The Royal College of Emergency Medicine

Clinical Audits

Assessing for Cognitive Impairment in Older People Clinical Audit 2014-15

National Report

Published: 28th May 2015

Contents

Foreword

With the Silver Book, the College has been at the forefront of developing standards to improve acute care for elderly patients brought to hospital. We are delighted to follow up with an audit to demonstrate our commitment to better meeting the needs of older people in acute care.

A key initiative is to routinely screen for dementia/delirium in the Emergency Department so that we can ensure appropriate care from the very start of the patient's journey. While reluctant to add more 'routine' data collection to over-burdened clinical staff, we can see there is a clear clinical benefit to this, and therefore support it.

We know that good quality audit is effective in driving clinical improvement and we are grateful to the Standards & Audit Subcommittee for selecting this particularly challenging yet deserving topic.

College audits are widely respected as a benchmark of quality care. The inspectorate bodies of each of the UK nations pay particular regard to both participation and performance in these audits. I am particularly keen that they continue to focus on patient experience. There is a clear link between audit performance and patient outcomes – a welcome change from many of the process measures we are obliged to undertake.

Dr Clifford Mann, President
Dr Adrian Boyle, Chair of Quality in Emergency Care Committee
Dr Jay Banerjee, Chair of Standards & Audit Subcommittee

Executive summary

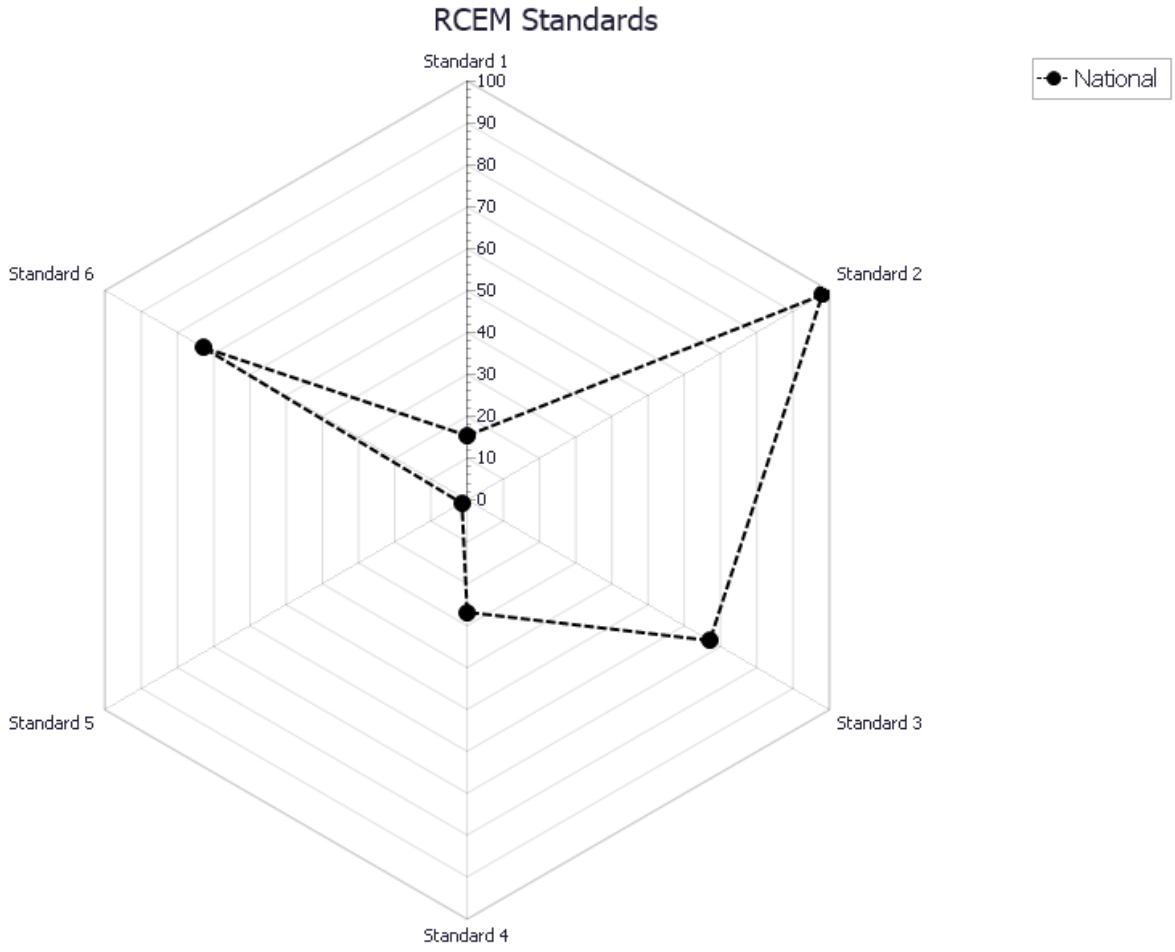
A total of 13,748 records on patients aged over 75 years old from 170 Emergency Departments were audited. This is an excellent sample size and a great achievement by the Emergency Departments involved and the scale of this audit means that the results we see are likely to be a representative sample of UK Emergency Department practice.

There was one Fundamental ('must achieve') standard – that all patients over 75 must have an Early Warning Score assessment. The results – a national median of 82% show that while there is room for improvement, we were pleased by this performance as it was the first time this audit had been attempted.

Other results were however much less impressive, with only 11% of patients being screened for dementia/delirium. It is clear that as a specialty, we need to consider how best to build this into our processes.

The results also suggest that we do not have a consistent mechanism for communicating the results of our assessment to carers or other medical professionals and this may be a challenge that we have to share with our IT providers.

This graph shows how EDs performed nationally on all six standards for this audit.



Standard 1 – All overs 75s are assessed for cognitive impairment (CI) in the ED

Standard 2 – Use of a structured tool for CI assessment

Standard 3 – CI assessment findings are shared with admitting services

Standard 4 – CI assessment results shared with patient's GP if new onset or deterioration in condition

Standard 5 – CI assessment results shared with carers at time of hospital admission or discharge unless information was available from these sources

Standard 6 – All over 75s to have at least one Early Warning Score Assessment

↑ Higher scores (e.g. 100%) indicate higher compliance with the standards and better performance.

↓ Lower scores (e.g. 0%) indicate that EDs are not meeting the standards and may wish to investigate the reasons.

Introduction

The objective of the audit was to identify current performance in EDs against best practice clinical standards and display the results in comparison with other departments, in order to facilitate quality improvement. The audit focused on:

1. Assessment of cognitive impairment by ED staff.
2. Communication of assessment findings with relevant services, carers and GP.
3. Documentation of EWS.

This report shows the results from an audit on the assessment of cognitive impairment in older people over 75 years who presented at Emergency Departments (EDs) around the UK by ambulance. The report compares the findings against the clinical standards published by the Royal College of Emergency Medicine (RCEM) Quality in Emergency Care Committee (QEC).

Nationally, 13748 cases from 170 EDs were included in the audit.

Country	Number of relevant EDs	Number of cases
National total	170/230 (74%)	13748
England	151/180 (84%)	12390
Scotland	6/25 (24%)	420
Wales	8/13 (62%)	526
Northern Ireland	4/9 (44%)	316
Isle of Man/Channel Islands	1/3 (33%)	96

RCEM Standards

There must be documented evidence in the patient's clinical record that:

Standard	Standard type
1. All patients over the age of 75 are assessed for cognitive impairment (CI) in the Emergency Department (ED).	Developmental
2. Assessments for CI are done using a structured tool and the tool used is documented.	Developmental
3. The findings of CI assessment are provided to the relevant admitting services for admitted patients	Aspirational
4. The findings of CI assessment are provided to the patient's GP if new onset or in the event of any deterioration.	Aspirational
5. Information regarding CI is provided to the patient's carers at the time of admission to hospital or discharge back to their usual place of residence unless this information was available from these sources.	Aspirational
6. All patients over the age of 75 have at least one Early Warning Score assessment.	**Fundamental**

Understanding the different types of standards

Fundamental standards: need to be applied by all those who work and serve in the healthcare system. Behaviour at all levels and service provision need to be in accordance with at least these fundamental standards. No provider should provide any service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

Developmental standards: set requirements over and above the fundamental standards.

Aspirational standards: setting longer term goals.

Audit history

All EDs in the UK were invited to participate in June 2014. Data were collected using an online data collection tool which opened in August 2014. This is the first time this audit has been conducted. The audit is included in the NHS England Quality Accounts for 2014/2015.

Participants were asked to collect data from ED/hospital records on a maximum of 100 cases, chosen through a systematic random sample of every 10th patient aged over 75 years presenting in the ED between 1st August 2014 and 31st January 2015. The sample size was geared to the smallest volume of older people presenting to any ED.

Format of this report

The table overleaf shows the national audit results.

By showing the lower and upper quartiles of performance as well as the median values, the table indicates the variations in performance between departments. More detailed information about the distribution of audit results can be obtained from the charts on subsequent pages of the report. Please bear in mind the comparatively small sample sizes when interpreting the charts and results. Also note that data quality was variable, and incomplete records often led to poorer performance figures.

Feedback

We would like to know your views about this report, and participating in this audit. Please let us know what you think, by completing our feedback survey: http://ow.ly/LX5gz.

We will use your comments to help us improve our future audits and reports.

Summary of national findings

Question		RCEM Standard	National Results (13748)		
			Lower quartile	Median*	Upper quartile
Documentation of EWS					
Q4	**STANDARD 6.** Early Warning Score documented	100%	66%	82%	93%
Assessment of cognitive impairment by ED staff					
Q5	**STANDARD 1.** Cognitive assessment took place	100%	4%	11%	19%
Q5a	**STANDARD 2.** Structured cognitive assessment tool used	100%	100%	100%	100%
Q5b	Recorded cognitive assessment score:		84%	100%	100%
Q5c	• Normal		6%	28%	50%
	• Abnormal		14%	36%	52%
	• Not recorded		0%	16%	51%
Communication of assessment findings with relevant services, carers and GP					
Q7	**STANDARD 3.** Admitting service (admitted patients only)	100%	36%	83%	100%
	STANDARD 4. GP (*if new onset or deterioration only)	100%*	0%	0%	50%
	STANDARD 5. Carer (all)	100%	0%	0%	1%

Red = Percentage in red indicates result is below RCEM standard
Green = Percentage in green indicates result is equal to or above RCEM standard

Notes about the results

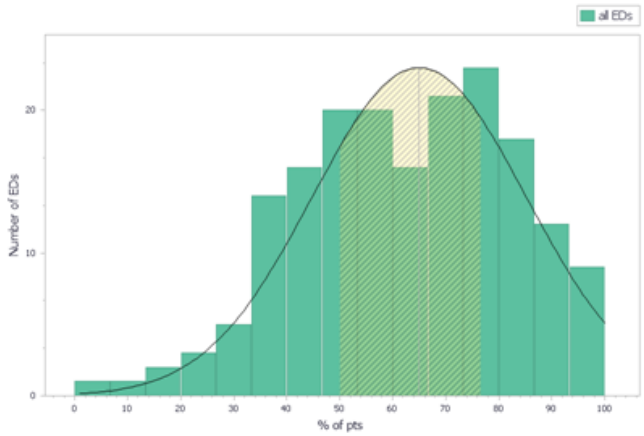
*The median value of each indicator is that where equal numbers of participating EDs had results above and below that value.

These median figures may differ from other results quoted in the body of this report which are mean (average) values calculated over all audited cases.

The lower quartile is the median of the lower half of the data values.
The upper quartile is the median of the upper half of the data values.

Histogram Charts

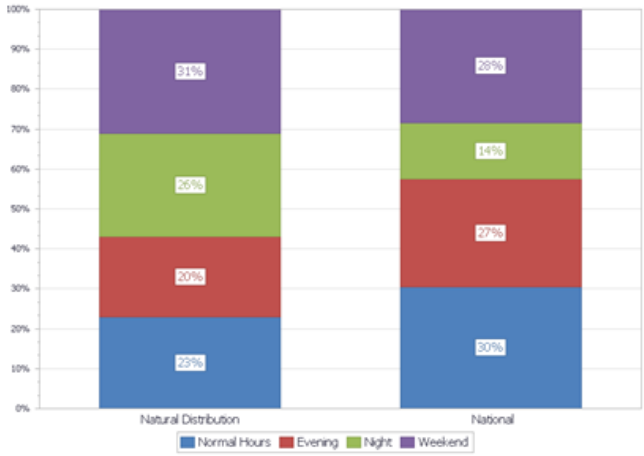
Histogram charts are used to show the distribution and frequency of results. Each histogram shows the number of EDs per % of patients as the height of each block.



The hatched area shows the interquartile range (the spread of the middle 50% of the data values). The grey line in this area shows the median.

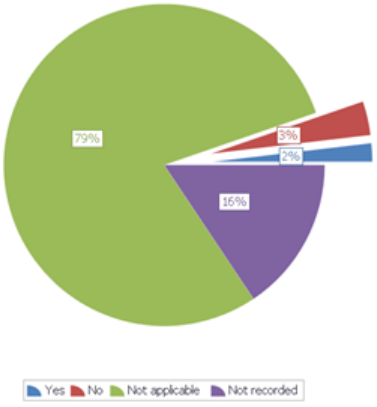
The curved line shows the normal distribution of data.

Stacked Bar Charts



Stacked bar charts show the breakdown of a group nationally.

Pie Charts

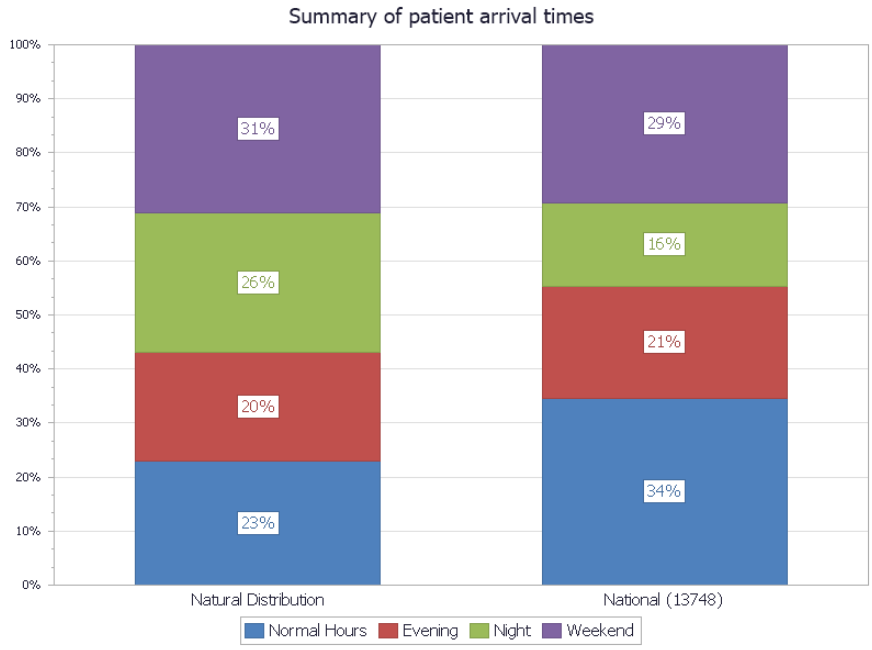


Pie charts show the breakdown of a group nationally.

SECTION 1: Case mix

How do patients attending Emergency Departments compare? Use this section to help you understand more about the case mix and demographics of the patients.

Q2. Date and time of arrival

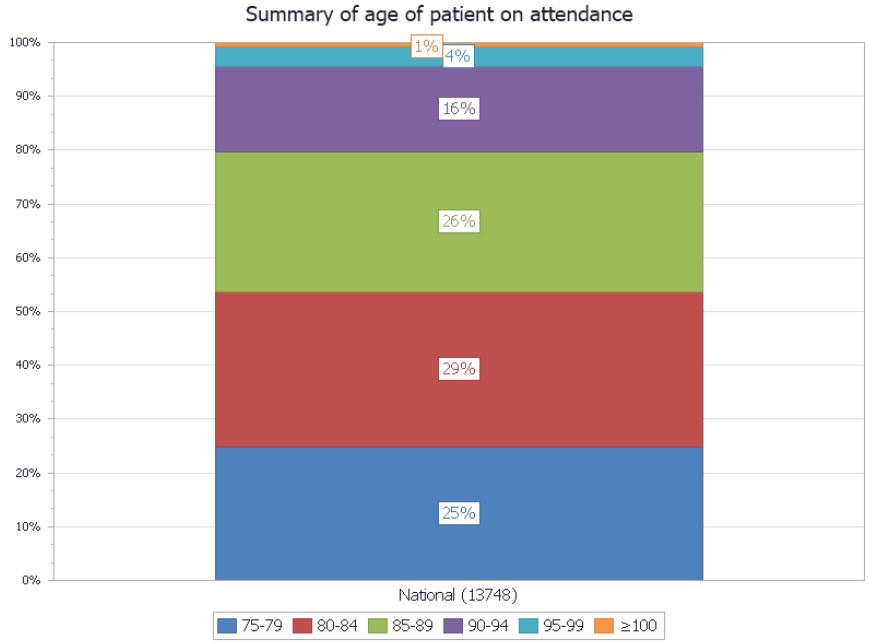


Definitions
In hours: 09:00-17:00
Evening: 17:01-00:00
Night: 00:01-08:59
Weekend: Sat, Sun or bank holiday

The natural distribution shows how the attendances would look if this event occurred equally throughout the week.

Note that arrival time is not when the bulk of the decision making and treatment occurs – this is probably about 2-3 hours after arrival.

Q3. Age of patient on attendance



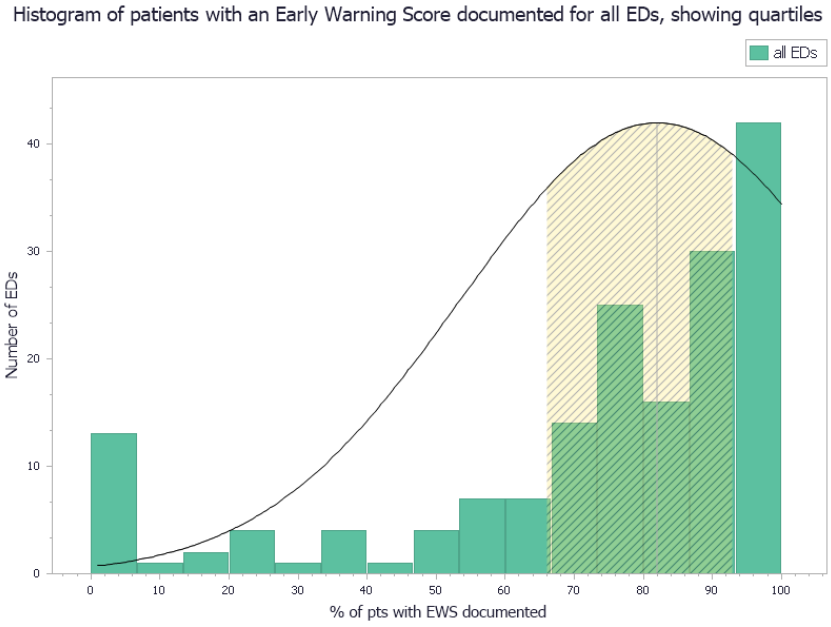
It should be noted that these age bands do not cover equal age ranges.

This enables hospitals to assess whether their population group matches national figures. This in turn may affect the audit results.

SECTION 2: Audit results

Documentation of EWS

Q4. Was an Early Warning Score documented?



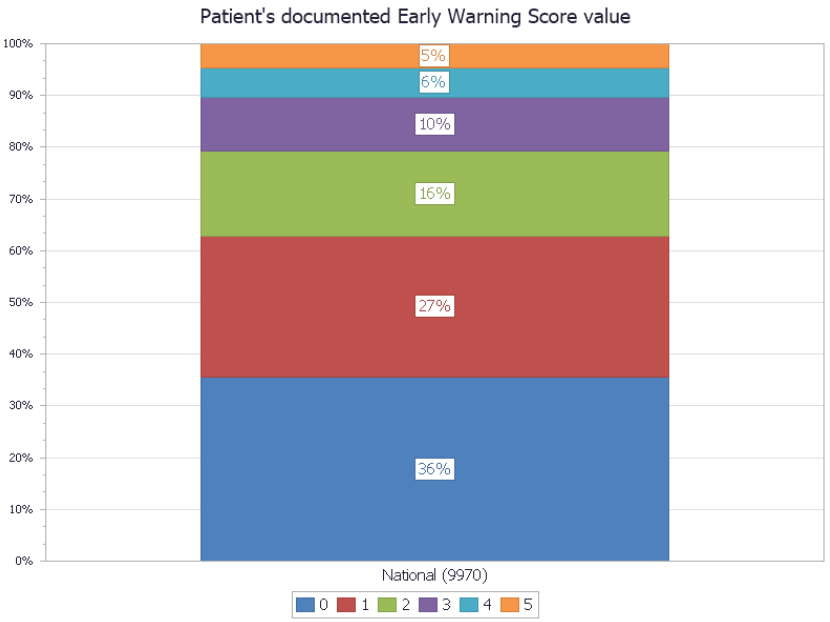
Fundamental standard 6: Early Warning Score documented

Standard: 100% patients

The standard was met in a median of 82% of patients. This is encouraging as this is the first time this has been the subject of an audit. However as can be seen from the large area of green, there is a large variation between departments.

It would be good to understand how hospitals on the right of the curve have managed to achieve this e.g. by 'building in' to the patients' initial assessment

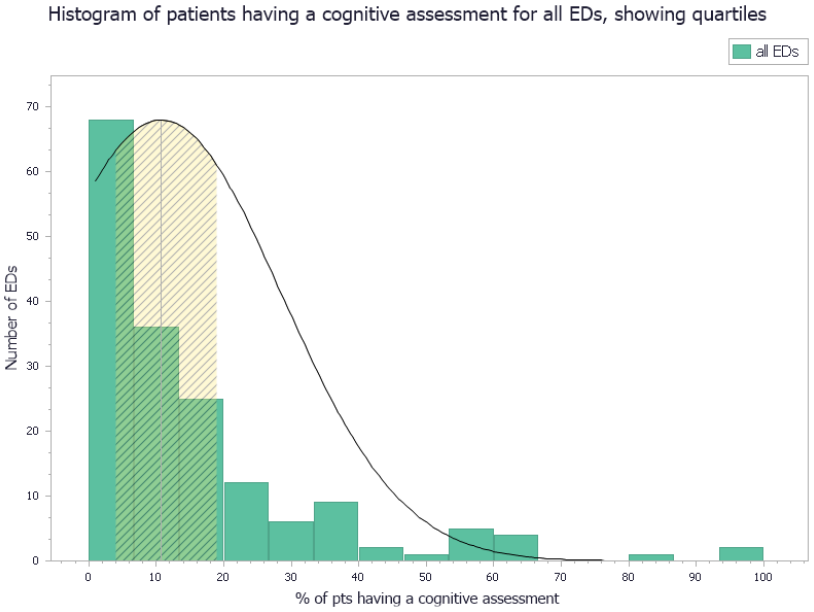
Q4a. Early Warning Score value



As the majority of patients had an EWS then these results should be quite representative at a national level. If at a local level the numbers were low, these proportions will be less accurate.

Assessment of cognitive impairment

Q5. Did a cognitive assessment take place?



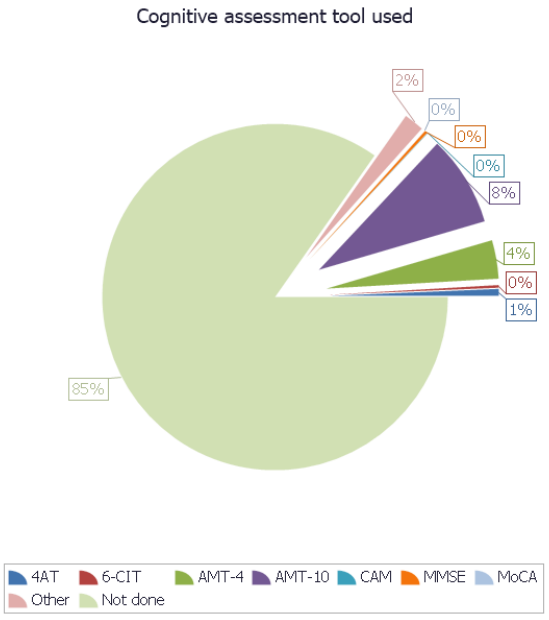
Standard 1: Cognitive assessment took place

Standard: 100%

Performance in this area was low overall. There are many potential reasons for this e.g. not deemed necessary, done but not recorded, or left to inpatient teams.

When only considering discharged patients (2089), this was achieved in 1.5% (interquartile range: 0-5%).

Q5a. Cognitive assessment tool used



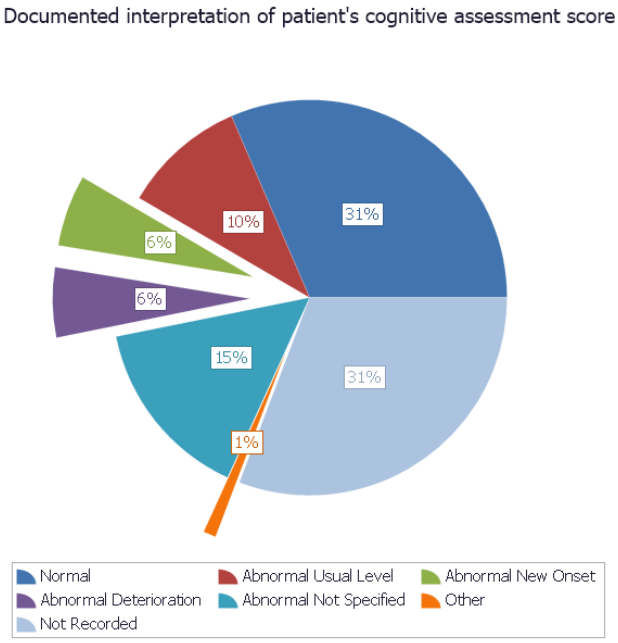
Standard 2: Cognitive assessment tool used

Standard: 100%

There are a number of different assessment tools available and no officially mandated choice.

The numbers of hospitals performing CAS is low, so this should be borne in mind when considering local practice.

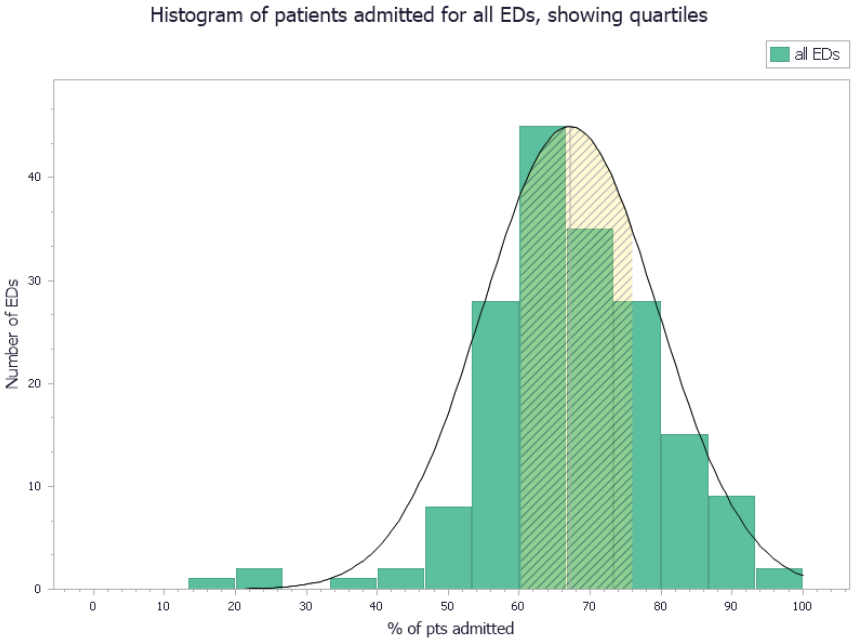
Q5c. Cognitive assessment score



This is difficult to interpret as the numbers of patients having CAS are low overall. As the numbers are low/ very low in many EDs, these figures are unlikely to be an accurate representation of the true situation. However the national sample size is big which hints towards overall practice and trends.

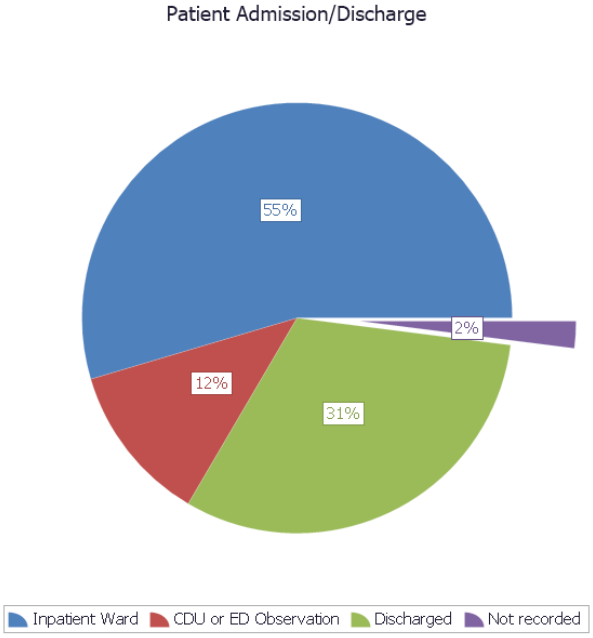
Patient pathway

Q6. Was the patient admitted or discharged?



The place of a hospital on the curve will be affected by the age, acuity and co-morbidities of their patient population.

Q6a. If the patient was admitted, where to?

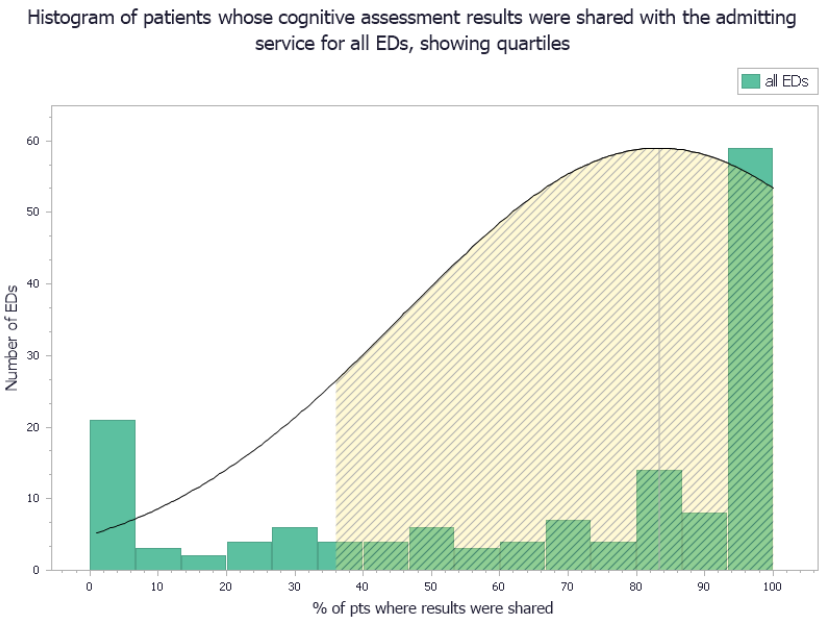


Differences in the national and local results will most likely depend on variation in local practice e.g. use of ambulatory care and observation units.

Communication of assessment findings

Q7. If ADMITTED (either as inpatient or to CDU/Obs ward) or DISCHARGED, is there any documented evidence of the cognitive assessment results being shared with the following?

a. Admitting service



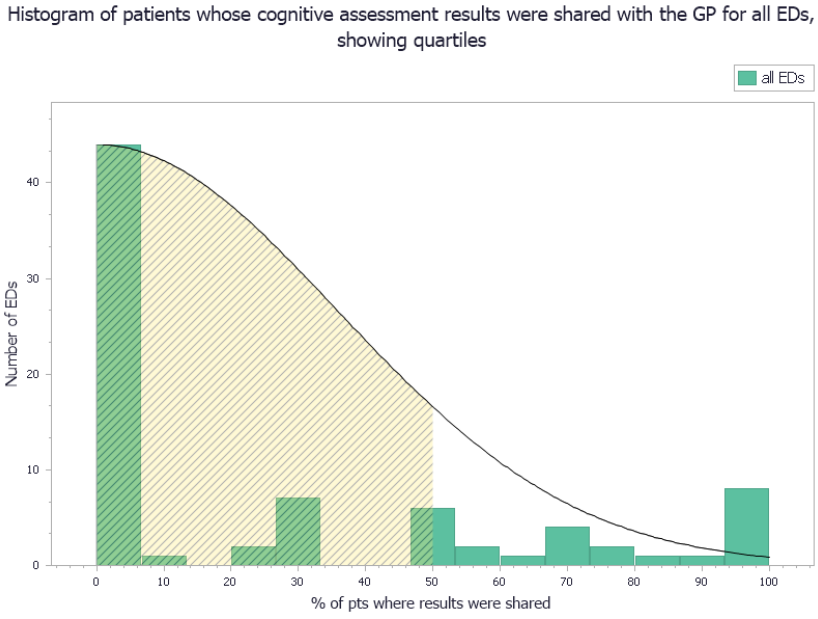
Standard 3: The findings of CI assessment are provided to the relevant admitting services for admitted patients

Standard: 100%

This graph shows tremendous variation in the sharing of information with inpatient units.

It is quite possible that much of this information was transmitted verbally in handover, but as with all medical notes – if it was not recorded, we cannot show it happened.

b. Patient's GP



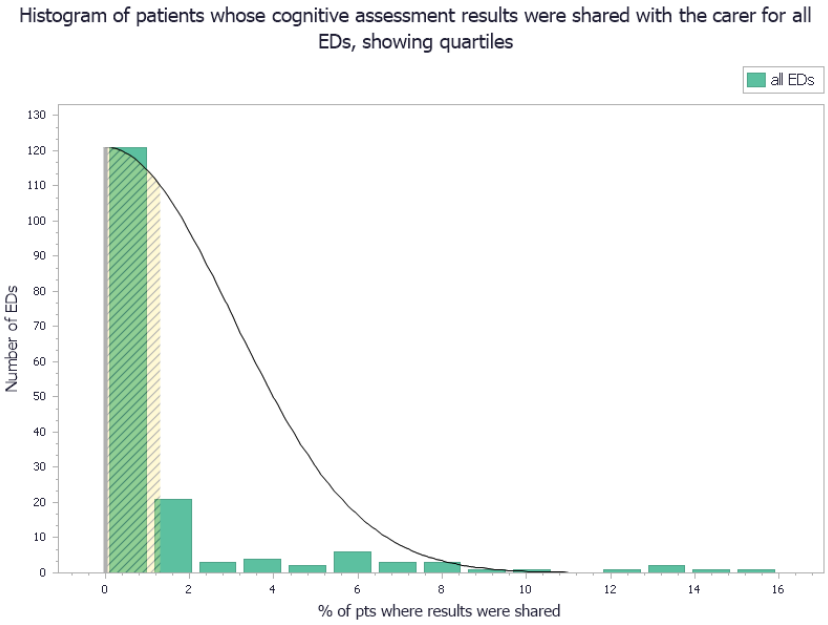
Standard 4: The findings of CI assessment are provided to the patient's GP if new onset or in the event of any deterioration.

Standard: 100%

Again this graph shows that communication with the GP is poor.

This may be because these patients are mostly admitted and therefore there may be an expectation that a GP letter will be sent by the inpatient unit.

c. Patient's carer



Standard 5: Information regarding CI is provided to the patient's carers at the time of admission to hospital or discharge back to their usual place of residence unless this information was available from these sources.

Standard: 100%

Similarly to the communication with inpatient units, it is possible that there is verbal communication regarding this, but that this is not recorded in the patient notes.

Analysis

The samples sizes for each standard were:

Standard 1: 13748
Standard 2: 2089
Standard 3: 1617
Standard 4: 227
Standard 5: 13748
Standard 6: 13748

With the exception of standard 4, the case numbers were considered large enough for the findings to be deemed as a valid national representation.

The performance in the only fundamental standard (standard 6 - documentation of EWS), at 82% was better than some had expected, but still has some way to go to achieve 100%.

It should be noted that figures for standard 2 (use of a structured cognitive assessment tool) are obtained from examining only the subgroup of patients who had a cognitive assessment, which is a small number of the overall cases (15% on average nationally). It appears that sites which have routine testing in place also have better procedures overall relating to this, such as being more likely to use a structured tool (standard 2) and recording the assessment score.

Regarding standard 4 (sharing assessment results with GP if the patient shows new onset or deteriorating cognitive impairment), there were small numbers of patients who were identified in these categories (12% national average). The calculations are based on these subgroups rather than all cases.

It is observed for standard 5 (sharing assessment results with carer) that many sites had low scores in this area.

The assessment of cognition is clearly not yet a routine part of care for the elderly patient in most Emergency Departments.

Undiagnosed delirium with or without dementia is a contributor to significant morbidity and mortality in Emergency Departments (EDs) and hospitals.

Missed delirium contributes to increased length of stay in hospital and to higher incidence of death at 90 days [Fong et al, 2009]. Delirium may be missed in nearly two-thirds of patients in emergency departments [Suffoletto et al, 2013].

Assessment of cognition is an essential fore-runner to further effective care of older people. This is particularly important given the fluctuating nature of delirium and the need for establishing a baseline. People with cognitive impairment are also more prone to falls so recognising high risk fallers in the ED is important. Given the nature of the ED environment, people with delirium are likely to worsen and need regular assessment.

Recently there have been publications describing structural (Schnitker et al 2015) and process (Schnitker et al, 2015) quality indicators for improving assessment and

management of cognitive impairment in EDs. These are best practice guides to practical means of improving care.

Limitations

The participation in the audit was very good and the large number of patients very impressive. Due to the low numbers that completed the assessment of dementia / delirium, caution should be exercised in interpreting the sub-group data regarding the communication of this assessment results (standards 3, 4, 5).

Recommendations

National recommendations

Older people are increasingly attending EDs and assessing their cognitive state is crucially important for instigating person-centred care and reducing further morbidities and mortality.

1. The College should consider adopting as formal College policy the need for screening over 75s for dementia/delirium and this should form part of the ED dataset.

2. The College should recommend Early Warning Scores should be mandatory during a patient's stay in ED, and support this being recorded at the start of the patient's journey and in the ED dataset.

Site-level recommendations

1. Hospitals should review their Early Warning Score position and decide how best to ensure that safe care in this population group can be accurately recorded.

2. Hospitals should screen for dementia / delirium in over 75s in the ED. This information, if new, should be shared with GP for discharged patients and inpatient teams for admitted patients.

3. ED leads should review the articles cited (Schnitker et al, March 2015, Academic Emergency Medicine) to consider best practice interventions to improve cognitive assessment in older people. The "Silver Book" has additional resources that would assist this as part of a whole systems approach.

Using the results of this audit to improve care

Clinical audit is a quality improvement tool. However, traditional clinical audit with an annual or biannual cycle takes too long and may fail to demonstrate a "cause and effect" which allows us to draw conclusions from implementation of changes and their actual effect on performance.

Rapid cycle audit is a better quality improvement tool that involves consulting front-line staff, and asking them to suggest changes to improve the patient care, and then conducting short cycles of audit e.g. 10 patients at a time, and reviewing these to ensure that the performance is improving.

Sharing the results of these audits with staff is a good way of demonstrating both commitment to improve, and their ability to make changes that matter. The results are tracked using a simple run chart and the short run-in times allow more confidence in the change processes creating the needed improvement.

For further information regarding methodology please see HQIP guide on using quality improvement tools (Dixon and Pearce, 2011).

Further Information

Thank you for taking part in this audit. We hope that you find the results helpful.

If you have any queries about the report please e-mail audit@rcem.ac.uk or phone 020 7400 6108. Feedback is welcome at: http://ow.ly/LX5gz or https://www.surveymonkey.com/s/audit_14-15.

Details of the RCEM Clinical Audit Programme can be found under the Clinical Audit section of the College Website (www.rcem.ac.uk).

Useful Resources

- Silver Book
- PowerPoint presentation – developed to help you disseminate these audit results easily and efficiently.
- National Audit of Dementia
- Age UK
- Commissioning for Quality and Innovation (CQUIN) – Guidance for 2015/2016 (NHS England)

Report authors and contributors

This report is produced by the Standards and Audit Subcommittee of the Quality in Emergency Care Committee, for the Royal College of Emergency Medicine.

Pilot sites

We are grateful to contacts from the following trusts for helping with the development of the audit:

- Calderdale & Huddersfield NHS Foundation Trust
- Portsmouth Hospitals NHS Trust
- University Hospitals of Leicester NHS Trust

This report is endorsed by

References

'The Silver Book': Quality Care for Older People with Urgent and Emergency Care Needs (Multiple, June 2012).

NICE guideline: delirium CG103 (July 2010)

NICE Quality Standard: Delirium QS63 (July 2014)

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Schnitker LM, Martin-Khan M, Burkett E, Brand CA, Beattie ER, Jones RN, Gray LC; Research Collaboration for Quality Care of Older Persons: Emergency Care Panel.
Structural quality indicators to support quality of care for older people with cognitive impairment in emergency departments. Acad Emerg Med. 2015 Mar;22(3):273-84. doi: 10.1111/acem.12617.

Schnitker LM, Martin-Khan M, Burkett E, Beattie ER, Jones RN, Gray LC; Research Collaboration for Quality Care of Older Persons: Emergency Care Panel. Process quality indicators targeting cognitive impairment to support quality of care for older people with cognitive impairment in emergency departments. Acad Emerg Med. 2015 Mar;22(3):285-98. doi: 10.1111/acem.12616. PMID: 25754937)

Sample size calculator (Raosoft Inc, 2004). www.raosoft.com/samplesize.html (Accessed April 2015)

Appendix 1: Audit questions

Record #	
Patient reference	

Q1	Date of arrival *(dd/mm/yyyy)*		
Q2	Time of arrival *(Use 24 hour clock e.g. 11.23pm = 23:23)*		
Q3	Age of patient on attendance	75-79	
		80-84	
		85-89	
		90-94	
		95-99	
		≥100	

Q4 Was an Early Warning Score documented?	Yes	
	Not recorded	
If 'Yes', what was the EWS score?	[Value between 0-5]	

Q5	Did a cognitive assessment take place?	Yes	
		No – unable to assess due to patient's medical condition	
		No – unable to assess due to language barrier	
		No – other documented reason	
		Not recorded	
Q5a If yes, please select assessment tool used		4AT (The 4'A's Test)	
		6-CIT (6 item Cognitive Impairment Test)	
		AMT-4 (Abbreviated Mental Test – 4 items)	
		AMT-10 (Abbreviated Mental Test – 10 items)	
		CAM (Confusion Assessment Method)	
		MMSE (Mini Mental State Examination)	
		MoCA (Montreal Cognitive Assessment)	
		Other	
If other - please state:			
Q5b If assessment took place was the assessment score recorded?		Yes	
		Not recorded	
Q5c Documented interpretation of score		Normal	
		Abnormal – usual level	
		Abnormal – new onset	
		Abnormal – deterioration	
		Abnormal – not specified	
		Other	
		Not recorded	
If other - please state			

Q6	Was the patient admitted or discharged?	Admitted	
		Discharged from ED	
		Not recorded	
Q6a	If admitted, where to?	Inpatient ward	
		CDU or ED observation ward	

Q7	If ADMITTED (either as inpatient or to CDU/Obs ward) or DISCHARGED, is there any documented evidence of the cognitive assessment results being shared with the following?					
Admitting service	Yes		If yes, state method	Paper	
	Not recorded			Electronic	
	Not applicable			Verbal	
				Not known	
GP	Yes		If yes, state method	Paper	
	Not recorded			Electronic	
	Not applicable			Verbal	
				Not known	
Carer	Yes		If yes, state method	Paper	
	Not recorded			Electronic	
	Not applicable			Verbal	
				Not known	

Notes

Appendix 2: Participating Emergency Departments

England

Addenbrooke's Hospital
Aintree University Hospital
Airedale General Hospital
Alexandra Hospital
Arrowe Park Hospital
Barnet Hospital
Barnsley Hospital
Basildon University Hospital
Bedford Hospital
Blackpool Victoria Hospital
Bradford Royal Infirmary
Bristol Royal Infirmary
Broomfield Hospital
Calderdale Royal Hospital
Charing Cross Hospital
Chelsea & Westminster Hospital
Cheltenham General Hospital
Chesterfield Royal Hospital
Chorley and South Ribble Hospital
City Hospital (Birmingham)
Colchester General Hospital
Conquest Hospital
Countess Of Chester Hospital
Croydon University Hospital
Darent Valley Hospital
Darlington Memorial Hospital
Derriford Hospital
Diana, Princess of Wales Hospital
Dorset County Hospital
Ealing Hospital
East Surrey Hospital
Eastbourne District General Hospital
Epsom General Hospital
Fairfield General Hospital
Friarage Hospital
Frimley Park Hospital
George Eliot Hospital
Gloucestershire Royal Hospital
Good Hope Hospital
Grantham & District Hospital
Heartlands Hospital
Hereford County Hospital
Hillingdon Hospital
Homerton University Hospital
Horton Hospital
Hull Royal Infirmary
Ipswich Hospital
John Radcliffe Hospital
Kettering General Hospital
Kings College Hospital
King's Mill Hospital
Kingston Hospital
Leicester Royal Infirmary
Leighton Hospital
Lincoln County Hospital
Lister Hospital
Maidstone District General Hospital
Manchester Royal Infirmary
Medway Maritime Hospital
Milton Keynes Hospital
Musgrove Park Hospital
New Cross Hospital
Newham General Hospital
Norfolk & Norwich University Hospital
North Manchester General Hospital
North Middlesex University Hospital
North Tyneside General Hospital
Northampton General Hospital
Northern General Hospital
Northwick Park Hospital
Peterborough City Hospital
Pilgrim Hospital
Pinderfields Hospital
Princess Alexandra Hospital
Princess Royal University Hospital
Queen Alexandra Hospital
Queen Elizabeth Hospital (Birmingham)
Queen Elizabeth Hospital (Gateshead)
Queen Elizabeth Hospital (Woolwich)
Queen Elizabeth, The Queen Mother Hospital
Queen's Hospital (Burton)
Queen's Hospital (Romford)
Queen's Medical Centre
Rotherham District General Hospital
Royal Albert Edward Infirmary
Royal Berkshire Hospital
Royal Blackburn Hospital
Royal Bolton Hospital
Royal Bournemouth General Hospital
Royal Cornwall Hospital
Royal Derby Hospital
Royal Devon & Exeter Hospital
Royal Lancaster Infirmary
Royal London Hospital (The)
Royal Oldham Hospital

Royal Preston Hospital
Royal Surrey County Hospital
Royal Sussex County Hospital
Royal United Hospital
Royal Victoria Infirmary
Russells Hall Hospital
Salford Royal Hospital
Salisbury District Hospital
Sandwell General Hospital
Scarborough General Hospital
Scunthorpe General Hospital
South Tyneside District General Hospital
Southampton General Hospital
Southend Hospital
Southmead Hospital
Southport & Formby District General Hospital
St George's
St Helier Hospital
St James's University Hospital
St Mary's Hospital
St Peter's Hospital
St Richard's Hospital
St Thomas' Hospital
Staffordshire General Hospital
Stepping Hill Hospital
Stoke Mandeville Hospital
Tameside General Hospital
The Cumberland Infirmary
The Great Western Hospital
The James Cook University Hospital
The Royal Liverpool University Hospital
Torbay District General Hospital
Tunbridge Wells Hospital
University College Hospital
University Hospital Lewisham
University Hospital Of North Durham
University Hospital of North Staffordshire
University Hospital Of North Tees
University Hospital Coventry
Wansbeck Hospital
Warrington Hospital
Warwick Hospital
Watford General Hospital
West Cumberland Hospital
West Middlesex University Hospital
West Suffolk Hospital
Weston General Hospital
Wexham Park Hospital
Whipps Cross University Hospital
Whiston Hospital
Whittington Hospital
William Harvey Hospital
Worthing Hospital
Wythenshawe Hospital
Yeovil District Hospital
York Hospital

Wales
Bronglais General Hospital
Glangwili General Hospital
Morriston Hospital
Nevill Hall Hospital
Princess of Wales Hospital
Royal Gwent Hospital
Withybush General Hospital
Ysbyty Gwynedd

Scotland
Forth Valley Royal Hospital
Hairmyres Hospital
Monklands Hospital
Royal Infirmary of Edinburgh
St John's Hospital at Howden
Victoria Hospital

Northern Ireland
Antrim Area Hospital
Causeway Hospital
Royal Victoria Hospital - Belfast
Ulster Hospital

Isle of Man / Channel Islands
Noble's Hospital

Appendix 3: Standards definitions

Standard 1: Assessment in this context, referred to the act of objectively quantifying the cognitive state of the person.

Reason for the measure: This measure identified patients with delirium, delirium superimposed on dementia and dementia presenting to ED. Pre-existing dementia makes older people more prone to developing delirium so they must be included in the assessment process.

Standard 2: A structured tool to assess CI includes:

- 4AT (The 4'A's Test)
- 6-CIT (6 item Cognitive Impairment Test)
- AMT-4 (Abbreviated Mental Test – 4 items)
- AMT-10 (Abbreviated Mental Test – 10 items)
- CAM (Confusion Assessment Method)
- MMSE (Mini Mental State Examination)
- MoCA (Montreal Cognitive Assessment)

If using any other tool, please provide a reference.

'Documents' means the name of the tool used and the patient's 'score' on the tool are recorded in the patient record. "Record" includes paper and electronic versions

Standard 3: Findings of CI assessment: a minimum subjective description of whether it is normal or abnormal; ideally the documentation would include a score using a structured tool. 'Handover' information includes at least one documentation of cognitive state as normal or abnormal with or without an objective score; information in the patient's ED records are made available to the admitting service either as a paper record (photocopy or original) or electronically or a documented evidence that a verbal handover included sharing the cognitive state. Please describe any other reasonable local handover method used.

Standard 4: 'Findings of CI assessment are provided to the patient's GP' includes at least the name of the tool used and the patient's score.

It was not expected that information about previously diagnosed dementia would be shared with the GP. However any changes would be expected to be conveyed to the GP, especially presentation with delirium (sudden deterioration in cognitive state corroborated by carers and/or families).

Standard 5: The patient record stated any of the following or similar terms to clearly convey the message that the information on CI was shared with carers: "confusion", "delirium" "dementia" AND "discussed with" or "communicated to" carers.

If this information was volunteered by the carer, the patient's record was not included for this standard.

Standard 6: Any tool including MEWS or NEWS was acceptable. The total early warning score has to be documented.

Appendix 4: Calculations

Value: **EWS Score (0 to 5)**
Sample Group Condition: Only those entries where the answer to "Q4 Was an Early Warning Score documented?" (Q4xanswer) was answered 'Yes'.

Value: **COG assessment tool used**
Sample Group Condition: Only those entries where the answer to "Q5 Did a cognitive assessment take place?" (Q5xanswer) was answered 'Yes'.

Value: **Assessment score recorded**
Sample Group Condition: Only those entries where the answer to "Q5 Did a cognitive assessment take place?" (Q5xanswer) was answered 'Yes'.

Value: **Documented Interpretation of score**
Sample Group Condition: Only those entries where the answer to "Q5 Did a cognitive assessment take place?" (Q5xanswer) was answered 'Yes'. Also 'yes' to score recorded.

Value: **Patient Admitted to…**
Sample Group Condition: Only those entries where the answer to "Q6 Was the patient admitted or discharged" (Q6xanswer) was answered 'Admitted'.

Value: **COG assessment results shared with Admitting Service**
Sample Group Condition:

- Only those entries where the answer to "Q6 Was the patient admitted or discharged" (Q6xanswer) was answered 'Admitted'.
- 'YES' answers from Q5 'Did a cognitive assessment take place', and discard cases with other answers.

Value: **Standard 2**
Sample Group Condition:

- Only those entries where the answer to "Q5 Did a cognitive assessment take place?" (Q5xanswer) was answered 'Yes'.
- Only those entries where the answer to "Q5a Assessment tool used" (Q5axanswer) was answered with anything other than '(SELECT ANSWER)'.

Value: **Standard 3**
Sample Group Condition:

- Only those entries where the answer to "Q6 Was the patient admitted or discharged" (Q6xanswer) was answered 'Admitted'.
- Only those with 'YES' answers from Q5 'Did a cognitive assessment take place'

Value: **Standard 4**
Sample Group Condition:

- Only those entries where the answer to "Q5 Did a cognitive assessment take place?" (Q5xanswer) was answered 'Yes'.
- Only those entries where the answer to "Q5a Assessment tool used" (Q5axanswer) was answered with anything other than '(SELECT ANSWER)'.
- Only those entries where the answer to "Q5b Assessment score recorded" (Q5bxanswer) was answered 'Yes'.
- Only those entries where the answer to "Q5c Documented interpretation of score" (Q5cxanswer) was answered 'Abnormal – new onset' or 'Abnormal – deterioration'.

Value: **Standard 6**
Sample Group Condition: Only those entries where the answer to "Q4 Was an Early Warning Score documented?" (Q4xanswer) was answered 'Yes'.