Indicator Specification
Delirium
Clinical Care Standard

July 2016

AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Clinical Care Standards

ISBN: 978-1-925224-07-8

Suggested citation

Australian Commission on Safety and Quality in Health Care. Indicator Specification: Delirium Clinical Care Standard. Sydney: ACSQHC, 2016

Acknowledgments

This document has been prepared by Australian Commission on Safety and Quality in Health Care. Technical input was provided by Dr Glenn Arendts, Associate Professor Ravi Bhat, Associate Professor Simon Bell, Associate Professor Laurie Grealish, Dr Judy McCrow and Ms Anne Moehead. The Commission gratefully acknowledges the contributions of these experts, members of the Delirium Clinical Care Standard Topic Working Group and other key experts in the development of this document.

Disclaimer

The Australian Commission on Safety and Quality in Health Care has produced this indicator specification to support monitoring of the corresponding clinical care standard. The indicator specification and the clinical care standard support the delivery of appropriate care for a defined clinical condition and are based on the best evidence available at the time of development. Healthcare professionals are advised to use clinical discretion and consideration of the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian when applying information contained within the clinical care standard. Consumers should use the information in the clinical care standard as a guide to inform discussions with their healthcare professional about the applicability of the clinical care standard to their individual condition.

Contents

Delirium Clinical Care Standard

1 Early screening
A patient presenting to hospital with one or more key risk factors for delirium receives cognitive screening using a validated test. In addition, the patient and their carer are asked about any recent changes (within hours or days) in the patient's behaviour or thinking.

2 Assessing for delirium
A patient with cognitive impairment on presentation to hospital, or who has an acute change in behaviour or cognitive function during a hospital stay, is promptly assessed for delirium by a clinician trained and competent in delirium diagnosis and in the use of a validated diagnostic tool. The patient and their carer are asked about any recent changes in the patient's behaviour or thinking. The patient's diagnosis is discussed with them and is documented.

3 Interventions to prevent delirium
A patient at risk of delirium is offered a set of interventions to prevent delirium and regular monitoring for changes in behaviour, cognition and physical condition.

4 Identifying and treating underlying causes
A patient with delirium is offered a set of interventions to treat the causes of delirium, based on a comprehensive assessment.

5 Preventing falls and pressure injuries
A patient with delirium receives care based on their risk of falls and pressure injuries.

6 Minimising use of antipsychotic medicines
Treatment with an antipsychotic medicine is only considered if a patient with delirium is distressed and the cause of their distress cannot be addressed and non-drug strategies have failed to ease their symptoms.

7 Transition from hospital care
Before a patient with current or resolved delirium leaves hospital, the patient and their carer are involved in the development of an individualised care plan and are provided with information about delirium. The plan is developed collaboratively with the patient's general practitioner and describes the ongoing care that the patient will require after they leave hospital. It includes a summary of any changes in medicines, strategies to help reduce the risk of delirium and prevent complications from it, and any other ongoing treatments. This plan is provided to the patient and their carer before discharge, and to their general practitioner and other ongoing clinical providers within 48 hours of discharge.

Clinical Care Standards

Introduction

Context

Delirium is an acute change in mental status that is common among older patients in hospital.[1] Despite being a serious condition that is associated with increased mortality[2–4], delirium is poorly recognised, both in Australian hospitals[5,6] and internationally.[7,8] Prevention is the most effective strategy, but outcomes for patients with delirium can also be improved by early intervention.

Delirium is characterised by a disturbance of consciousness, attention, cognition and perception that develops over a short period of time (usually hours to a few days).[2,9] Patients with delirium may be agitated and restless (hyperactive delirium), quiet and withdrawn (hypoactive delirium), or move between these two subtypes (mixed delirium).[1,2]

The burden associated with delirium is high. Often a frightening and isolating experience[10], it is also associated with poor outcomes for patients.[2] Compared with patients of the same age without delirium, patients with delirium have an increased risk of death, increased length of stay, increased risk of falls, a greater chance of being discharged to a higher dependency of care and a greater chance of developing dementia.[1–3]

Delirium is sometimes confused with dementia but there are important differences. The onset of delirium is quick, over hours to a few days, disturbed consciousness and impaired attention are common, and symptoms usually fluctuate. In contrast, onset of dementia is gradual, people with dementia are usually alert, and cognition and symptoms are slowly progressive.[1] Dementia is a risk factor for delirium, which can complicate diagnosis, as some people who present to hospital with delirium may have underlying and undiagnosed dementia.[1]

About 10% to 18% of Australians aged 65 years or older have delirium at the time of admission to hospital, and a further 2% to 8% develop delirium during their hospital stay.[5,11] There are no data on the prevalence of delirium among Aboriginal and Torres Strait Islander peoples, but high rates of dementia and cognitive impairment in some Indigenous communities[12–15] suggests that risk of delirium may be greater than that for the overall Australian population.

Rates of delirium vary according to the healthcare settings, with incidences of 30% or more in patients following cardiac surgery and hip surgery[1], and incidences of 50% or more in adult intensive care units, regardless of patient age.[1,16,17]

While delirium can occur in patients of any age, older patients with cognitive impairment, dementia, severe medical illness or a hip fracture are considered those at greatest risk during a hospital admission.[2] Sensory impairment (difficulty in hearing or seeing), infection, the use of certain medicines or multiple medicines, abnormal serum sodium levels, urinary catheterisation and depression also predispose older patients to develop delirium.[1,18]

Despite guidelines on managing delirium, early detection is poor and most cases of delirium are missed.[5,6,8] Delirium is potentially preventable in more than a third of older people with risk factors.[19] Early identification of patients at risk is important so that effective interventions can be put in place.[1,2] Prompt diagnosis and timely treatment of underlying causes are important for reducing the severity and duration of delirium and risk of complications from it.

The Delirium Clinical Care Standard aims to ensure that patients with delirium at the time of presentation to hospital receive optimal treatment to reduce the duration and severity of the condition. It also aims to ensure that patients at risk of delirium during a hospital admission are identified promptly and receive preventive strategies.

Local monitoring

The Commission has developed the enclosed suite of indicators to support clinical teams and health services across Australia to locally evaluate the implementation of the Clinical Care Standard.

Monitoring the implementation of the clinical care standards will assist in meeting some of the requirements of the National Safety and Quality Health Service (NSQHS) Standards. Information about the NSQHS Standards is available at: **www.safetyandquality.gov.au/accreditation**

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of The Australian Health Ministers' Advisory Council; 2006. Available from: **http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf**

2. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence, 2010.

3. Travers C, Byrne G, Pachana N, Klein K, Gray L. Delirium in Australian hospitals: a prospective study. Current Gerontology and Geriatrics Research. 2013;ArticleID:284780.

4. Siddiqi N, House AO, Holmes JD. Occurrence and outcome of delirium in medical in-patients: a systematic literature review. Age and Ageing. 2006;35(4):350–64.

5. Iseli RK, Brand C, Telford M, LoGuidice D. Delirium in elderly general medical inpatients: a prospective study. Internal Medicine Journal. 2007;37:806–11.

6. Department of Health WA. Delirium model of care. Perth: Aged Care Network, Department of Health, Western Australia; 2008. Available from: **http://www.healthnetworks.health.wa.gov.au/modelsofcare/docs/Delirium_Model_of_Care.pdf**

7. Collins N, Blanchard MR, Tookman A, Sampson EL. Detection of delirium in the acute hospital. Age and Ageing. 2010;39(1):131–5.

8. Han JH, Zimmerman EE, Cutler N, Schnelle J, Morandi A, Dittus RS, et al. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Academic Emergency Medicine. 2009;16(3):193–200.

9. Inouye S, Westendorp R, Saczynski J. Delirium in elderly people. The Lancet. 2014;383(9920):911–22.

10. Belanger L, Ducharme F. Patients' and nurses' experiences of delirium: a review of qualitative studies. Nursing in Critical Care. 2011;16(6):303–15.

11. Travers C, Byrne G, Pachana N, Klein K, Gray L. Prospective observational study of dementia and delirium in the acute hospital setting. Internal Medicine Journal. 2012;43(3):262–9.

Clinical Care Standards

Introduction

12. Smith K, Flicker L, Lautenschlager NT, Almeida OP, Atkinson D, Dwyer A, et al. High prevalence of dementia and cognitive impairment in Indigenous Australians. Neurology. 2008;71(19):1470–3.

13. Li SQ, Guthridge SL, Eswara Aratchige P, Lowe MP, Wang Z, Zhao Y, et al. Dementia prevalence and incidence among the Indigenous and non-Indigenous populations of the Northern Territory. The Medical Journal of Australia. 2014;200(8):465–9.

14. Radford K, Mack HA, Draper B, Chalkley S, Daylight G, Cumming R, et al. Prevalence of dementia in urban and regional Aboriginal Australians. Alzheimer's and Dementia: the Journal of the Alzheimer's Association. 2015;11(3):271–9.

15. Lo Giudice D, Smith K, Fenner S, Hyde Z, Atkinson D, Skeaf L, et al. Incidence and predictors of cognitive impairment and dementia in Aboriginal Australians: a follow-up study of 5 years. Alzheimer's and Dementia: the Journal of the Alzheimer's Association. 2016;12(3):252–261.

16. Reade MC, Eastwood GM, Peck L, Bellomo R, Baldwin I. Routine use of the confusion assessment method for the intensive care unit (CAM-ICU) by bedside nurses may underdiagnose delirium. Critical Care and Resuscitation: Journal of the Australasian Academy of Critical Care Medicine. 2011;13(4):217–24.

17. Salluh JI, Wang H, Schneider EB, Nagaraja N, Yenokyan G, Damluji A, et al. Outcome of delirium in critically ill patients: systematic review and meta-analysis. British Medical Journal. 2015;350:h2538.

18. Ahmed S, Leurent B, Sampson EL. Risk factors for incident delirium among older people in acute hospital medical units: a systematic review and meta-analysis. Age and Ageing. 2014;43(3):326–33.

19. Hshieh TT, Yue J, Oh E, Puelle M, Dowal S, Travison T, et al. Effectiveness of multicomponent nonpharmacological delirium interventions: a meta-analysis. Journal of the American Medical Association Internal Medicine. 2015;175(4):512–20.

Scope and definition of delirium used for this indicator specification and data sources

Scope

This Clinical Care Standard relates to the care that adult patients (18 years and older) with suspected delirium and adult patients at risk of developing delirium should receive from presentation to hospital through to transition to primary care.

The care of children and young people (under the age of 18 years) with delirium, and the care of patients with delirium tremens (alcohol or substance withdrawal delirium) are outside the scope of this clinical care standard. Specific guidance on the management of delirium tremens exists and should be consulted if appropriate.[a]

Many quality statements in the Delirium Clinical Care Standard also apply to patients receiving palliative or end-of-life care. Specific guidance on the management of delirium in patients receiving palliative care should also be consulted if appropriate.

While the Delirium Clinical Care Standard applies to the care received by patients in hospitals, it can be adapted for use by residential aged care facilities.

Definition

These specifications refer to patients with delirium. Patients diagnosed with delirium should have this condition coded along with other conditions and complications using the International Classification of Diseases – 10th Revision – Australian Modification (ICD-10-AM) codes. The ICD-10-AM diagnosis codes for delirium include:[b]

- F05.0 Delirium not superimposed on dementia, so described
- F05.1 Delirium superimposed on dementia
- F05.8 Other delirium (includes delirium of mixed origin)
- F05.9 Delirium, unspecified.

They may occur as a principal diagnosis[c] for the episode, or as an additional diagnosis.[d]

METeOR (Metadata Online Registry) is the national metadata registry.[e] Where a data element is part of the National Health Data Dictionary, the METeOR identifier is referenced.

Data sources

Most of the data underlying these indicator specifications will require collection from local sources, chiefly, by a chart audit. There are instances where these specifications suggest the use of data from hospitals' patient administration systems and incident reporting and management systems.

a Therapeutic Guidelines Limited, Psychotropic Expert Group. Therapeutic guidelines: psychotropic – delirium. Melbourne: Therapeutic Guidelines Limited, 2013 and National Institute for Health and Care Excellence. Alcohol-use disorders: Diagnosis and clinical management of alcohol-related physical complications. London: National Institute for Health and Care Excellence, 2010 [cited April 2015]. Available from: www.tg.org.au

b ICD-10-AM (9th edition).

c METeOR identifier: 514304. Definition: 'The diagnosis established after study to be chiefly responsible for occasioning a patient's service event or episode'.

d METeOR identifier: 514271. Definition: 'A condition or complaint either coexisting with the principal diagnosis or arising during the episode of admitted patient care, episode of residential care or attendance at a healthcare establishment'.

e See meteor.aihw.gov.au/content/index.phtml/itemId/181162

Clinical Care Standards

Guide for use of these indicators

These indicators are intended for local use by hospitals and local hospital networks (LHNs). There are no benchmarks set for any of the process[a] indicators in this indicator specification. Hospitals using these indicators can compare their results against themselves during a previous period, other hospitals in the LHN, or other external hospitals with whom they have made such arrangements. Hospitals may also look to the literature for the experiences of other hospitals.

For *Indicator 2c: Rate of delirium among acute admitted patients* and *Indicator 2d: Rate of delirium among acute admitted patients with onset during hospital stay*, the Commission will provide the national rates, which hospitals can use to compare their rates against. The national rates are not benchmarks, and are not the desired results for these indicators. They will be provided as a reference to allow hospitals to investigate whether they are diagnosing and reporting delirium at the same rate as other Australian hospitals.

Note also that for the process indicators, a higher proportion is not necessarily the desired outcome. For example, for *Indicator 6b: Proportion of patients with delirium prescribed antipsychotic medicines in hospital*, a lower proportion is desirable. This also applies to *Indicator 5c: Proportion of patients with delirium who have had a fall or a pressure injury during their hospital stay* and *Indicator 7b: Proportion of older patients with current or resolved delirium who are readmitted for delirium within 28 days*.

This indicator specification is supported by the *Guide for use and data dictionary for the Delirium Clinical Care Standard*, which contains patient-level and hospital-level data collection tools.

a In this document, process indicators are those that measure the extent of the application of a particular practice to individual patients. With 'structural' indicators, the desired practice is not measured against an individual, but rather that there is evidence that the facility has implemented arrangements consistent with the quality statement. 'Outcome' indicators measure the outcomes of care, such as recovery from a condition, restoration of function or survival of patients.

Quality statement 1
Early screening

A patient presenting to hospital with one or more key risk factors for delirium receives cognitive screening using a validated test. In addition, the patient and their carer are asked about any recent changes (within hours or days) in the patient's behaviour or thinking.

Indicator 1a: Evidence of local arrangements for cognitive screening of patients presenting to hospital with one or more key risk factors for delirium

Definitional attributes

Name: Evidence of local arrangements for cognitive screening of patients presenting to hospital with one or more key risk factors for delirium.

Rationale: Cognitive screening on presentation helps identify patients who should be assessed for delirium and is useful for monitoring delirium onset during a hospital stay.[1,2,3] Patients who have cognitive impairment or who have had a recent change in behaviour or thinking may have delirium and need to be assessed for it.[4]

Collection and usage attributes

Computation: Documented local arrangements for cognitive screening of patients presenting to hospital with one or more key risk factors for delirium. Key risk factors for delirium include:[4]

- age 65 years or older (45 years or older for Aboriginal and Torres Strait Islander peoples[5])
- known cognitive impairment/dementia
- severe medical illness
- current hip fracture.

Cognitive screening should be based on the use of a validated test. There are a range of validated cognitive function tests available.[2] Examples include:

- Abbreviated Mental Test Score (AMTS)[6]
- 4AT test: screening instrument for cognitive impairment and delirium[7]
- Standardised Mini-Mental State Examination (SMMSE).[8]

Other tools may be more appropriate for people from culturally and linguistically diverse groups, such as the Rowland Universal Dementia Assessment Scale (RUDAS)[9] and the Kimberly Indigenous Cognitive Assessment (KICA)Tools.[10]

The documentation may be in the form of:

- clinical guidelines
- protocols
- a clinical pathway included as part of the patient's medical notes/record.

The hospital should specify the test that it uses for cognitive screening in its documentation.

Clinical Care Standards

Quality statement 1
Early screening

Collection and usage attributes
(continued)

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

Setting: Hospital

Comments: This indicator was sourced from the *Key principles for care of confused hospitalised older persons*.[5]

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
2. O'Keeffe ST, Mulkerrin EC, Nayeem K, Varughese M, Pillay I. Use of serial mini-mental state examinations to diagnose and monitor delirium in elderly hospital patients. Journal of the American Geriatrics Society. 2005;53(5):867–70.
3. Jitapunkul S, Pillay I, Ebrahim S. Delirium in newly admitted elderly patients: a prospective study. The Quarterly Journal of Medicine. 1992;83(300):307–14.
4. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
5. Agency for Clinical Innovation. Key Principles for Care of Confused Hospitalised Older Persons. Sydney: Agency for Clinical Innovation; 2014.
6. Hodkinson HM. Evaluation of a mental test score for assessment of mental impairment in the elderly. Age and Ageing. 1972;1(4):233–8.
7. Bellelli G, Morandi A, Davis DH, Mazzola P, Turco R, Gentile S, et al. Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. Age and Ageing. 2014;43(4):496–502.
8. Molloy DW and Standish TI. A guide to the standardized mini-mental state examination. International Psychogeriatrics. 1997;9(Supplement 1):87–94; discussion 1997: 143–50.
9. Storey JE, Rowland JT, Basic D, Conforti DA, Dickson HG. The Rowland universal dementia assessment scale (RUDAS): a multicultural cognitive assessment scale. International Psychogeriatrics. 2004;16(1):13–31.
10. LoGiudice D, Smith K, Thomas J, Lautenschlager NT, Almeida OP, Atkinson D, et al. Kimberley Indigenous cognitive assessment tool (KICA): development of a cognitive assessment tool for older Indigenous Australians. International Psychogeriatrics. 2006;18(2):269–80.

Quality statement 1
Early screening

Indicator 1b: Proportion of older patients undergoing cognitive screening within 24 hours of admission to hospital using a validated test

Definitional attributes

Name: Proportion of older patients undergoing cognitive screening within 24 hours of admission to hospital using a validated test.

Rationale: Cognitive screening on presentation helps identify patients who should be assessed for delirium and is useful for monitoring delirium onset during a hospital stay.[1,2,3] Patients who have cognitive impairment or who have had a recent change in behaviour or thinking may have delirium and need to be assessed for it.[4]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of acute overnight patients 65 years or older[1] (or 45 years or older for Aboriginal and Torres Strait Islander peoples[5]) undergoing cognitive screening within 24 hours of admission to hospital using a validated test.

Numerator criteria:

Inclusions

There are a range of validated cognitive function tests available.[6] Examples include:

- Abbreviated Mental Test Score (AMTS)[7]
- 4AT test: screening instrument for cognitive impairment and delirium[8]
- SMMSE.[9]

Other tools may be more appropriate for some people from culturally and linguistically diverse groups, such as the RUDAS[10] and the KICA tools.[11]

Only include overnight,[a] acute,[b] admitted patients.

In the case of patients that initially present to an emergency department, the time frame 'within 24 hours of admission to hospital' should be counted from the time the patient presents to the emergency department (i.e. rather than from the time that they are transferred to a ward).

Exclusions

Patients who died on the day of presentation to the emergency department or within 24 hours of admission.

a Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

b See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

Clinical Care Standards

Quality statement 1
Early screening

Collection and usage attributes
(continued)

Denominator: Number of overnight acute patients 65 years or older[1] (or 45 years or older for Aboriginal and Torres Strait Islander peoples[5]) admitted to hospital.

Denominator criteria:

Inclusions

Only include overnight,[a] acute,[b] admitted patients.

Exclusions

Patients who died on the day of presentation to the emergency department or within 24 hours of admission.

Setting: Hospital

Comments: This indicator was sourced from the *Key principles for care of confused hospitalised older persons*[5] *and The Ontario senior friendly hospital strategy delirium and functional decline indicators*.[12]

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
2. O'Keeffe ST, Mulkerrin EC, Nayeem K, Varughese M, Pillay I. Use of serial mini-mental state examinations to diagnose and monitor delirium in elderly hospital patients. Journal of the American Geriatrics Society. 2005;53(5):867–70.
3. Jitapunkul S, Pillay I, Ebrahim S. Delirium in newly admitted elderly patients: a prospective study. The Quarterly Journal of Medicine. 1992;83(300):307–14.
4. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
5. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.
6. Australian Commission on Safety and Quality in Health Care. A better way to care: safe and high-quality care for patients with cognitive impairment (dementia and delirium) in hospitals – actions for health service managers. Sydney: Australian Commission on Safety and Quality in Health Care; 2014.
7. Hodkinson HM. Evaluation of a mental test score for assessment of mental impairment in the elderly. Age and Ageing. 1972;1(4):233–8.
8. Bellelli G, Morandi A, Davis DH, Mazzola P, Turco R, Gentile S, et al. Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. Age and Ageing. 2014;43(4):496–502.
9. Molloy DW and Standish TI. A guide to the standardized mini-mental state examination. International Psychogeriatrics. 1997;9(Supplement 1):87–94; discussion 1997:143–50.
10. Storey JE, Rowland JT, Basic D, Conforti DA, Dickson HG. The Rowland universal dementia assessment scale (RUDAS): a multicultural cognitive assessment scale. International Psychogeriatrics. 2004;16(1):13–31.
11. LoGiudice D, Smith K, Thomas J, Lautenschlager NT, Almeida OP, Atkinson D, et al. Kimberley Indigenous cognitive assessment tool (KICA): development of a cognitive assessment tool for older Indigenous Australians. International Psychogeriatrics. 2006;18(2):269–80.
12. Wong K, Tsang A, Liu B, Schwartz R. The Ontario senior friendly hospital strategy delirium and functional decline indicators. Toronto: Ontario Local Health Integration Network; 2012.

a Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

b See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

Quality statement 2
Assessing for delirium

A patient with cognitive impairment on presentation to hospital, or who has an acute change in behaviour or cognitive function during a hospital stay, is promptly assessed for delirium by a clinician trained and competent in delirium diagnosis and the use of a validated diagnostic tool.

The patient and their carer are asked about any recent changes in the patient's behaviour or thinking. The patient's diagnosis is discussed with them and is documented.

Indicator 2a: Evidence of training sessions undertaken by staff in the use of a validated diagnostic tool for delirium

Definitional attributes

Name: Evidence of training sessions undertaken by staff in the use of a validated diagnostic tool for delirium.

Rationale: Early diagnosis and prompt treatment offers patients with delirium the best chance of recovery.[1] A range of clinicians can accurately diagnose delirium using a validated assessment tool, but training in the tool is essential.[2]

Collection and usage attributes

Computation: Documented evidence of training undertaken by staff in the use of a validated diagnostic tool for delirium.

Staff predominantly includes nursing staff, but may also include medical and allied health staff.

Some validated diagnostic tools for delirium include:

- Confusion Assessment Method (CAM)[3,4]
- Confusion Assessment Method (CAM-ICU)[5]
- 3D-CAM.[6]

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

Setting: Hospital

Comments: This indicator was sourced from the *Key principles for care of confused hospitalised older persons*.[7]

Clinical Care Standards

Quality statement 2
Assessing for delirium

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
2. Wei LA, Fearing MA, Sternberg EJ, Inouye SK. The Confusion Assessment Method: a systematic review of current usage. Journal of the American Geriatrics Society. 2008;56(5):823–30.
3. Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: the Confusion Assessment Method. A new method for detection of delirium. Annals of Internal Medicine. 1990;113(12):941–8.
4. Shi Q, Warren L, Saposnik G, Macdermid JC. Confusion Assessment Method: a systematic review and meta-analysis of diagnostic accuracy. Neuropsychiatric Disease and Treatment. 2013;9:1359–70.
5. Ely EW, Margolin R, Francis J, May L, Truman B, Dittus R, et al. Evaluation of delirium in critically ill patients: validation of the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU). Critical Care Medicine. 2001;29(7):1370–9.
6. Marcantonio ER, Ngo LH, O'Connor M, Jones RN, Crane PK, Metzger ED, et al. 3D-CAM: derivation and validation of a 3-minute diagnostic interview for CAM-defined delirium: a cross-sectional diagnostic test study. Annals of Internal Medicine. 2014;161(8):554–61.
7. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

Quality statement 2
Assessing for delirium

Indicator 2b: Proportion of patients who screen positive for cognitive impairment at admission who are assessed for delirium using a validated diagnostic tool

Definitional attributes

Name: Proportion of patients who screen positive for cognitive impairment at admission who are assessed for delirium using a validated diagnostic tool.

Rationale: Early diagnosis and prompt treatment offers patients with delirium the best chance of recovery.[1]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients who screen positive for cognitive impairment at admission who are assessed for delirium using a validated tool.

Numerator criteria:

Inclusions

'At admission' means within 24 hours of admission to hospital. This includes any time that the patient may have spent in the emergency department.

'Screen positive for cognitive impairment' means that a score was obtained for the patient on the validated test for cognitive impairment used locally, and this score was indicative of cognitive impairment according to the parameters set by the tool and agreed locally.

See indicator 1b for a list of validated tests for cognitive impairment.

Some validated diagnostic tools for delirium include:

- Confusion Assessment Method (CAM)[2,3]
- Confusion Assessment Method (CAM-ICU)[4]
- 3D-CAM.[5]

The assessment must involve patients and/or their carer, asking if they have noticed any recent changes (within hours or days) in the patient's behaviour or mental status.[6] The clinician undertaking the assessment should also discuss the patient's diagnosis with the patient and/or their carer and document the diagnosis and who it has been discussed with in the patient's medical record.[6]

Exclusions

Nil

Denominator: Number of patients who screen positive for cognitive impairment at admission.

Clinical Care Standards

Quality statement 2
Assessing for delirium

Collection and usage attributes
(continued)

Denominator criteria:

Inclusions

'Screen positive for cognitive impairment' means that a score was obtained for the patient on the validated test for cognitive impairment used locally; and this was indicative of cognitive impairment according to the parameters set by the tool and agreed locally.

See indicator 1b for a list of validated tests for cognitive impairment.

'At admission' means within 24 hours of admission to hospital. This includes any time that the patient may have spent in the emergency department.

Exclusions

Nil

Setting: Hospital

Comments: This indicator was sourced from *The Ontario senior friendly hospital strategy delirium and functional decline indicators*.[7] It has been modified to include assessment for delirium using a validated tool.

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
2. Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegal AP, Horwitz RI. Clarifying confusion: the confusion assessment method. A new method for detection of delirium. Annals of Internal Medicine. 1990;113(12):941–8.
3. Shi Q, Warren L, Saposnik G, Macdermid JC. Confusion assessment method: a systematic review and meta-analysis of diagnostic accuracy. Neuropsychiatric Disease and Treatment. 2013;9:1359–70.
4. Ely EW, Margolin R, Francis J, May L, Truman B, Dittus R, et al. Evaluation of delirium in critically ill patients: validation of the confusion assessment method for the intensive care unit (CAM-ICU). Critical Care Medicine. 2001;29(7):1370–9.
5. Marcantonio ER, Ngo LH, O'Connor M, Jones RN, Crane PK, Metzger ED, et al. 3D-CAM: derivation and validation of a 3-minute diagnostic interview for CAM-defined delirium: a cross-sectional diagnostic test study. Annals of Internal Medicine. 2014;161(8):554–61.
6. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
7. Wong K, Tsang A, Liu B, Schwartz R. The Ontario senior friendly hospital strategy delirium and functional decline indicators. Toronto: Ontario Local Health Integration Network; 2012.

Quality statement 2
Assessing for delirium

Indicator 2c: Rate of delirium among acute admitted patients

Definitional attributes

Name: Rate of delirium among acute admitted patients.

Rationale: Identifying patients with delirium is the first step in taking action to providing high-quality care. Delirium has been reported to be undiagnosed in up to two-thirds of patients.[1] Low rates of detection may occur for a number of reasons, such as heterogeneity and transient nature of delirium symptoms[1], lack of skills to use a validated tool, and low availability of a validated tool.[2] It may also be the result of lack of documentation of delirium[3] or inaccurate clinical coding.

Note that this is not an outcome indicator.[a] The purpose of this indicator is to identify how well a hospital makes diagnoses of patients with delirium. By comparing with the national rate, the hospital can determine whether delirium is potentially under/misdiagnosed and/or under-reported. This indicator includes patients with delirium at admission and those who acquire delirium during the hospital stay.

Collection and usage attributes

Computation: *(Numerator ÷ denominator)*

Numerator: Sum of episodes that would have occurred if the hospital age and sex specific rates of delirium were experienced among hospitals in the national reference population.

Numerator criteria: See Appendix 1 for a detailed worked example.

Inclusions

Overnight,[b] acute,[c] admitted episodes at this hospital with one of the following diagnosis codes[d] at discharge. Diagnosis codes include:

- F05.0 Delirium not superimposed on dementia, so described
- F05.1 Delirium superimposed on dementia
- F05.8 Other delirium (includes delirium of mixed origin)
- F05.9 Delirium, unspecified.

These are stratified by sex and five-year age groups (beginning at 65 years), and worked out as a rate of the total episodes within each sex and five-year age group (i.e. episodes with delirium divided by total episodes within the sex and five-year age group combination). These rates are then applied to the national reference population by sex and five-year age group combinations. Each sex and five-year age group combination is then summed. This sum is then multiplied by 100.

The national reference population is described in the 'Denominator criteria' below.

Denominator: Sum of episodes from the national reference population.

a See the guide for use of these indicators at the beginning of this document for types of indicators and their definitions.

b Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

c See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

d ICD-10-AM (9th edition).

Clinical Care Standards

Quality statement 2
Assessing for delirium

Collection and usage attributes
(continued)

Denominator criteria:

Inclusions

Includes all overnight,[a] acute,[b] admitted episodes occurring in acute hospitals.[c]

Each sex and five-year age group combination is summed to derive the total sum of episodes.

Setting: Hospital

Comments: Delirium is thought to be under/misdiagnosed and/or under-reported among hospitals. In the early stages of the implementation of the Delirium Clinical Care Standard, this indicator can be used to investigate potential under/misdiagnosis and/or under-reporting of delirium.

Comparison against the national rate can serve as a screen for the hospital as to the level of diagnosis and reporting of delirium. For example, a value lower than the national rate would be used as a marker for investigating potentially ineffective processes for diagnosing and/or reporting delirium. Similarly, a value higher than the national rate could flag effective mechanisms for diagnosing and/or reporting delirium.

This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[4]

References

1. Siddiqi N, House AO, Holmes JD. Occurrence and outcome of delirium in medical in-patients: a systematic literature review. Age and Ageing. 2006;35(4):350–64.
2. Young J, Inouye SK. Delirium in older people. British Medical Journal. 2007;334(7598):842–6.
3. Collins N, Blanchard MR, Tookman A, Sampson EL. Detection of delirium in the acute hospital. Age and Ageing. 2010;39(1):131–5.
4. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

a Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

b See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

c See Australian Institute of Health and Welfare. Australian hospital statistics 2012–13. Canberra: Australian Institute of Health and Welfare; 2014. Includes peer hospital groups A1 to C2, and D1 and D3.

Quality statement 2
Assessing for delirium

Indicator 2d: Rate of delirium among acute admitted patients with onset during the hospital stay

Definitional attributes

Name: Rate of delirium among acute admitted patients with onset during the hospital stay.

Rationale: Identifying patients with delirium is the first step to providing high-quality care. Delirium has been reported to be undiagnosed in up to two-thirds of patients.[1] Low rates of detection may occur for a number of reasons, such as heterogeneity and transient nature of delirium symptoms[1], lack of skills to use a validated tool or lack of availability of a validated tool.[2] It may also be the result of a lack of documentation of delirium[3] and/or inaccurate clinical coding.

Note that this is not an outcome indicator.[a] The purpose of this indicator is to identify how well a hospital makes diagnoses of patients with delirium. By comparing with the national rate, the hospital can determine whether delirium is potentially under/misdiagnosed and/or under-reported. Over time, as diagnosis and reporting/coding of delirium improves, this could be used as an indicator of the effectiveness of strategies that a hospital implements to prevent the onset of delirium among admitted patients.

Collection and usage attributes

Computation: *(Numerator ÷ denominator)*

Numerator: Sum of episodes that would have occurred if the age and sex specific rates of delirium that had an onset during the hospital stay were applied to the national reference population.

Numerator criteria: See Appendix 1 for a detailed worked example.

Inclusions

Overnight,[b] acute,[c] admitted episodes at this hospital with one of the following diagnosis codes[d] at discharge and noted as having an onset during the episode of admitted care.[e] Diagnosis codes include:

- F05.0 Delirium not superimposed on dementia, so described
- F05.1 Delirium superimposed on dementia
- F05.8 Other delirium (includes delirium of mixed origin)
- F05.9 Delirium, unspecified.

a See *Guide for use of these indicators* at the beginning of this document for types of indicators and their definitions.

b Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

c See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

d ICD-10-AM (9th edition).

e See *Episode of admitted patient care – condition onset flag* (COF), METeOR identifier 496512, where value = 1 (condition with onset during the episode of admitted patient care).

Clinical Care Standards

Quality statement 2
Assessing for delirium

Collection and usage attributes
(continued)

Numerator criteria
(continued)**:** These are stratified by sex and five-year age groups (beginning at 65 years), and worked out as a rate of the total episodes within each sex and five-year age group (i.e. episodes with delirium divided by total episodes within the sex and five-year age group combination). These rates are then applied to the national reference population by sex and five-year age group combination. Each sex and five-year age group combination is then summed. This sum is then multiplied by 100.

The national reference population is described in the 'denominator criteria' below.

Denominator: Sum of episodes from the national reference population.

Denominator criteria: *Inclusions*
Includes all overnight,[a] acute,[b] admitted episodes occurring in acute hospitals[c] that report the 'condition onset flag'.[d]

Each sex and five-year age group combination is summed to derive the sum of episodes.

Setting: Hospital

Comments: Although this indicator may also measure the effectiveness of a hospital in preventing delirium during a patient's hospitalisation, currently delirium is thought to be under/misdiagnosed and/or under-reported among hospitals. In the early stages of the implementation of the Delirium Clinical Care Standard, this indicator can be used to investigate potential under/misdiagnosis and/or under-reporting of delirium. Comparison against the national rate can serve as a screen for the hospital as to the level of diagnosis and reporting of delirium. For example, a value lower than the national rate would be used as a marker for investigating potentially ineffective processes for diagnosing and/or reporting delirium. Similarly, a value higher than the national rate could flag effective mechanisms for diagnosing and/or reporting delirium.

This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[4]

References

1. Siddiqi N, House AO, Holmes JD. Occurrence and outcome of delirium in medical in-patients: a systematic literature review. Age and Ageing. 2006;35(4):350–64.
2. Young J, Inouye SK. Delirium in older people. British Medical Journal. 2007;334(7598):842–6.
3. Collins N, Blanchard MR, Tookman A, Sampson EL. Detection of delirium in the acute hospital. Age and Ageing. 2010;39(1):131–5.
4. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

a Where *Episode of admitted patient care – separation date* (METeOR identifier 270025) occurs on the next calendar day or any other day subsequent to the *Episode of admitted patient care – admission date* (METeOR identifier 269967).

b See *Hospital service – care type*, METeOR identifier 584408, where value = 1 (acute care).

c See Australian Institute of Health and Welfare. Australian hospital statistics 2012–13. Canberra: AIHW; 2014. Includes peer hospital groups A1 to C2, and D1 and D3.

d See *Episode of admitted patient care – condition onset flag (COF)*, METeOR identifier 496512.

Quality statement 3
Interventions to prevent delirium

A patient at risk of delirium is offered a set of interventions to prevent delirium and regular monitoring for changes in behaviour, cognition and physical condition.

Indicator 3a: Evidence of local arrangements for implementing interventions to prevent delirium for at-risk patients

Definitional attributes

Name: Evidence of local arrangements for implementing interventions to prevent delirium for at-risk patients

Rationale: Delirium may be prevented in more than one-third of patients.[1] Multicomponent interventions reduce the incidence of delirium and may prevent complications, such as falls.[1] Regular monitoring of patients at risk of delirium for changes in behaviour, cognition and physical condition can assist the prompt detection of delirium.[2]

Collection and usage attributes

Computation: Documented evidence of local arrangements for implementing interventions for patients identified as being at risk of developing delirium.

Interventions found to be effective in preventing delirium that may be documented in the local protocol include:[2,3]

- medication review
- correction of dehydration/ malnutrition/constipation
- mobility activities
- oxygen therapy
- pain assessment and management
- regular reorientation and reassurance
- activities for stimulating cognition
- non-drug measures to help promote sleep
- assistance for patients who usually wear hearing or visual aids.

These interventions should be tailored to individuals depending on the individual's clinical risk factors and the setting.[3,4] The local arrangements should provide for tailored interventions. They must include a process for documenting the interventions and discussing with the patient and/or their carer the interventions being put in place. They must also include encouraging carers to be involved (e.g. providing orientation and reassurance to the patient).

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

Setting: Hospital

Comments: This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*[5] *and Delirium NICE Quality Standard 63.*[6]

Clinical Care Standards

Quality statement 3
Interventions to prevent delirium

References

1. Hshieh TT, Yue J, Oh E, Puelle M, Dowal S, Travison T, et al. Effectiveness of multicomponent nonpharmacological delirium interventions: a meta-analysis. Journal of the American Medical Association Internal Medicine. 2015;175(4):512–20.
2. Witlox J, Eurelings LS, de Jonghe JF, Kalisvaart KJ, Eikelenboom P, van Gool WA. Delirium in elderly patients and the risk of postdischarge mortality, institutionalization, and dementia: a meta-analysis. Journal of the American Medical Association. 2010;304(4):443–51.
3. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
4. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
5. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.
6. National Institute for Health and Care Excellence. Delirium NICE Quality Standard 63. London: National Institute for Health and Care Excellence; 2014.

Quality statement 4
Identifying and treating underlying causes

A patient with delirium is offered a set of interventions to treat the causes of delirium, based on a comprehensive assessment.

Indicator 4a: Proportion of patients with delirium who have a comprehensive assessment to investigate cause(s) of delirium

Definitional attributes

Name: Proportion of patients with delirium who have a comprehensive assessment to investigate cause(s) of delirium.

Rationale: Identifying and treating the causes of delirium early is likely to reduce the duration and severity of delirium.[1,2]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with delirium who have a comprehensive assessment to investigate cause(s) of delirium during their hospital stay.

Numerator criteria:

Inclusions

Patients with delirium for whom a comprehensive assessment to investigate the cause(s) of their delirium is undertaken during the hospital stay and is documented in their medical record.

The comprehensive assessment must include:[1–3]

- a medical history — paying close attention to the patient's medication history and their pain management needs
- a physical examination
- investigations (for example blood and urine tests), according to the patient's medical history and physical examination.

Exclusions

Nil

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: N/A

References

1. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
2. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
3. Australian and New Zealand Society for Geriatric Medicine. Position statement 13, delirium in older people. Sydney: Australian and New Zealand Society for Geriatric Medicine; 2012.

Clinical Care Standards

Quality statement 4
Identifying and treating underlying causes

Indicator 4b: Proportion of patients with delirium who receive a set of interventions to treat the causes of delirium, based on a comprehensive assessment

Definitional attributes

Name: Proportion of patients with delirium who receive a set of interventions to treat the causes of delirium, based on a comprehensive assessment.

Rationale: A range of risk factors consistently associated with the incidence of delirium have been identified in the literature.[1] Some of these may be modifiable, for example, medical illness related factors or laboratory abnormalities such as low albumin and polypharmacy. Identifying underlying causes of delirium can help to target interventions.[2]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with delirium who receive a set of interventions to treat the causes of delirium, based on a comprehensive assessment.

Numerator criteria:

Inclusions

Patients with delirium who receive tailored interventions to treat the causes of their delirium[1,3,4]

The interventions should be documented in the patient's medical record.

Exclusions

Nil

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: This indicator was sourced from *The Ontario senior friendly hospital strategy delirium and functional decline indicators*.[5]

References

1. Australian and New Zealand Society for Geriatric Medicine. Position statement 13, delirium in older people. Sydney: Australian and New Zealand Society for Geriatric Medicine; 2012.
2. Ahmed S, Leurent B, Sampson EL. Risk factors for incident delirium among older people in acute hospital medical units: a systematic review and meta-analysis. Age and Ageing. 2014;43(3):326–33.
3. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
4. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
5. Wong K, Tsang A, Liu B, Schwartz R. The Ontario senior friendly hospital strategy delirium and functional decline indicators. Toronto: Ontario Local Health Integration Network; 2012.

Quality statement 5
Preventing falls and pressure injuries

A patient with delirium receives care based on their risk of falls and pressure injuries.

Indicator 5a: Evidence of local arrangements for patients with delirium to be assessed for risk of falls and pressure injuries

Definitional attributes

Name: Evidence of local arrangements for patients with delirium to be assessed for risk of falls and pressure injuries.

Rationale: Patients with delirium are at greater risk of adverse events, including falls[1,2,3] and pressure injuries.[2,3]

Collection and usage attributes

Computation: Documented evidence of local arrangements for patients with delirium to be assessed for risk of falls and pressure injuries.

Refer to the NSQHS Standards: *Standard 8: Preventing and managing pressure injuries;* and *Standard 10: Preventing falls and harm from falls*.

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

Setting: Hospital

Comments: This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[4]

References

1. Travers C, Byrne G, Pachana N, Klein K, Gray L. Delirium in Australian hospitals: a prospective study. Current Gerontology and Geriatrics Research. 2013;ArticleID:284780.
2. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. The Lancet. 2014;383(9920):911–22.
3. Maher S, Almeida O. Delirium in the elderly: another medical emergency. Current Therapeutics. 2002;43(3):39–45.
4. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

Clinical Care Standards

Quality statement 5
Preventing falls and pressure injuries

Indicator 5b: Proportion of patients with delirium assessed for risk of falls and pressure injuries

Definitional attributes

Name: Proportion of patients with delirium assessed for risk of falls and pressure injuries.

Rationale: Patients with delirium are at greater risk of adverse events, including falls[1,2,3] and pressure injuries.[2,3]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with delirium assessed for risk of falls and pressure injuries.

Numerator criteria:

Inclusions

Patients with delirium assessed for risk of falls and pressure injuries.

Assessment should be systematic, based on a local assessment tool, and documented in the patient's medical record.

Exclusions

Nil

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[4]

References

1. Travers C, Byrne G, Pachana N, Klein K, Gray L. Delirium in Australian hospitals: a prospective study. Current Gerontology and Geriatrics Research. 2013;ArticleID:284780.
2. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. The Lancet. 2014;383(9920):911–22.
3. Maher S, Almeida O. Delirium in the elderly: another medical emergency. Current Therapeutics. 2002;43(3):39–45.
4. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

Quality statement 5
Preventing falls and pressure injuries

Indicator 5c: Proportion of patients with delirium who have had a fall or a pressure injury during their hospital stay

Definitional attributes

Name: Proportion of patients with delirium who have had a fall or a pressure injury during their hospital stay.

Rationale: Patients with delirium are at greater risk of adverse events, including falls[1,2,3] and pressure injuries.[2,3]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with delirium who have had a fall or a pressure injury during their hospital stay.

Numerator criteria:

Inclusions

Patients with a fall and/or a pressure injury recorded in the hospital's incident reporting and management system.

Only count stage II, III or IV pressure injuries, as described below:[4,5]

- Stage II pressure injury: described as partial thickness skin loss (partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, with slough).
- Stage III pressure injury: described as full thickness skin loss (subcutaneous fat may be visible but bone, tendon or muscle are not fully exposed).
- Stage IV pressure injury: described as full thickness tissue loss (full thickness tissue loss with exposed bone, tendon or muscle).

Only count falls and/or pressure injuries noted as occurring during the hospital stay.

Exclusions

Patients with stage I pressure injury: described as non-blanchable erythema (intact skin with non-blanchable redness of a localised area usually over a bony prominence).

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[6]

References

1. Travers C, Byrne G, Pachana N, Klein K, Gray L. Delirium in Australian hospitals: a prospective study. Current Gerontology and Geriatrics Research. 2013;ArticleID:284780.
2. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. The Lancet. 2014;383(9920):911–22.
3. Maher S, Almeida O. Delirium in the elderly: another medical emergency. Current Therapeutics. 2002;43(3):39–45.
4. National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel (EPUAP). Prevention and treatment of pressure ulcers: clinical practice guideline. Washington DC: National Pressure Ulcer Advisory Panel; 2009.
5. Australian Wound Management Association. Pan Pacific clinical practice guideline for the prevention and management of pressure injury. Osborne Park, WA; 2012: Cambridge Media; 2012.
6. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

Clinical Care Standards

Quality statement 6
Minimising use of antipsychotic medicines

Treatment with an antipsychotic medicine is only considered if a patient with delirium is distressed and the cause of their distress cannot be addressed and non-drug strategies have failed to ease their symptoms.[a]

Indicator 6a: Evidence of local arrangements to ensure that patients with delirium are not routinely prescribed antipsychotic medicines

Definitional attributes

Name: Evidence of local arrangements to ensure that patients with delirium are not routinely prescribed antipsychotic medicines.

Rationale: Antipsychotic medicines have a number of serious adverse effects for older people and can worsen delirium.[1,2] Reserving antipsychotic medicines for patients who are severely distressed and in whom non-drug strategies are ineffective may help reduce the incidence of adverse drug events.[2,3]

Collection and usage attributes

Computation: Documented evidence of local arrangements to ensure that patients with delirium are not prescribed an antipsychotic medicine unless they have significant distress and non-drug strategies are ineffective.[2,3]

The local protocol should include a statement that other psychotropic medicines (for example, benzodiazepines) are not an appropriate alternative to an antipsychotic medicine.[4]

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

Setting: Hospital

Comments: This indicator has been sourced from the *Delirium NICE Quality Standard 635* and the *Key principles for care of confused hospitalised older persons*.[6]

References

1. Therapeutic Guidelines Limited, Psychotropic Expert Group. Therapeutic guidelines: psychotropic – delirium. Melbourne: Therapeutic Guidelines Limited, 2013 [cited April 2015]. Available from: www.tg.org.au
2. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
3. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
4. Australian Medicines Handbook. Aged care companion. Adelaide: Australian Medicines Handbook Pty Ltd; 2014.
5. National Institute for Health and Care Excellence. Delirium NICE Quality Standard 63. London: National Institute for Health and Care Excellence; 2014.
6. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

a Antipsychotic medicines do not have Australian marketing approval for treating delirium.

Quality statement 6
Minimising use of antipsychotic medicines

Indicator 6b: Proportion of patients with delirium prescribed antipsychotic medicines in hospital

Definitional attributes

Name: Proportion of patients with delirium prescribed antipsychotic medicines in hospital.

Rationale: Antipsychotic medicines have a number of serious adverse effects for older people and can worsen delirium.[1,2] Reserving antipsychotic medicines for patients who are severely distressed and in whom non-drug strategies are ineffective may help reduce the incidence of adverse drug events.[2,3] Other psychotropic medicines (for example, benzodiazepines) are not an appropriate alternative to an antipsychotic medicine.[3,4]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with delirium for whom an antipsychotic medicine was prescribed during the hospital admission.

Numerator criteria:

Inclusions
Includes prescription for regular and 'as required' (PRN) antipsychotics.

Exclusions
Nil

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: Antipsychotic medicines include[1,2]: haloperidol, olanzapine, quetiapine, risperidone, amisulpride, aripiprazole, asenapine, chlorpromazine, clozapine, droperidol, flupenthixol, fluphenazine, paliperidone, pericyazine, quetiapine, trifluoperazine, ziprasidone and zuclopenthixol.

This indicator is best derived by obtaining information about prescriptions dispensed from the hospital's pharmacy system. The most practical way to derive this information is to generate a list of all patients with delirium for the period, and obtain a report from the pharmacy dispensing system of the prescriptions of antipsychotic medicines for these patients.

This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[5]

References

1. Therapeutic Guidelines Limited, Psychotropic Expert Group. Therapeutic guidelines: psychotropic – delirium. Melbourne: Therapeutic Guidelines Limited, 2013 [cited April 2015]. Available from: www.tg.org.au
2. National Institute for Health and Care Excellence. Delirium: diagnosis, prevention and management; Clinical Guideline 103. London: National Institute for Health and Care Excellence; 2010.
3. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
4. Australian Medicines Handbook. Aged care companion. Adelaide: Australian Medicines Handbook Pty Ltd; 2014.
5. Agency for Clinical Innovation. Key principles for care of confused hospitalised older persons. Sydney: Agency for Clinical Innovation; 2014.

Clinical Care Standards

Quality statement 7
Transition from hospital care

Before a patient with current or resolved delirium leaves hospital, the patient and their carer are involved in the development of an individualised care plan and are provided with information about delirium. The plan is developed collaboratively with the patient's general practitioner and describes the ongoing care that the patient will require after they leave hospital. It includes a summary of any changes in medicines, strategies to help reduce the risk of delirium and prevent complications from it, and any other ongoing treatments. This plan is provided to the patient and their carer before discharge, and to their general practitioner and other ongoing clinical providers within 48 hours of discharge.

Indicator 7a: Proportion of patients with current or resolved delirium who have an individualised care plan

Definitional attributes

Name: Proportion of patients with current or resolved delirium who have an individualised care plan.

Rationale: Effective communication between hospital clinicians and ongoing clinical providers is essential for the ongoing care and recovery of patients with delirium[1], many of whom may have unresolved symptoms at the time of discharge.[2] Involving patients and carers in the development of the care plan allows treatment goals to be tailored to the patient's needs and circumstances.

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with current or resolved delirium who have an individualised care plan at discharge.

Numerator criteria:

Inclusions

The plan should be developed collaboratively with the patient's general practitioner, and involving the patient and their carer. It should be documented, and include:

- a description of the patient's diagnosis
- the patient's goals of care
- current list of medicines and the conditions for which they are prescribed
- if prescribed, a plan for ongoing review and withdrawal of antipsychotic medicines
- any other medicines that have been discontinued and the reasons for discontinuing them
- any ongoing treatments that the patient needs for delirium and any other health conditions
- strategies that can reduce the patient's risk of delirium, or prevent complications from it
- community support services to which the patient is referred.

Quality statement 7
Transition from hospital care

Collection and usage attributes
(continued)

Numerator criteria
(continued)**:** The plan should be provided:

- to the patient and their carer before they leave hospital
- to the patient's general practitioner and other ongoing clinical providers within 48 hours of the patient leaving hospital.

Exclusions
Nil

Denominator: Number of patients discharged with current or resolved delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: This indicator has been sourced from the *Key principles for care of confused hospitalised older persons*.[1]

References

1. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf
2. Wong K, Tsang A, Liu B, Schwartz R. The Ontario senior friendly hospital strategy delirium and functional decline indicators. Toronto: Ontario Local Health Integration Network; 2012.

Clinical Care Standards

Quality statement 7
Transition from hospital care

Indicator 7b: Proportion of older patients with current or resolved delirium who are readmitted for delirium within 28 days

Definitional attributes

Name: Proportion of older patients with current or resolved delirium who are readmitted for delirium within 28 days.

Rationale: It is common for patients to be discharged from hospital settings without full resolution of delirium symptoms[1]. For these patients, and for those with resolved delirium, it is essential that the person's family, general practitioner and other relevant service providers are informed of their status and ongoing professional monitoring, treatment and support is scheduled.[2]

Collection and usage attributes

Computation: *(Numerator ÷ denominator) x 100*

Numerator: Number of patients with current or resolved delirium readmitted to hospital for delirium within 28 days following discharge from the initial episode during which the delirium was diagnosed.

Numerator criteria:

Inclusions

Patients with current or resolved delirium readmitted to hospital within 28 days following discharge from the initial episode during which the delirium was diagnosed.

The readmission should be for delirium, including as a principal diagnosis[a], any one of [b]:

- F05.0 Delirium not superimposed on dementia, so described
- F05.1 Delirium superimposed on dementia
- F05.8 Other delirium (includes delirium of mixed origin)
- F05.9 Delirium, unspecified.

Exclusions

Patients who died during the episode of care in which the delirium was diagnosed or within 28 days of discharge following this episode.

Denominator: Number of patients discharged from hospital with current or resolved delirium.

Denominator criteria:

Inclusions

Patients with current or resolved delirium.

Exclusions

Patients who died during the admission or within 28 days following admission.

a ICD-10-AM (9th edition). Includes all codes at the four and five-digit level grouping up to these categories, for example, S02 includes S02.0 through to S02.9.

b METeOR identifier: 514304. Definition: 'The diagnosis established after study to be chiefly responsible for occasioning a patient's service event or episode'.

Quality statement 7
Transition from hospital care

Collection and usage attributes
(continued)

Setting: Hospital

Comments: To be effective, this indicator should include readmissions to any hospital. This relies on linked data and/or the use of a unique identifier, preferably across a geographic region at which patients are likely to re-present (for example, an LHN).

This indicator was sourced from *The Ontario senior friendly hospital strategy delirium and functional decline indicators*.[1]

References

1. Wong K, Tsang A, Liu B, Schwartz R. The Ontario senior friendly hospital strategy delirium and functional decline indicators. Toronto: Ontario Local Health Integration Network; 2012.
2. Clinical Epidemiology and Health Service Evaluation Unit. Clinical practice guidelines for the management of delirium in older people. Melbourne: Victorian Government Department of Human Services on behalf of the Australian Health Ministers' Advisory Council; 2006 [cited April 2015]. Available from: http://docs.health.vic.gov.au/docs/doc/A9F4D074829CD75ACA25785200120044/$FILE/delirium-cpg.pdf

Clinical Care Standards

Appendix 1

Worked example for Indicators 2c Rate of delirium among acute admitted patients and 2d Rate of delirium among acute admitted patients with onset during the hospital stay

An example of how these indicators can be calculated for 'hospital X' is as follows. This follows a direct standardisation method:

Step 1

For hospital X, identify the number of episodes with delirium (2c) or delirium onset (2d) recorded for each age/sex group (as per the numerator specification for these indicators) and insert the figures into column A (in Table 1).

For column B, insert the total number of episodes of care for each age/sex group for hospital X.

For column C, insert the total number of episodes of care for each age/sex group in the national reference population.

For column D, calculate the local hospital X rate of episodes with delirium (or delirium onset during the hospitalisation) (column D in Table 1).

Note: Column B and column C include all admissions (patients diagnosed with delirium as well as patients without delirium).

Step 2

Apply the local rate of episodes with delirium (or delirium onset during the hospitalisation) for each age/sex group (column D in Table 1) to the national standard population for hospitalisations for the relevant age/sex groups (column C in Table 1 – to be supplied by the Commission) to estimate the number of episodes that would occur in the national reference population if the local rates applied (column F in Table 1).

Step 3

Calculate the directly standardised rate as follows:

Numerator: Number of episodes that would occur if the rates of delirium from this hospital were applied to the national reference population (the sum of column F in Table 1) multiplied by 100.

Denominator: Number of episodes from the national reference population (the sum of column C in Table 1).

Step 4

Compare the standardised rate to the national rate (to be provided by the Commission), or rates for other hospitals or previous time periods. Note that these comparisons are possible with the use of the direct standardisation method.

Step 5

Calculate the 95% confidence intervals for the estimated rate. This will be based on the estimated rate +/– 1.96 multiplied by the standard error. Table 1 shows an approach for estimating the standard error. First the variance must be estimated (in the example, this is equal to the sum of column G divided by the square of the sum of column C). The standard deviation is the square root of the variance. Alternative methods for estimating variance may be warranted when the number of cases (total of column A) is low.

In the worked example following, hospital X is experiencing fewer cases of delirium (or delirium onset during the hospitalisation) standardised by age and sex compared with the national rate (around 16% lower). This may be due to:

- under-diagnosis of delirium
- more effective prevention of delirium
- a combination of these factors.

Further investigation would be warranted to identify the cause and address the issues identified.

Clinical Care Standards

Appendix 1

Table 1: Calculating indicators 2c and 2d for hospital X

Sex	Age group	Number of episodes with delirium (or delirium onset during the hospitalisation) in hospital X	Number of episodes of care in hospital X	Number of episodes of care in national reference population	Hospital X – age/ sex rates	Hospital X rates applied to national reference population	Variance calculation
		A	B	C	D = A/B	F= C x D	G= (C^2xA/B^2)
F	65–69	10	211	893	0.046	41	173
F	70–74	17	337	877	0.051	44	116
F	75–79	26	347	897	0.074	67	172
F	80–84	22	266	968	0.084	81	295
F	85–89	22	233	681	0.096	65	191
F	90–94	11	113	454	0.098	44	178
F	95+	19	178	227	0.106	24	31
M	65–69	13	290	1,132	0.046	53	205
M	70–74	19	341	1,038	0.056	58	178
M	75–79	28	360	981	0.078	76	208
M	80–84	24	284	906	0.083	75	240
M	85–89	16	176	473	0.094	44	119
M	90–94	14	152	315	0.093	29	61
M	95+	21	197	158	0.106	17	13
Total		**263**	**3,485**	**10,000**	**0.075**	**719**	**2,179**
					Variance estimate		**0.000**
					Standard deviation est.		**0.005**

Direct standardised rate per 100	= (sum of column F) x 100/(sum of column C)
	= 719 x 100/10,000
	= 7.19
Lower confidence limit	= 7.19 – 1.96 x (0.005 x 100)
	= 6.28
Upper confidence limit	= 7.19 + 1.96 x (0.005 x 100)
	= 8.11

If the national rate per 100 = 8.50 then the standardised rate ratio can be calculated as

(7.19/8.50) x 100 = 84.59

A value greater than 100 can be interpreted as reporting above the national rate, and a value lower than 100 can be interpreted as reporting below the national rate. In this case, a rate ratio of 84.59 for hospital X can be interpreted as a hospital reporting a rate of delirium that is less than the national rate (approximately 15% less). This hospital would use this as a flag for investigating potentially ineffective processes for diagnosing and/or reporting delirium. However, the effectiveness of strategies to prevent delirium onset during hospitalisation should also be considered alongside this result.

Australian Commission on Safety and Quality in Health Care

Level 5, 255 Elizabeth Street, SYDNEY NSW 2000
GPO Box 5480, SYDNEY NSW 2001

Telephone: (02) 9126 3600
Fax: (02) 9126 3613

ccs@safetyandquality.gov.au
www.safetyandquality.gov.au