102)	0.9% (21)
81–90	0.6% (62)	0.7% (16)
More than 90	1.5% (152)	1.5% (33)

Length of stay in the hospital	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
Range	2–775	3–173
Median (days)	12	10

Place of residence before and after admission	National audit – round 3 (2016) % (*n*)		National audit – spotlight (2017) % (*n*)	
	Before	After[a]	Before	After[a]
Own home	57.7% (5793)	40.2% (3519)	58.4% (1302)	44.0% (871)
Respite care	0.8% (80)	1.6% (136)	0.7% (15)	1.1% (22)
Rehabilitation	0.4% (37)	2.4% (207)	0.4% (10)	3.2% (63)
Psychiatric ward	0.5% (48)	0.7% (62)	0.4% (8)	0.8% (15)
Carer's home	2.1% (212)	2.1% (181)	1.8% (41)	1.8% (36)
Intermediate care	0.3% (27)	2.0% (172)	0.3% (7)	2.0% (39)
Residential care	16.9% (1701)	17.7% (1551)	17.2% (384)	17.0% (336)
Nursing home	19.7% (1981)	28.7% (2511)	19.3% (431)	26.3% (521)
Palliative care	0.0% (5)	0.6% (54)	0.0% (1)	0.7% (13)
Transfer from/to another hospital	1.4% (145)	3.9% (343)	1.0% (23)	2.9% (58)
Long-stay care	0.2% (18)	0.3% (26)	0.3% (6)	0.3% (5)

a. These figures exclude patients who died while in hospital.

Change in residence[a]	National audit – round 3 (2016) % (*n*)	National audit – spotlight (2017) % (*n*)
No change	73.4% (6428)	77.3% (1529)
Own/carer's home to nursing/residential care	11.1% (972)	8.7% (172)

a. These figures exclude patients who died while in hospital.

Appendix B. Full results breakdown

Delirium screening and assessment

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q14. Was delirium or acute confusion recorded during the initial presentation or within 24 hours of admission? (Yes/No)	
Yes	42.4% 945/2228 40% (30–51.8%)
Q15. At or within 24 hours of admission, has an assessment been carried out for recent changes or fluctuation in behaviour that may indicate the presence of delirium?	
Yes, and there were indications that delirium may be present	32.8% 730/2228 30% (20–45%)
Yes, but there was no indication that delirium may be present	18.2% 406/2228 15% (5–29.3%)
No assessment has been carried out	49% 1092/2228 50% (30–67.6%)
(If Q15 Yes, and there were indications that delirium may be present) Q16. Has the patient been clinically assessed for delirium by a healthcare professional? (Yes/No)	
Yes	84.4% 616/730 88.9% (73.2–100%)
Q16a. If 'yes', please indicate timescale from admission:	
Within 2 hours	37% 230/622 28.6% (0–66.7%)
Within 24 hours	51.3% 319/622 50% (28.6–83.3%)
Within 48 hours	3.7% 23/622 0% (0–0%)
Within 72 hours	3.4% 21/622 0% (0–0%)
Longer	2.1% 13/622 0% (0–0%)
Uncertain/don't know	2.6% 16/622 0% (0–0%)

Details of assessments carried out

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q17. Was the Single Question in Delirium (SQiD: Do you think [name of patient] has been more confused, sleepy or drowsy lately?, or a similar question regarding onset of behavioural change) asked?	
Yes	31.9% 711/2228 29.6% (10–49%)
No	51% 1136/2228 47.6% (25–75%)
Uncertain/don't know	17.1% 381/2228 10% (0–25%)
Q18. Was a corroborative history obtained from someone who knows the patient well (i.e. information obtained from family or carers)?	
Yes	61% 1358/2228 60% (45–76.7%)
Yes, *but* unsure when undertaken	4.2% 93/2228 0% (0–7.4%)
Yes, *but* not within 24 hours of admission	5.8% 130/2228 0% (0–10%)
No	20.8% 463/2228 16% (5–30%)
Uncertain/don't know	8.3% 184/2228 5% (0–11.5%)
Q18a. If 'yes' but not within 24 hours of admission, how many hours after admission was this done?	
Between 24 and 48 hours	36.2% 47/130 33.3% (0–50%)
Between 49 and 72 hours	20% 26/130 0% (0–40%)
Between 73 hours and a week	26.2% 34/130 0% (0–50%)
Over a week	6.9% 9/130 0% (0–0%)
Unknown	10.8% 14/130 0% (0–0%)
Hours: Range Mean Median	28–480 91.3 72

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q19. Was a standardised confusion assessment method such as a CAM or 4AT undertaken?	
Yes	14.8% 329/2228 9.5% (0–25%)
Yes, *but* unsure when undertaken	0.7% 16/2228 0% (0–0%)
Yes, *but* not within 24 hours of admission	1.8% 41/2228 0% (0–4.7%)
No	76.2% 1697/2228 83.7% (62.4–95%)
Uncertain/don't know	6.5% 145/2228 0% (0–7.7%)
Q19a. If yes but not within 24 hours of admission, how many hours after admission was this done?	
Between 24 and 48 hours	39% 16/41 33.3% (0–100%)
Between 49 and 72 hours	19.5% 8/41 0% (0–33.3%)
Between 73 hours and a week	19.5% 8/41 0% (0–33.3%)
Over a week	14.6% 6/41 0% (0–0%)
Unknown	7.3% 3/41 0% (0–0%)
Hours: Range Mean Median	27–672 117.3 72

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q20. Was a standardised cognitive test (such as AMTS, AMT4 or similar) undertaken?	
Yes	40.8% 909/2228 35% (22–55.8%)
Yes, *but* unsure when undertaken	1.2% 26/2228 0% (0–0%)
Yes, *but* not within 24 hours of admission	2.8% 63/2228 0% (0–5%)
No	51.1% 1138/2228 54.2% (30–70%)
Uncertain/don't know	4.1% 92/2228 0% (0–5%)
Q20a. If yes but not within 24 hours of admission, how many hours after admission was this done?	
Between 24 and 48 hours	19% 12/63 0% (0–50%)
Between 49 and 72 hours	23.8% 15/63 0% (0–33.3%)
Between 73 hours and a week	33.3% 21/63 0% (0–100%)
Over a week	15.9% 10/63 0% (0–0%)
Unknown	7.9% 5/63 0% (0–0%)
Hours: Range Mean Median	24–1260 151.2 82.5

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q21. Were any other cognitive tests, questions or assessment methods used during this initial period?	
Yes	9% 200/2228 5% (0–11.9%)
Yes, *but* unsure when undertaken	0.3% 7/2228 0% (0–0%)
Yes, *but* not within 24 hours of admission	1.7% 38/2228 0% (0–4.1%)
No	79.2% 1765/2228 85% (70–95%)
Uncertain/don't know	9.8% 218/2228 4.8% (0–15%)
Q21a. If yes but not within 24 hours of admission, how many hours after admission was this done?	
Between 24 and 48 hours	13.2% 5/38 0% (0–0%)
Between 49 and 72 hours	18.4% 7/38 0% (0–0%)
Between 73 hours and a week	34.2% 13/38 0% (0–75%)
Over a week	21.1% 8/38 0% (0–50%)
Unknown	13.2% 5/38 0% (0–0%)
Hours: Range Mean Median	30–528 140.1 96

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q22. Please indicate if any of the following investigations were undertaken at, or within 24 hours of, admission?	
Full blood count	51.9% 1156/2228 50% (40–62.3%)
Urea and electrolytes	98.9% 2203/2228 100% (100–100%)
Glucose	98.2% 2188/2228 100% (95.9–100%)
Liver function tests	58.9% 1312/2228 60% (35.6–83.9%)
Calcium level	73.7% 1641/2228 78.1% (60–90%)
C-reactive protein (or similar acute phase protein e.g. ESR)	82.1% 1829/ 2228 90% (74–95%)
Blood cultures	57.3% 1277/2228 56.4% (39.2–80%)
Urinalysis/mid-stream urine specimen	25% 556/2228 20% (10.1–31.8%)
Chest X-ray	85.4% 1903/2228 90% (80–95.2%)
Any routine blood test[a]	99.6% 2219/2228 100% (100–100%)
All routine blood tests	50.9% 1135/2228 50% (38.6–60%)
Any infection screening test[b]	94.9% 2115/2228 100% (94.7–100%)
All infection screening tests	13.8% 308/2228 10% (0–20%)

a. Full blood count, urea and electrolytes, glucose, liver function tests or calcium level.
b. C-reactive protein, blood cultures, urinalysis/mid-stream specimen of urine, chest X-ray.

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q23. Was a full physical examination of the patient undertaken by a doctor at, or within 24 hours of, admission? (Yes/No)	
Yes	96.8% 2157/2228 100% (95–100%)
Q23a. If yes, which of the following systems were fully examined?	
Cardiac	92.5% 2062/2228 100% (94.5–100%)
Respiratory	94.8% 2113/2228 100% (96.9–100%)
Abdominal	92.8% 2068/2228 100% (94.7–100%)
Neurological	61.4% 1367/2228 65% (47.1–80%)

Nursing assessment

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q25. Is there a nursing plan for delirium/ pathway for delirium in the notes? (Yes/No)	
Yes	19.5% 434/2228 10% (0–28.6%)
Q26. Was the patient assessed for constipation as a possible cause of delirium at or within 24 hours of admission? (Yes/No)	
Yes	41.2% 917/2228 36.5% (19.3–60%)
Q27. Was the patient assessed for pain as a possible cause of delirium, at or within 24 hours of admission? (Yes/No)	
Yes	52.7% 1175/2228 57.9% (25–80%)

Discharge

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q28. Was a standardised cognitive test (such as AMTS, AMT4 or similar) repeated before the patient was discharged from hospital?	
Yes	11.9% 236/1979 8.5% (0–16.7%)
No	57.4% 1135/1979 60.6% (38.9–77.8%)
N/A – not done at any point of the admission	30.7% 608/1979 26.5% (10.7–47.3%)
Q29. Was delirium or acute confusion during the initial presentation or within 24 hours of admission recorded on the discharge letter or summary?	
Yes	24.7% 489/1979 23.5% (13.8–34.6%)
No	43.3% 856/1979 42.5% (26.3–58.8%)
N/A – no delirium or acute confusion	32% 634/1979 29.4% (15–47.4%)

Recording

Questions	National audit spotlight 2017 % Num/Den Median (IQR)
Q30. Whereabouts in the casenotes did you find the information to complete this audit form?	
Nursing notes	19.8% 441/2228 0% (0–27.1%)
Medical notes	49.6% 1104/2228 56.1% (5–92%)
Single electronic record and attachments	76.2% 1697/2228 95% (60.3–100%)
Other	84.5% 1883/2228 100% (93–100%)

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