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

Appendix 1
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.
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\(^9\), 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

Introduction


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.

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:

- 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 for the episode, or as an additional diagnosis.

METeOR (Metadata Online Registry) is the national metadata registry. 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.


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
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 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.
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. 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.

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:

- age 65 years or older (45 years or older for Aboriginal and Torres Strait Islander peoples)
- 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. Examples include:

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

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

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.
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

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. 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.

Collection and usage attributes

Computation: \( \frac{\text{Numerator}}{\text{denominator}} \times 100 \)

Numerator: Number of acute overnight patients 65 years or older (or 45 years or older for Aboriginal and Torres Strait Islander peoples) 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. Examples include:
- Abbreviated Mental Test Score (AMTS)
- 4AT test: screening instrument for cognitive impairment and delirium
- SMMSE.

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

Only include overnight, acute, admitted patients.

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).
Quality statement 1
Early screening

Collection and usage attributes (continued)

**Denominator:** Number of overnight acute patients 65 years or older¹ (or 45 years or older for Aboriginal and Torres Strait Islander peoples⁵) admitted to hospital.

**Denominator criteria:**
- **Inclusions:** Only include overnight,¹ acute,⁶ 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 persons⁵ and The Ontario senior friendly hospital strategy delirium and functional decline indicators.¹²

**References**


¹ 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).
⁶ 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-CAM6

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
Quality statement 2
Assessing for delirium

References
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: \( \frac{\text{Numerator}}{\text{Denominator}} \times 100 \)

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.

Exclusions
Nil

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

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
Quality statement 2
Assessing for delirium

Collection and usage attributes
(continued)

Setting: Hospital

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

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

References


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. Low rates of detection may occur for a number of reasons, such as heterogeneity and transient nature of delirium symptoms, lack of skills to use a validated tool, and low availability of a validated tool. It may also be the result of lack of documentation of delirium or inaccurate clinical coding. Note that this is not an outcome indicator. 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: \( \frac{\text{Numerator}}{\text{denominator}} \)

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.

Denominator: Sum of episodes from the national reference population.

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

Inclusions

Overnight, admitted episodes at this hospital with one of the following diagnosis codes 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.

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).
Quality statement 2
Assessing for delirium

Collection and usage attributes

(continued)

Denominator criteria:

- **Inclusions:**
  - Includes all overnight, acute, admitted episodes occurring in acute hospitals.
  - 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.*

References


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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

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: \((\text{Numerator} \div \text{denominator})\)

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.

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\(a\) 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).
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, acute, admitted episodes occurring in acute hospitals that report the ‘condition onset flag’. 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.

References

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).
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. Multicomponent interventions reduce the incidence of delirium and may prevent complications, such as falls. Regular monitoring of patients at risk of delirium for changes in behaviour, cognition and physical condition can assist the prompt detection of delirium.

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:

- 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. 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 and Delirium NICE Quality Standard 63.
Quality statement 3
Interventions to prevent delirium

References
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: \((\text{Numerator} \div \text{denominator}) \times 100\)

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

**Denominator:** Number of patients with delirium.

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

**Setting:** Hospital

**Comments:** N/A

References

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: \(\frac{\text{Numerator}}{\text{Denominator}} \times 100\)

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 criteria: Nil

Setting: Hospital

Comments: This indicator was sourced from The Ontario senior friendly hospital strategy delirium and functional decline indicators.\(^5\)

References

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

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 falls¹,²,³ and pressure injuries.²,³

Collection and usage attributes

Computation: \( \frac{\text{Numerator}}{\text{denominator}} \times 100 \)

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

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\textsuperscript{1,2,3} and pressure injuries.\textsuperscript{2,3}

Collection and usage attributes
Computation: \((\text{Numerator} \div \text{denominator}) \times 100\)
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:\textsuperscript{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).

- 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.\textsuperscript{6}

References
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

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

Numerator: N/A

Numerator criteria: N/A

Denominator: N/A

Denominator criteria: N/A

References


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

Denominator: Number of patients with delirium.

Denominator criteria: Nil

Setting: Hospital

Comments: Antipsychotic medicines include1,2: 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

Collection and usage attributes

Computation: \( \left( \frac{\text{Numerator}}{\text{denominator}} \right) \times 100 \)

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

References


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, many of whom may have unresolved symptoms at the time of discharge. 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:** \((\text{Numerator} \div \text{denominator}) \times 100\)

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

**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

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: \((\text{Numerator} ÷ \text{denominator}) \times 100\)

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.

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.

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.

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\(^a\) 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.

\(^b\) MTeOR 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


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.
### Appendix 1

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

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age group</th>
<th>Number of episodes with delirium (or delirium onset during the hospitalisation) in hospital X</th>
<th>Number of episodes of care in hospital X</th>
<th>Number of episodes of care in national reference population</th>
<th>Hospital X – age/sex rates</th>
<th>Hospital X rates applied to national reference population</th>
<th>Variance calculation</th>
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<tbody>
<tr>
<td>F</td>
<td>65–69</td>
<td>10</td>
<td>211</td>
<td>893</td>
<td>0.046</td>
<td>41</td>
<td>173</td>
</tr>
<tr>
<td>F</td>
<td>70–74</td>
<td>17</td>
<td>337</td>
<td>877</td>
<td>0.051</td>
<td>44</td>
<td>116</td>
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<tr>
<td>F</td>
<td>75–79</td>
<td>26</td>
<td>347</td>
<td>897</td>
<td>0.074</td>
<td>67</td>
<td>172</td>
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<td>F</td>
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<td>266</td>
<td>968</td>
<td>0.084</td>
<td>81</td>
<td>295</td>
</tr>
<tr>
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<td>681</td>
<td>0.096</td>
<td>65</td>
<td>191</td>
</tr>
<tr>
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<td>90–94</td>
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<td>113</td>
<td>454</td>
<td>0.098</td>
<td>44</td>
<td>178</td>
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<td>178</td>
<td>227</td>
<td>0.106</td>
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<td>31</td>
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<td>M</td>
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<td>315</td>
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<tr>
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<td>197</td>
<td>158</td>
<td>0.106</td>
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<td>13</td>
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<tr>
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<td>10,000</td>
<td>0.075</td>
<td>719</td>
<td>2,179</td>
</tr>
</tbody>
</table>

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.