Management of delirium: a clinical governance approach

Mary Ann Kulh, Virginia A Mumford, Roslyn Sorensen and Marc M Budge

Abstract

This study assessed the management of delirium in the Acute Care of the Elderly unit (ACE) at a tertiary referral hospital as a case study of the application of clinical governance principles. The environment was found to be supportive of ongoing clinical governance activities, both in clinical organisation of work processes and orientation of management. However, patient involvement, dissemination and use of clinical pathways, performance measurement and feedback, and maintaining stability of care are areas requiring further development. Although there is a clinical governance strategy in place at the policy level, this has not always filtered through to the level of clinical work.

Aust Health Rev 2005: 29(2): 246–252

What is known about the topic?

Many health care providers in Australia are attempting to apply the principles of clinical governance to their strategies for quality and safety. Not much is known about the effectiveness of these efforts in improving clinical practice and care processes.

What does this paper add?

This case study found that only 11 of 34 patients were put on the clinical pathway for managing delirium, and clinicians reported low levels of systemised communication, performance measurement and review of care processes.

What are the implications?

More work is required on the design and implementation of mechanisms to support clinicians where clinical work is carried out. For clinical governance to become institutionalised in hospital settings, staff will need to have competence, not just in clinical work, but also in audit and risk management.

ACUTE CONFUSIONAL STATE (ACS) or delirium is a disturbance of consciousness and attention, which may be the consequence of an acute medical condition or the result of medication use. Older adults are particularly vulnerable due to reduced compensatory mechanisms, both cognitive and physical, and the increased risk of side-effects from medications. ACS is associated with poor outcomes including increased mortality[1] prolonged length of stay, and increased risk of institutionalisation.[2]

From a quality perspective, the development of ACS in hospital is a marker of iatrogenic complications and inadequate hospital care.[3] There is

Mary Ann Kulh, FRACP, Staff Specialist Geriatrician
Virginia A Mumford, MHA, MBA, Master of Health Administration Student
Marc M Budge, FRACP, Director of Geriatric Medicine
Department of Geriatric Medicine, The Canberra Hospital and ANU Medical School, Woden, ACT.

Roslyn Sorensen, PhD, Senior Lecturer
Centre for Health Services Management, University of Technology, Sydney, NSW.

Correspondence: Dr Mary Ann Kulh, Department of Geriatric Medicine, The Canberra Hospital and ANU Medical School, PO Box 11, Woden, ACT 2606.
Mary-Ann.Kulh@act.gov.au

increasing evidence for the management of delirium in a multidisciplinary context, yet the infrastructure to support such clinical care is not always available. Furthermore, it is unclear how to practically assess the deficiencies in organisational management hindering delivery of quality care.

Setting

The Canberra Hospital (TCH) is a 500-bed acute care teaching hospital and a clinical unit of two university medical schools. The Acute Care of the Elderly (ACE) unit provides acute medical assessment and management services to the aged population of surrounding ACT and NSW health services.

Definitions

Clinical governance: the framework adopted by organisations to ensure accountability for the quality care of patients. The framework, for this study,

encompasses performance measurement and feedback, systematisation of clinical work (eg, through use of clinical pathways), risk management and patient involvement.

Acute confusional state or delirium: a medical condition, more commonly seen in older adult patients, defined by:

- a disturbance in level of consciousness;
- change in cognition;
- acute onset (hours to days);
- presence of an underlying cause such as a medical condition, medication or substance intoxication, substance withdrawal, or a combination of these (adapted from American Psychiatric Association[4]).

Study aims

The study aims were:

- To examine the management performance of the ACE unit, with particular reference to management of ACS;
- To determine whether the management of ACS in the ACE unit accords with good clinical governance.

Apart from its reflection on hospital care, we selected ACS as the focus of the survey because we wished to assess the recently introduced ACS clinical pathway. The pathway outlines locally agreed best practice for the treatment of ACS and was developed by a multidisciplinary team. We assessed the impact of the clinical pathway on the management of these patients to determine whether the pathway was being used as intended or whether it needed modification. This study is not an appraisal on the clinical appropriateness of the ACS protocol.

Study methodology

The study consisted of three components:

- Medical record audit;
- Survey of the clinicians' perceptions of the organisation of clinical work (Clinician Self-Assessment Survey), administered by questionnaire;
- Survey of managers' perspectives on the organisational structure (Assessment of the Organisational Environment), administered by interview.

We used the assessment protocol *Improving patient care* from the Centre for Clinical Governance Research at the University of New South Wales.[5] This package helps assess the organisation and management of clinical work through self-assessment surveys, and also provides a framework for structuring a strategy for improvement. The conceptual basis for the package is clinician-managed systematisation of clinical work.

Medical record audit

We reviewed the medical records of patients admitted under the ACE team with a primary diagnosis of ACS over a 12-month period (April 2002 to April 2003). Case selection was made by searching for all patients with a diagnosis of ACS or delirium in the discharge summary over the selected period, and 34 cases were identified. The study was conducted in April 2003 by a medical registrar working in the unit (M A K) and a Master of Health Administration student (V M).

Clinician self-assessment survey

The clinician survey was used to assess the availability and use of structures and processes that support provision of quality clinical care, such as information technology, performance data and administrative support. The survey also explored the clinicians' understanding of the organisation of care for the management of ACS patients. Questions were asked about perceived strengths and weaknesses of the organisation, systemised communication and review of the care process, patient involvement, and performance measurement.

Participants were asked to rate the extent to which these practices or resources were available or used in the ACE unit, along a scale from "Always" to "Never" or "Don't know". Overall, 21 clinicians from the ACE unit who were identified as treating ACS patients (ten medical, seven nursing and four allied health staff), completed the questionnaire (100% response rate).

Assessment of the organisational environment

This aspect of the survey addressed the orientation of management, stability of care for the case type, and organisation of care. We were interested in

organisational factors, both corporate support and management strategies, impacting on clinical work. Corporate support refers to such measures as clinician training programs to support clinical governance implementation, clinical database development, and statistical analysis. Management strategies comprise organisation of care along multidisciplinary lines, and the ability to measure and report performance.

We interviewed four managers identified as most able to answer questions on the organisation of clinical work processes: Chair of the Clinical Review Committee, Clinical Director of the ACE unit, Quality Manager for TCH, and General Manager of TCH.

Results

Medical record audit

A total of 34 consecutive patient records were reviewed, with average paient age 82 years. Results of the audit are summarised in Box 1. Only 11 patients (32%) were put on the ACS clinical pathway, and of these, variance from the pathway was recorded in only five cases. Sixty-eight percent of the patients with ACS were tested using a mini-mental state examination (MMSE) at least once during their stay. The MMSE is a tool used to assess cognitive performance and is useful in diagnosing cognitive impairment.[6] Use of both the MMSE and the pathway was infrequent in our sample.

There was a high degree of polypharmacy and comorbidity within the sample. A review of the medication charts revealed that 91% of the ACS patients were given psychotropic drugs, and on average patients were taking two-and-a-half different categories of psychotropic drugs. We found a wide range of comorbidities, with all patients having at least one other major medical or surgical diagnosis. In particular, 38% of patients had underlying dementia, 21% had urinary tract infections and 12% had fractured neck of femur.

1 Summary of medical record audit for acute confusional state		
Demographic data	No of medical records studied	34
	% Female	50%
	Average age (years)	82
	Average LOS (days)	23
	Average LOS (less two outliers waiting for nursing home placement)	12
	Inpatient mortality	12%
Assessment scores	% administered MMSE	68%
	Average MMSE score for those assessed (out of 30)	18
	% put on ACS clinical pathway	32%
	Total prevalence of variance recorded on pathway (%)	15%
	Variance recorded for those on pathway (%)	45%
Pharmacology	% administered psychotropic drugs	91%
	Average number of categories of psychotropic drugs given	2.5
	Antipsychotics (% of total patients)	47%
	Anticonvulsants (% of total patients)	21%
	Antidepressants (% of total patients)	50%
	Benzodiazepines (% of total patients)	41%
	Cholinesterase inhibitor (% of total patients)	21%
Comorbidities	Dementia (%)	38%
	Urinary tract infection (%)	21%
	Fractured neck of femur (%)	12%

LOS = length of stay. MMSE = mini-mental state examination. ACS = acute confusional state.

One of the reasons for choosing ACS as the study condition was the perceived effect of ACS on delays in discharge. Average length of stay (LOS) for the group was 23 days, which dropped to 12 days when two outliers (98 days and 74 days) who were waiting for nursing home beds were excluded.

Survey summaries

A summary of the results of the two surveys is given in Box 2. We note that the surveys are intended to document the levels at which the clinical work is systematised, through formal documentation of processes, and is not a direct assessment of the quality of care received by patients.

Clinician self-assessment survey

The results of the clinician survey are summarised in Box 3.

The first section, the organisation of the care process, specifically relates to the ACS clinical pathway. Although seven of ten medical staff knew about the pathway, only two said they used it. This is borne out in the medical record audit, where only 32% of patients with ACS were put on the pathway. Although 45% of patients on the pathway had variance reporting done, staff were often not aware of the purpose of reporting and felt there was inadequate feedback from the reporting. The low scores for the patient involvement section reflect the difficulty in engaging patients with cognitive impairment to guide clinical decision making.

There were low scores overall in systemised communication about the care process. Formal methods of communication are important in dealing with patients with multiple comorbidities, particularly where there are numerous patients in outlying wards, but this was inadequately done.

Performance measurement was obviously lacking in the ACE unit, with low scores in all areas. Staff felt that they were not receiving statistical reports on the unit's performance in treating patients with ACS, even if these were distributed at a managerial level. Furthermore, lack of benchmarking meant that there was no way of comparing the ACE unit's performance to other units within the hospital, or to other aged care services.

Participants reported low levels of reviewing the care process. Questioning revealed that the survey

2 Survey summary scores	
	Agreement (%)
Clinician self-assessment survey	
1 Clinical organisation of the care process	47
2 Patient involvement	5
3 Understanding the care process	48
4 Performance measurement	15
5 Improving the care process	29
Average total score	29
Assessment of the organisational environment	
1 The orientation of management	75
2 Stability of clinical care	25
3 Organisation of care	54
Average total score	51

was the first time the specific treatment of ACS had been formally assessed since the clinical pathway was introduced. Medical unit meetings were held regularly but at an inconvenient time for nursing and allied health staff to attend.

Assessment of the organisational environment

The responses of managers in this aspect of the survey are summarised in Box 4. The managers rated orientation of management highest (75%). This may be due to the recent focus on clinical governance as part of clinical management at TCH, and the multidisciplinary approach adopted to create the ACS clinical pathway. The managers were more confident that performance feedback was in place (80%) than the clinicians (15%).

Low scores in the section on stability of clinical care (25%) probably reflect the necessity of having ACS patients on outlying wards. The low score for stability of case type (0) is due to the fact that many different medical conditions are managed in the ACE unit. Geriatric medicine is a specialty defined by age and presence of comorbidities rather than a particular organ system.

There were medium scores in the organisation of care section (54%). The reported availability of training is high. However, the survey indicates that more could be done on a hospital-wide basis to

increase use of the pathway and the recording of variances from the pathway.

Discussion

Following review of the performance of the ACE and its management of ACS, the main areas of clinical governance identified as requiring improvement were: patient involvement, dissemi-nation and use of the ACS clinical pathway, performance measurement, performance feedback, and maintaining stability of care. These are each discussed below. Although there is a clinical governance strategy in place at the policy level, the results of this review indicate that it has not always filtered through to the level of clinical work.

One of the limitations of this review is that it relied on discharge summaries and self-reported

3 Clinician self-assessment survey	Average score (%)
Organisation of care process	
1.1 Is there a form?	73
1.2 Identify significant steps	56
1.3 Referring to guidelines/protocols?	34
1.4 Do you use the form?	39
1.5 Is there a provision for variance reporting?	60
1.6 Mechanism to determine variances	33
1.7 Do you record variances?	31
Section score	47
Patient involvement	
2.1 Is info sheet given to patients?	3
2.2 Do you use the patient info sheet?	7
2.3 Provision for comments?	3
Section score	5
Systemised communication about the care process (formal only)	
3.1 Systemised work: Medicine	52
3.2 Systemised work: Nursing	48
3.3 Systemised work: Allied Health	43
Section score	48
Performance measurement	
4.1 Statistical reports received?	22
4.2 Internally benchmarked	10
4.3 Externally benchmarked	15
Section score	15
Reviewing care process	
5.1 Formal meetings to review care	30
5.2 Are the meetings multidisciplinary?	30
5.3 Is care altered on basis of review?	26
Section score	29

4 Assessment of the organisational environment	Average score (%)
Orientation of management	
1.1 The method of clinical care organisation	45
1.2 The method of performance feedback	80
1.3 The method of clinical care management	100
Section score	75
Stability of clinical care	
2.1 Stability of patient location — wards	50
2.2 Stability of patient location — case type	0
Section score	25
Organisation of care	
3.1 Availability of training in the management of clinical care	75
3.2 Training received	100
3.3 Getting agreement on care	35
3.4 Incorporating the patient viewpoint	40
3.5 Systematising clinical care	60
3.6 The quality of the medical record	0
3.7 Quality of documentation of clinical record	50
3.8 Location of clinical support services and resources	100
3.9 Information systems capability	50
3.10 Integrating reporting of clinical performance	37.5
3.11 Reviewing the care process	52.5
3.12 Incentives	0
3.13 Authority to make changes to the management of clinical care	100
Section score	54

data. Relying on documentation of ACS in the discharge summary means that we may have missed patients. Furthermore, in one to two-thirds of patients, the delirium may go unrecognised.[7]

Self-report in the clinician survey may have been affected by lack of knowledge of particular care processes in place in the ACE unit. However, lack of such knowledge would be a negative indication in its own right. The managers on the other hand may be likely to give an overly positive report. Managers are often not aware of what occurs in the clinical workplace and may assume that a policy devised is a policy implemented.

The survey was carried out in a short time period using a small sample, both in medical records reviewed and staff surveyed or interviewed. Given that ACE is a relatively small unit, this may have been adequate. Care was taken to include all types of staff such as nurses on night duty and junior medical staff to reflect the full opinion of staff working in the ACE unit.

Patient involvement

Given the nature of ACS, it is perhaps not surprising that clinicians gave low ratings for their practice in incorporating the patient viewpoint. Strategies to elicit the views of consumers at times when they are able to participate, such as through organised focus groups, may assist. While a hospital-wide complaints unit exists, there is no avenue for formal patient feedback at the clinical care level.

Dissemination and use of clinical pathway

Most clinicians were aware of the existence of a clinical pathway for ACS, but very few used it, which strongly suggests that either further education is required, or that the pathway needs to be redesigned by those most likely to use it. Clinical pathways are an important method of systematising clinical work processes, and enable the development and implementation of local protocols based on evidence.[8]

One participant commented that the pathway needed to recommend a standardised level of care in terms of pharmacological therapy and physical restraint use. Through variance reporting, issues like the standardising of treatment can be intro-duced as a means for reducing adverse incidents. In this way, pathways become a device for managing or reducing risk and improving outcomes.

Performance measurement

The Canberra Hospital Clinical Review Committee (CRC) carries out formal review of sentinel events for the hospital. There are seven criteria for determining which cases need to be flagged to the CRC. Of these, death, unplanned readmission, and LOS greater than 30 days have particular relevance to the care of older adults and management of ACS. We suggest having a unit-based monthly multidisciplinary risk management meeting to review these incidents and stress it should be undertaken in an open, non-punitive setting.

Broader performance monitoring could be based on regular review by unit staff of basic data such as LOS for major diagnosis related groups and complication rates.

Performance feedback

There were no financial incentives for changing current practices but comments from both medical and nursing staff suggest that better feedback and the ability to benchmark the unit's performance would be powerful incentives for change.

In order to support continuous quality improvement in the ACE unit, it is suggested that a unit-based multidisciplinary Clinical Improvement Group (CIG)[9] be established. Such a group would review performance data, identify any action required and decide audit priorities, and report regularly to the rest of the clinical team to maintain transparency.[10]

Stability of care

The management survey highlighted the need for more stability in terms of both ward and case type within the ACE. The lack of stability of ward location of patients makes having a systematised work flow so important.

While managing all ACS patients on the one ward would be ideal, the reality is older patients are at risk of delirium regardless of the underlying medical condition for which they were initially admitted to hospital. They are also prone to iatrogenic complications as a direct result of hospitalisation. For these

reasons, the management of ACS must take a hospital-wide approach. The improvement of the ACS pathway is critical since raising awareness of delirium among clinicians and early intervention in older adults have been shown to both reduce the duration and severity of delirium.[11]

Conclusion

Our data suggest that clinical governance strategies, in the case of ACE, need to be applied at the level of clinical work processes. It is apparent that hospital-wide systems of audit, clinical effectiveness, professional development, and risk management are not effective at the unit level. That is, mechanisms have not been adequately devised and implemented to support clinicians where clinical work is carried out.

For clinical governance to become institutionalised in hospital settings, staff will need to have competence, not just in clinical work, but also in audit and risk management. Strategies to implement clinical governance in the ACE unit should build on identified unit strengths, specifically its multidisciplinary approach, the clinical governance initiatives already in place at TCH, and the unified goal of achieving quality patient care. Clinical governance needs to be focused on the clinical workplace, but its development and sustainability are reliant on the provision of practical support for clinicians and clinical managers to embed it in practice. In this, we believe, there is a clear role for general hospital management.

Acknowledgements

References

1 Inouye SK, Viscoli CM, Horwitz RI, et al. A predictive model for delirium in hospitalized elderly medical patients based on admission characteristics. *Ann Intern Med* 1993; 119: 474-81.

2 Levkoff SE, Evans DA, Liptzin B, et al. Delirium: the occurrence and persistence of symptoms among elderly hospitalized patients. *Arch Intern Med* 1992; 152: 334-40.

3 Inouye SK, Schlesinger MJ, Lydon TJ. Delirium: a symptom of how hospital care is failing older persons and a window to improve quality of hospital care. *Am J Med* 1999; 106: 565-73.

4 American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). 4th ed. Washington, DC: American Psychiatric Association, 1994.

5 Sorensen R, Maxwell S, Coyle B, et al. Improving Patient Care. A clinician self-assessment package on the organisation and management of clinical care. Sydney: Centre for Clinical Governance Research, 2003

6 Folstein MF, Folstein S, McHugh PR. "Mini-Mental State": a practical method for grading the cognitive state of patients for the clinician. *J Psychiatric Res* 1975; 12: 189-98.

7 Inouye SK. The dilemma of delirium: clinical and research controversies regarding diagnosis and evaluation of delirium in hospitalized elderly medical patients. *Am J Med* 1994; 97: 278-88.

8 Campbell H, Hotchkiss R, Bradshaw N, Porteous M. Integrated care pathways. *BMJ* 1998; 316: 133-7.

9 Burke C, Lugon M. Integrating clinical risk audit - moving towards clinical governance. *The Health Risk Resource* 1998; 2(1): 16-18.

10 Lugon M, Secker-Walker J. Organisational framework. In: Clinical governance: making it happen. London: Royal Society of Medicine Press Ltd, 2001.

11 Milisen K, Foreman MD, Abraham IL, et al. A nurse-led interdisciplinary intervention program for delirium in elderly hip-fracture patients. *J Am Ger Soc* 2001; 49: 523-32.

Correction: Building a culture of research dissemination in primary health care: the South Australian experience of supporting the novice researcher

Re: "Building a culture of research dissemination in primary health care: the South Australian experience of supporting the novice researcher", by Karin Ried and Jeffrey Fuller (*Aust Health Rev* 2005, vol 29, no. 1, pp. 6-11).

The last line of the Appendix was omitted due to an error in the production process. The final sentence should be, "The papers may therefore range from small research projects to discussion papers on potential research/evaluation methods and potential capacity building strategies, and can include work in progress." ❑