AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

Selected best practices and suggestions for improvement for clinicians and health system managers

Hospital-Acquired Complication **11**

DELIRIUM

	HOSPITAL-ACQUIRED COMPLICATION	RATE[a]
1	Pressure injury	10
2	Falls resulting in fracture or intracranial injury	4
3	Healthcare-associated infection	135
4	Surgical complications requiring unplanned return to theatre	20
5	Unplanned intensive care unit admission	na[b]
6	Respiratory complications	24
7	Venous thromboembolism	8
8	Renal failure	2
9	Gastrointestinal bleeding	14
10	Medication complications	30
11	Delirium	51
12	Persistent incontinence	8
13	Malnutrition	12
14	Cardiac complications	69
15	Third and fourth degree perineal laceration during delivery (per 10,000 vaginal births)	358
16	Neonatal birth trauma (per 10,000 births)	49

a per 10,000 hospitalisations except where indicated
b na = national data not available

Delirium refers to a hospital-acquired confusional state that may be fluctuating or acute.*

Why focus on delirium?

Each year, patients in Australian public hospitals experience more than 22,700 recognised episodes of delirium.[1] Delirium is an acute change in mental status that is common among older patients in hospital.[2] Delirium is a serious condition that is associated with increased mortality[3-5] and significant morbidity that may precipitate long-term cognitive decline[6,7] and premature entry to residential care.[8] However, delirium is poorly recognised, both in Australian hospitals[3-5,9] and internationally.[10,11]

Symptoms of delirium are distressing for patients and their carers. They include confusion, hallucinations, anxiety, fear or paranoia, irritability or frustration, rapid and unpredictable mood changes, sleeplessness and restlessness and agitation, or sleepiness, sluggishness and apathy. Symptoms fluctuate in the course of the day and may worsen in the evening or into the night.

The rate of hospital-acquired delirium in Australian hospitals was 51 per 10,000 hospitalisations in 2015–16.[1] Patients experiencing hospital-acquired delirium remain in hospital for 13.4 days longer on average than those without this hospital-acquired complication.[1] The national average cost per admitted acute overnight stay is $2,074.[12] Each hospitalisation involving hospital-acquired delirium may therefore be associated with $27,791 in extra costs.

Prevention is the most effective strategy, but outcomes for patients with delirium can also be improved by early recognition and intervention. Significant reductions in delirium rates are being achieved in some hospitals through preventive initiatives.[4] The rate for delirium at Principal Referral Hospitals† was 61 per 10,000 hospitalisations in 2015–16. If all Principal Referral Hospitals above this rate reduced their rate to 61 per 10,000 hospitalisations, then 3,870 episodes of delirium during hospitalisation in these hospitals would have been prevented, and more when other types of facilities are considered.

* The specifications for the Hospital-Acquired Complications list providing the codes, inclusions and exclusions required to calculate rates is available on the Commission's website.

† Hospitals were classified in the Principal Referral Hospitals peer group for these purposes according to the Australian Institute of Health and Welfare's former definition of major city hospitals with more than 20,000 acute weighted separations and regional hospitals with more than 16,000 acute weighted separations.

What is considered best practice for preventing delirium?

All hospital-acquired complications can be reduced (but not necessarily eliminated) by the provision of patient care that mitigates avoidable risks to patients.

The **health service organisation** providing services to patients at risk of delirium:

- Has systems for delirium risk identification, prevention and management that are consistent with best-practice guidelines
- Ensures that equipment and devices, such as low-rise beds, call bells and clocks, are available to decrease the risk and effectively manage delirium

Clinicians caring for patients at risk of delirium:

- Conduct cognitive and delirium risk screening in accordance with best-practice time frames and frequency
- Provide delirium prevention and care in accordance with best-practice guidelines

The National Safety and Quality Health Service (NSQHS) Standards (second edition), in particular the Comprehensive Care Standard[13], support the delivery of safe patient care.

The advice contained in the hospital-acquired complication fact sheets aligns with the criteria in this standard, which are as follows:

- Clinical governance structures and quality-improvement processes supporting patient care
- Developing the comprehensive care plan
- Delivering the comprehensive care plan
- Minimising specific patient harms.

Top tips for prevention and management of delirium

The following provides key points for clinicians to consider to avoid this hospital-acquired complication

Conduct risk assessment

- Conduct a comprehensive risk assessment.
- Identify key risk factors such as:
  - Pre-existing cognitive impairment and/or dementia
  - Aged ≥ 65 years (≥45 years for Aboriginal and Torres Strait Islander peoples)
  - Severe medical illness
  - Hip fracture.

For a patient at risk, develop a prevention plan as part of a comprehensive care plan.

Develop prevention plan

Clinicians, patients and carers develop an individualised, comprehensive prevention plan to prevent delirium that identifies

- Goals of treatment consistent with the patient's values
- Any specific nursing requirements , including equipment needs
- Any allied health interventions required, including equipment needs
- Observations or physical signs to monitor and determine frequency of monitoring
- Laboratory results to monitor and determine frequency of monitoring
- If specialist assistance is required.

Deliver prevention plan

Where clinically indicated, deliver delirium prevention strategies, such as:

- Regular monitoring for changes in behaviour, cognition and physical condition
- Medication review, including review of antipsychotics, as there is evidence that using antipsychotics can worsen delirium
- Activities for stimulating cognition
- Non-drug measures to help promote sleep
- Assistance for patients who usually wear hearing and visual aids
- Correction of dehydration, malnutrition and constipation
- Mobility activities
- Oxygen therapy where appropriate
- Pain assessment and management
- Regular reorientation and reassurance.

Monitor

- Monitor the effectiveness of the delirium prevention strategies, and reassess the patient if delirium occurs
- Review and update the care plan if it is not effective or is causing side effects
- Engage in reviewing clinical outcomes, identifying gaps and opportunities for improvement
- Follow up patients regarding resolution of delirium, the emergence of ongoing cognitive impairment and other comorbidities.

Clinical governance structures and quality-improvement processes

to support best practice in delirium prevention and management

Health service organisations need to ensure systems are in place to identify patients at risk, prevent delirium and appropriately care for patients who develop delirium through effective clinical governance and quality improvement.

The NSQHS Standards (2nd ed.) describe actions that are relevant to the prevention and management strategies outlined below. These actions are identified in brackets.

Policies, procedures and / or protocols

Health service organisations:

- Ensure policies, procedures and/or protocols are consistent with national evidence-based guidelines for the risk assessment, prevention and management of delirium. **(5.1a)**

Best-practice screening, assessment and management

Health service organisations:

- Agree on the process and criteria for cognitive screening and delirium assessment using validated tools **(5.7)**
- Inform the clinical workforce of screening and assessment requirements **(5.1c)**
- Identify a format for prevention plans for high-risk patients **(5.29)**
- Identify a management plan format for patients with delirium. **(5.13)**

Identification of key individuals/ governance groups

Health service organisations identify an individual or a governance group that is responsible for:

- Monitoring compliance with the organisation's delirium policies, procedures and protocols **(1.7c)**
- Presenting data on the performance of delirium prevention and management systems to the governing body. **(1.25, 1.6)**

Training requirements

Health service organisations:

- Identify workforce training requirements **(1.20a, 5.1c)**
- Train relevant workers in the use of screening and delirium assessment tools, prevention plans and delirium management plans **(1.20b, 1.20c, 5.1c)**
- Ensure workforce proficiency is maintained. **(1.20, 1.22, 1.28b, 5.2)**

Monitoring the delivery of care

Health service organisations ensure mechanisms are in place to:

- Report delirium **(1.9, 5.2c)**
- Manage risks associated with delirium **(5.1b, 5.30)**
- Identify performance measures and the format and frequency of reporting **(1.8a)**
- Set performance measure goals **(1.8a)**
- Collect data on compliance with policies **(1.7b)**
- Collect data about risk identification, cognitive screening and delirium assessment, including whether those activities are leading to appropriate action **(5.1b, 5.2)**
- Identify gaps in systems for delirium prevention and management (**5.2)**
- Collect data on incidence of delirium **(1.11, 5.2)**
- Provide timely feedback and outcomes data to staff. **(1.9)**

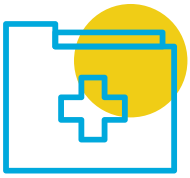
Quality-improvement activities

Health service organisations:

- Implement and evaluate quality-improvement strategies for the early identification of at-risk patients and patients with delirium and to reduce the frequency and duration of delirium **(1.8, 5.2a, 5.2b)**
- Use audits of patient clinical records and other data to
  - identify opportunities for improving delirium prevention plans **(5.2)**
  - identify gaps and opportunities to improve the use of delirium prevention plans **(5.2)**
  - monitor the overall effectiveness of your systems for prevention and management of delirium **(1.11g, 1.13c, 1.14g)**
- Use audits of patient clinical records, transfer and discharge documentation and other data to
  - identify opportunities for improving delirium management plans **(5.2)**
  - assess compliance with delirium management plan requirements **(5.2)**
  - identify strategies to improve the use and effectiveness of delirium management plans. **(5.2)**

Environment

Health service organisations facilitate access to an appropriate environment for the prevention and management of delirium. **(1.29b)**



Developing the patient's comprehensive care plan

to support best practice in delirium prevention and management

Clinicians should partner with patients, carers and families in assessing risk, in providing appropriate information to support shared decision making, and in planning care that meets the needs of patients and their carers.

Identifying key risk factors for delirium

Clinicians identify key risk factors associated with delirium:[2,3,14-16]

- Pre-existing cognitive impairment and/or dementia
- Aged ≥ 65 years (≥45 years for Aboriginal and Torres Strait Islander people)
- Severe medical illness
- Hip fracture.

Implement risk- assessment screening

Appropriately trained clinicians use validated screening and assessment processes at presentation to identify cognitive impairment and assess for delirium and requirements for prevention strategies.[14] This should be attended for all patients identified with the risk factors above.

Clinical assessment

Clinicians comprehensively assess:

- Conditions
- Medications
- Cognition
- Risks identified through screening process.

Clinicians document risks in the clinical record.

Informing patients with a high risk or with delirium

Clinicians provide information for patients with high risk and their carers about delirium prevention and management.

Planning in partnership with patients and carers

Clinicians inform patients, family and carers about the purpose and process of developing a delirium prevention and management plan and invite them to be involved in its development.

Collaborating and working as a team

Medical, nursing, pharmacy and allied health staff work collaboratively to perform delirium risk identification cognitive screening, delirium assessment and clinical assessment.

Documenting and communicating the care plan

Clinicians document in the clinical record and communicate:

- The findings of the screening and assessment process
- The findings of the clinical assessment process
- The delirium prevention and management plan.

Delivering comprehensive care

to prevent and manage delirium

Safe care is delivered when the individualised care plan, that has been developed in partnership with patients, carers and family, is followed.

Collaborating and working as a team

Medical, nursing, pharmacy and allied health staff work collaboratively to deliver delirium prevention and management.

Delivering delirium prevention strategies in partnership with patients and carers

- Clinicians work in partnership with patients and carers to use the comprehensive care plan to deliver delirium prevention strategies where clinically indicated; for example, identifying and managing the underlying causes including:
  - regular monitoring for changes in behaviour, cognition and physical condition
  - medication review, including review of antipsychotics, as there is evidence that using antipsychotics can worsen delirium[17]
  - activities for stimulating cognition
  - non-drug measures to help promote sleep
  - assistance for patients who usually wear hearing and visual aids
  - correction of dehydration, malnutrition and constipation
  - mobility activities
  - oxygen therapy where appropriate
  - pain assessment and management
  - regular reorientation and reassurance.

  These strategies can also apply for people who have delirium
- Clinicians undertake regular cognitive screening and, if required, delirium assessment for patients who are at risk (reassess, monitor and document).

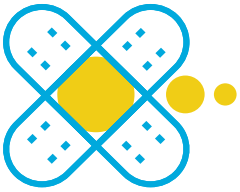
Delivering delirium management in partnership

Clinicians work in partnership with patients and carers to ensure patients who develop delirium are managed according to best-practice guidelines/clinical care standards. This includes developing an individualised care plan in collaboration with the patient, carer and the patient's GP, that describes ongoing care required after the patient leaves hospital.

Monitoring and improving care

Clinicians:

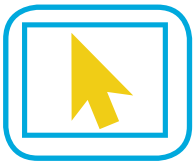
- Monitor the effectiveness of these strategies in preventing and/or managing delirium
- Review and update the care plan if it is not effective or is causing side effects
- Engage in reviewing clinical outcomes, identifying gaps and opportunities for improvement
- Follow up patients regarding resolution of delirium, the emergence of ongoing cognitive impairment and other comorbidities.



Minimising specific patient harm

Patients at risk of specific harm are identified, and clinicians deliver targeted strategies to prevent and manage these harms, including:

- Falls
- Dehydration
- Aggression and violence
- Restrictive practices, including restraint and seclusion.



Additional resources

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

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 hospital – Actions for health service managers. Sydney: ACSHQC; 2014.

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 hospital – Actions for clinicians. Sydney: ACSHQC; 2014.

Clinical Epidemiology and Health Service Evaluation Unit, Melbourne Health. Clinical Practice Guidelines for the Management of Delirium in Older People. [Clinical practice guideline] Melbourne: Victorian Government Department of Human Services on behalf of AHMAC; 2006 [updated October 2006]; 121].

ACI Aged Health Network Key principles for care of Confused Hospitalised Older Persons. Agency for Clinical Innovation; 2014.

Australian and New Zealand Society for Geriatric Medicine. Position Statement 13. Delirium in Older People 2012.

National Institute for Health and Care Excellence. Delirium: prevention, diagnosis and management. London: NICE; 2010 [updated 2015]; [CG 103].

Australasian Delirium Association.

The Center of Excellence for Delirium in Aging: Research T, and Educational Enhancement (CEDARTREE). Hospital Elder Life Program (HELP) for Prevention of Delirium.

Health Research and Educational Trust. Preventing Iatrogenic - Delirium Change Package: 2017 Update. Chicago, IL, US2017.

Note on data

The data used in this sheet are for hospital-acquired complications recorded during overnight acute episodes of care in Australian public hospitals in 2015–16. Data are included where hospitals were able to identify that the complication had arisen during an admission using the condition onset flag. Figures reported by the Independent Hospital Pricing Authority (IHPA) may differ due to the IHPA's methodology, which applies different inclusion/exclusion criteria.

References

1. Independent Hospital Pricing Authority (AU). Activity Based Funding Admitted Patient Care 2015-16, acute admitted episodes, excluding same day.
2. Clinical Epidemiology and Health Service Evaluation Unit, Melbourne Health. Clinical Practice Guidelines for the Management of Delirium in Older People. Developed by the Clinical Epidemiology and Health Service Evaluation Unit, Melbourne Health in collaboration with the Delirium Clinical Guidelines Expert Working Group Commissioned on behalf of the Australian Health Ministers' Advisory Council (AHMAC), by the AHMAC Health Care of Older Australians Standing Committee (HCOASC). Melbourne: Victorian Government Department of Human Services on behalf of AHMAC; 2006. p. 121.
3. National Institute for Health and Care Excellence. Delirium: prevention, diagnosis and management. Clinical Guideline 103. London: NICE; 2010. p. 33.
4. Travers C, Byrne GJ, Pachana NA, Klein K, Gray L. Delirium in Australian hospitals: a prospective study. Curr Gerontol Geriatr Res. 2013;2013:284780.
5. Siddiqi N, Harrison JK, Clegg A, Teale EA, Young J, Taylor J, et al. Interventions for preventing delirium in hospitalised non-ICU patients. Cochrane Database of Systematic Reviews. 2016(3).
6. Pandharipande PP, Girard TD, Jackson JC, Morandi A, Thompson JL, Pun BT, et al. Long-Term Cognitive Impairment after Critical Illness. New England Journal of Medicine. 2013;369(14):1306-16.
7. Inouye SK, Westendorp RGJ, Saczynski JS. Delirium in elderly people. The Lancet.383(9920):911-22.
8. Fong TG, Jones RN, Marcantonio ER, et al. Adverse Outcomes After Hospitalization and Delirium in Persons With Alzheimer Disease Annals of Internal Medicine. 2012;156(12):848-W296
9. Iseli RK, Brand C, Telford M, LoGiudice D. Delirium in elderly general medical inpatients: a prospective study. Intern Med J. 2007;37(12):806-11.
10. Collins N, Blanchard MR, Tookman A, Sampson EL. Detection of delirium in the acute hospital. Age Ageing. 2010;39(1):131-5.
11. Travers C, Byrne G, Pachana N, Klein K, Gray L. Prospective observational study of dementia and delirium in the acute hospital setting. Intern Med J. 2013;43(3):262-9.
12. Independent Hospital Pricing Authority (AU). National Hospital Cost Data Collection 2015-16, acute admitted episodes, excluding same day.
13. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards (second edition). Sydney 2017.
14. 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 Ageing. 2014;43(3):326-33.
15. Australian Commission on Safety and Quality in Health Care. Delirium Clinical Care Standard. Sydney: ACSQHC; 2016.
16. 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 hospital – Actions for clinicians. Sydney: ACSHQC; 2014.
17. Agar MR, Lawlor PG, Quinn S, Draper B, Caplan GA, Rowett D, et al. Efficacy of Oral Risperidone, Haloperidol, or Placebo for Symptoms of Delirium Among Patients in Palliative Care: A Randomized Clinical Trial. JAMA Internal Medicine. 2017;177(1):34-42. Epub 2016/12/06.

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