

# Managing the interface between acute care and rehabilitation — can utilisation review assist?

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## Abstract

**Aims and methods:** We piloted the InterQual Criteria tool in a large regional acute hospital in NSW to determine the utility of this tool in the Australian context. In particular to compare the current “gold standard” of physician assessment for the selection of patients for rehabilitation and the timing of transfer, with the guidance provided by the tool. Consecutive acute care patients with a diagnosis of stroke, hip fracture or amputation, and patients referred for rehabilitation assessment, were followed using the InterQual Criteria.

**Results:** Results on 242 acute episodes, representing 2698 days in acute care, were analysed. In accordance with overseas studies, we found that high levels of inappropriate days of stay in acute care were suggested by the tool. Using the InterQual Criteria almost all patients were deemed appropriate for transfer to rehabilitation much earlier than current practice.

**Conclusion:** We conclude that the InterQual Criteria may have a useful role in patient selection for rehabilitation, in facilitating the transfer of patients from acute to subacute care, and in improving patient flow within acute care. The reasons for the variation between the results obtained from the tool and current clinical practice requires further investigation, and may indicate a lack of validity of the tool in the Australian setting, inefficiencies in processes of acute care, or the lack of suitable alternative care settings or level of support available in these settings.

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PRESSURE FOR IMPROVED efficiency, and a stronger focus on patient safety are resulting in initiatives that aim to improve the flow of patients through the hospital system. However, relatively little work has been done targeting the interface between acute care and rehabilitation or other

## What is known about the topic?

Utilisation review is used in a number of countries as a method to assess the appropriateness of the care provided to a patient, including the appropriateness of the care setting and length of stay in that setting. There has been little reported use of utilisation review tools in Australia.

## What does this paper add?

This paper reports on the use of an American utilisation review tool, the InterQual Criteria, in managing the transition from acute care to rehabilitation. The paper suggests rehabilitation patients may be able to be transferred from acute care sooner than is current practice, thereby reducing the number of inappropriate days in acute care hospitals.

## What are the implications for practitioners?

The authors suggest there is potential for use of the InterQual Criteria in Australia, although further validation is required.

subacute care.<sup>1,2</sup> One of the key tools employed overseas to improve hospital performance — utilisation review — is not widely practised in Australia.<sup>3</sup> Utilisation review is a method that assesses the appropriateness of the care provided to a patient, including the appropriateness of the care setting and length of stay in that setting.<sup>4</sup>

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In Australia, there is often ambiguity around the classification of patients as “acute” or “subacute”, with patients who meet both descriptions occupying acute care hospitals.<sup>1,5</sup> Utilisation review can help provide a mechanism to identify the most appropriate level of care that a patient requires, thereby assisting in the selection of patients whose need is for acute care or for a subacute level of care, including rehabilitation.<sup>6</sup> It can also provide a framework to determine the reasons why a patient does not meet criteria for admission or continuing stay at these care levels, when they may be ready for safe discharge, and what alternative level of care may be more appropriate. This framework can identify inefficiencies in the processes of care and can provide health service planners with information on demand for various care types.<sup>7</sup>

Utilisation review tools in common use are now mostly proprietary in nature, probably due to the cost and complexity of maintaining their currency and developing software to support their use.<sup>1</sup> Of the proprietary tools, the InterQual\* Criteria are the most widely cited and are used by a large number of hospitals and managed care organisations in the United States and Canada to determine the appropriateness of admissions to acute care, the appropriateness of continued stay, and discharge readiness.<sup>3,6,8-16</sup> While primarily a tool of payers in the US, utilisation review is mostly used in Canada and the United Kingdom to facilitate patient flow into the most appropriate care setting.<sup>6</sup> The tools may also contain criteria to guide the selection of patients appropriate for rehabilitation or other subacute levels of care. In international studies that have employed formal utilisation review, both retrospective and concurrent, there is consistently a high reported rate of inappropriate admissions to, and continuing stay in, acute care.<sup>9</sup>

This paper reports the results of a pilot study using the InterQual Criteria in a large regional acute hospital. The aims were to determine the utility of this tool in the Australian context and to

compare the current “gold standard” of physician assessment for the selection of patients for rehabilitation, and the timing of transfer, with the guidance provided by the tool.

## Description of InterQual Criteria (2004)

The InterQual Level of Care Criteria product suite is a proprietary product of the US-based McKesson Corporation. The criteria sets were originally developed in 1978, and are updated annually based on the medical literature, clinical practice changes, and feedback from users of the product. Data collection can be via a paper-based system or matched software (CareEnhance Review Manager\*) for ease of use. Nursing or allied health professionals conduct primary reviews using the Criteria, with medical staff providing secondary reviews in cases of uncertainty.

The InterQual acute adult criteria set includes *admission*, *continued stay*, and *discharge* review guidelines that demonstrate the appropriateness of a given level of acute care, based on the assessment of the patient’s clinical status and the services provided. The criteria include objective clinical findings, corresponding medical and other professional interventions typically provided at the proposed level of care, and clinical indicators reflecting readiness for safe discharge (either without further services or with the expectation for continued care at another level). Additionally, the criteria provide a mechanism to determine the need for an alternate level of care (such as rehabilitation or other subacute care) and, likewise, the appropriateness of admission, continued stay, and discharge readiness from such levels.

It is important to note that the InterQual Criteria do not prescribe clinical care — they merely determine whether, based on the patient’s clinical condition and services provided, the level of care being assessed is appropriate, according to the criteria. Also, in applying the criteria, reviewers should not need to see the patient. There should be sufficient information within the medical record and bed chart to successfully apply the

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\* CareEnhance and InterQual are registered trademarks of McKesson Health Solutions LLC.

## I Discharge destination of patients from the acute care hospital

Diagnosis group	Discharge destination from acute care	No. (%)
Stroke	Home	30 (50.0)
	Rehabilitation	24 (40.0)
	Transfer to other hospital	3 (5.0)
	Deceased	1 (1.7)
	Nursing Home	1 (1.7)
	Other	1 (1.7)
	Total	60 (100)
Hip fracture	Home	13 (28.3)
	Rehabilitation	23 (50.0)
	Transfer to other hospital	0 (0.0)
	Deceased	3 (6.5)
	Nursing Home	7 (15.2)
	Other	0 (0.0)
	Total	46 (100)
Amputation	Home	3 (27.3)
	Rehabilitation	7 (63.6)
	Transfer to other hospital	0 (0.0)
	Deceased	1 (9.1)
	Nursing Home	0 (0.0)
	Other	1 (9.1)
	Total	11 (100)
Other rehabilitation referral	Home	20 (16.0)
	Rehabilitation	76 (60.8)
	Transfer to other hospital	15 (12.0)
	Deceased	4 (3.2)
	Nursing Home	1 (0.8)
	Other	9 (7.2)
	Total	125 (100)

criteria, but further information can be sought from ward staff, if required.

Because the InterQual product is not in the public domain, a brief description is presented in the Appendix (with permission of McKesson Corporation).

### Validity of the InterQual Criteria

The InterQual Criteria have been shown to have moderate reliability and validity when tested

against clinical practice in the US.<sup>17</sup> Validity of the criteria outside of the US is more controversial, as the structure of health care systems and availability of alternative care settings differs.<sup>7,9,18-24</sup> In these settings the criteria are seen more as a guide to care and to assist in health service planning.<sup>7</sup> The use of secondary reviewers, as allowed in the criteria, is reported to enhance validity.<sup>22</sup> However, the fact that the InterQual Criteria are updated annually means that studies examining validity may not apply to the current version, and this represents a weakness inherent in the criteria.<sup>12</sup>

### Methods

The study was conducted in Wollongong Hospital, a large regional acute care hospital in New South Wales. Ethics approval was obtained from the Human Research and Ethics Committee of the University of Wollongong.

### Participants

Three patient groups were eligible for inclusion in the study:

- All patients admitted to the acute care hospital during the study period with a diagnosis of stroke or hip fracture. These diagnoses were selected due to the high likelihood that the patient would be referred for inpatient rehabilitation, thus allowing the capture of utilisation review data from the time of admission.
- All patients in the acute care hospital who had amputation of a limb during the study period. These patients have utilisation review data from the day of amputation.
- All other patients in the acute care hospital who were referred for a rehabilitation medical consultation during the study period. Patients in this group have utilisation review data captured only from the point of rehabilitation referral.

### Procedure

Four allied health clinicians and one rehabilitation physician (CJP) received 4 days of training in June 2004 in the use of the InterQual Adult (Acute and Rehabilitation/Subacute) Criteria and

## 2 Overall patient days in the acute care hospital meeting InterQual Criteria for acute level of care

Diagnosis group	Days meeting criteria for acute level of care (no. [%])	Days not meeting criteria for acute level of care (no. [%])	Total days in acute care
Stroke	243 (34%)	463 (66%)	706
Hip fracture	388 (56%)	300 (44%)	688
Amputation	84 (31%)	183 (69%)	267
Other rehabilitation referrals	121 (12%)	916 (88%)	1037
Total	836 (31%)	1862 (69%)	2698

the associated computer software (CareEnhance Review Manager). Training was provided by InterQual trainers from McKesson (USA).

Patients with hip fracture or stroke (Group 1) were followed using the InterQual Adult (Acute) Criteria (*admission* then *continuing stay* criteria) from the day of admission to the acute care hospital. Patients with amputation (Group 2) were followed from the day of amputation. Patients referred for rehabilitation consultation (Group 3) were followed with the InterQual Adult (Acute) *continuing stay* criteria from the day of referral.

The InterQual Criteria were then applied to all three groups on a daily basis until the patient no longer met criteria for continuing stay in acute care, at which point the *discharge* criteria were applied and the alternative level of care noted. If the patient met criteria for rehabilitation or other subacute level of care, *preadmission* criteria to confirm the level of care were applied. Patients then continued to have the InterQual Adult (Acute) *continuing stay* criteria applied, on a daily basis, until they were discharged home from the acute care hospital, transferred to rehabilitation, other hospital or aged care facility, or died.

Consecutive patients who met eligibility criteria were accepted for inclusion in the study from 23 August 2004 until 9 November 2004. The final InterQual assessment was conducted on 4 December 2004. During the study period new patients were not accepted on 14 days (7 individual days throughout the study period — one for each weekday — and one whole week in early October

2004). This was done to control the number of patients requiring assessment so that the reviewers were able to manage their workloads.

The InterQual reviews were conducted in parallel to usual care, with the rehabilitation service medical staff blinded to the results. Throughout the study the rehabilitation service continued to use its in-house information management system. This recorded the date of referral for each rehabilitation medical consultation, the date the consultation occurred, whether or not the patient was accepted for an inpatient rehabilitation program and, if so, the date that they were deemed ready for transfer, and the actual date of transfer.

The four reviewers undertook assessments for an average of 2 hours per day, equivalent to one full-time reviewer for 3 months. The rehabilitation physician was available throughout the study to assist the reviewers in applying the criteria, to undertake secondary medical reviews when required, and to ensure that no reviews were missed.

### Data analysis

Data were extracted from the InterQual database and linked by patient medical record number with data from the hospital patient administration system and the rehabilitation service information system. Linked data were analysed in Microsoft Excel (Microsoft Corporation, Redmond, Wash, USA) and SPSS version 14 (SPSS Inc, Chicago, Ill, USA). Graphs are presented using box plots. For consistency, any days patients spent in the acute care hospital before hip fracture surgery, or days before the last amputation procedure, were not

included in calculations which examined the time from hip fracture or amputation to rehabilitation referral, transfer or discharge. However, all patient days were included in the overall analysis of appropriateness of acute care.

## Results

### Patient characteristics

There were 242 patient episodes, representing 2698 patient days in acute care. Five patients had two separate admissions during the study. Of the 242 patient episodes followed, 60 were for stroke (mean patient age of 69 years; range 25–88 years), 46 for hip fracture (mean age 81 years; range 67–94 years) and 11 for amputation (mean age 80 years; range 64–92 years). The proportion of admissions resulting in rehabilitation referral was 55% for stroke admissions, 54% for hip fracture admissions and 73% for patients with amputation. The other 125 patients were referred for a rehabilitation consultation. This group had a mean age of 72 years (range 18–93 years).

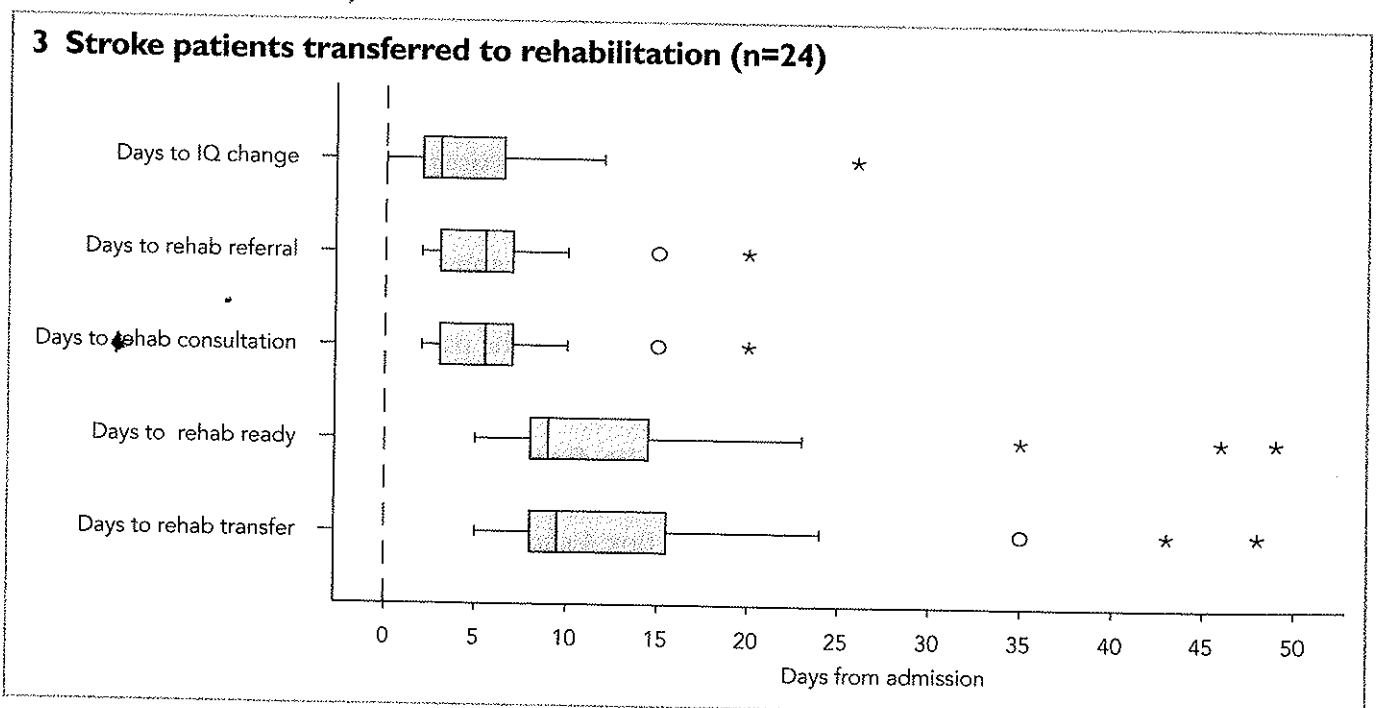
The discharge destination from the acute hospital, broken down by patient episode type, is shown in Box 1.

### Overall patient days in the acute care hospital meeting InterQual Criteria for acute level of care

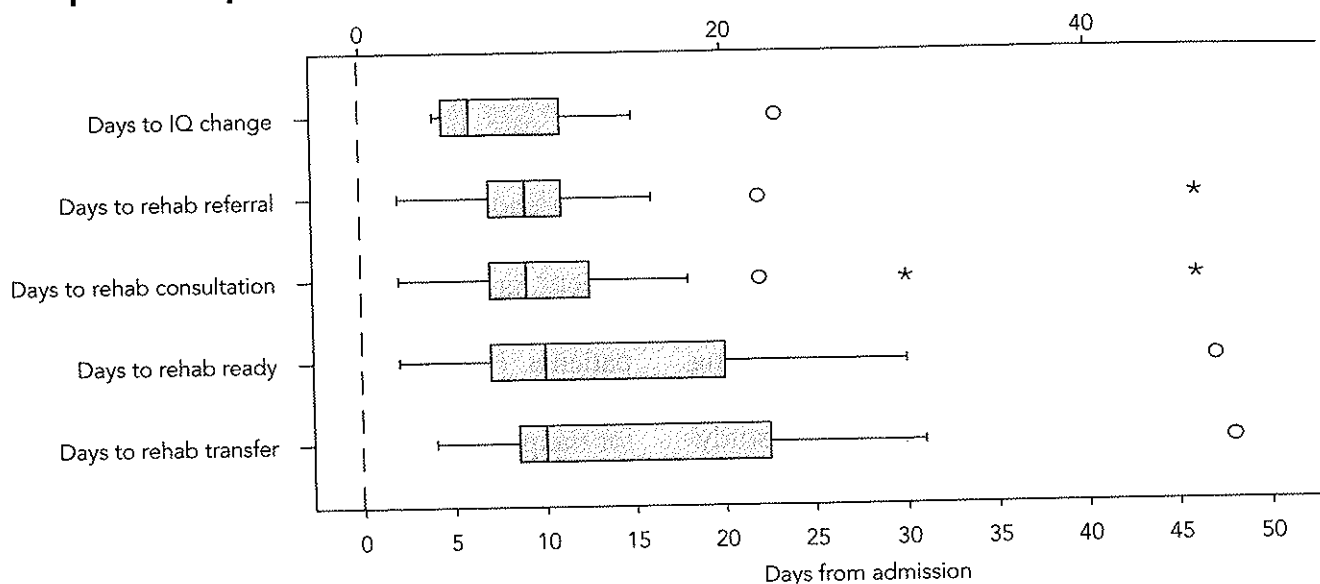
Overall, only 31% of the 2698 patient days in the acute care hospital met InterQual Criteria for acute level of care, with the breakdown by patient group shown in Box 2. The percentage of days meeting criteria for acute care was highest for the patient group followed from admission, being 54% for hip fracture patients and 34% for stroke patients. For patients followed from the time of amputation, 31% of days met acute criteria, while for the patient group followed only from the time of referral to rehabilitation only 12% of patient days met criteria for acute care.

### Stroke patients transferred to rehabilitation

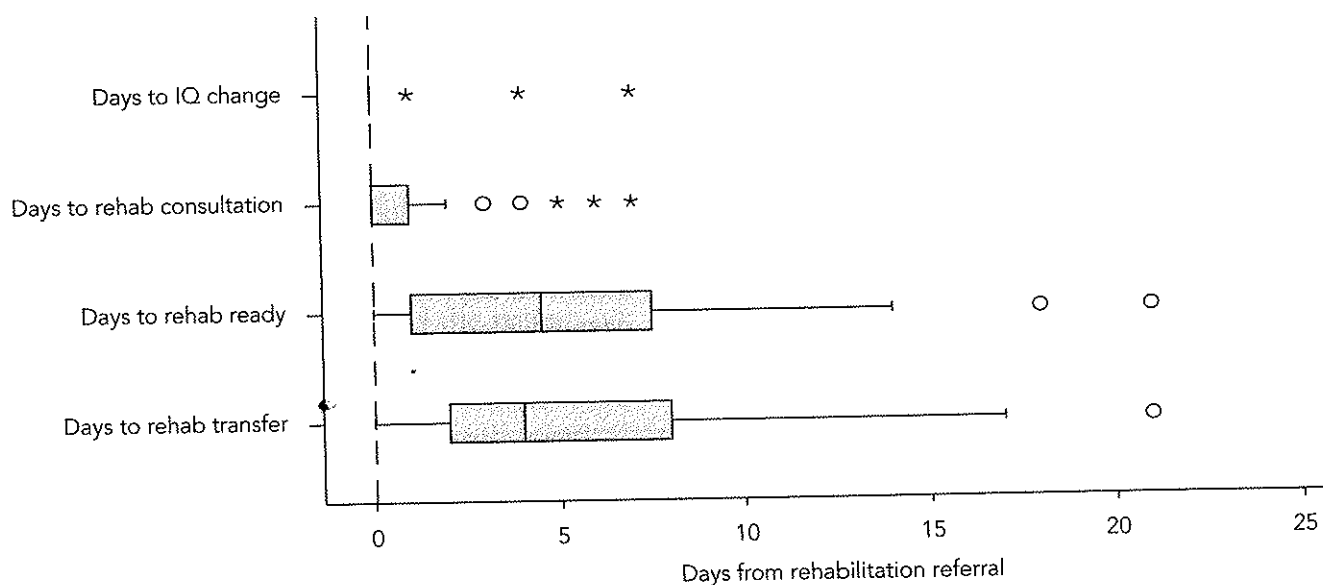
Box 3 shows data on the subset of patients admitted to acute care with stroke and subsequently transferred to rehabilitation. It shows: the number of days from acute care hospital admission until InterQual Criteria for acute care are no longer met (days to IQ change); days from admission until rehabilitation referral; days from admission until the rehabilitation consultation is attended; days from admission until the patient is deemed ready for transfer by the rehabilitation



#### 4 Hip fracture patients transferred to rehabilitation (n=23)



#### 5 Other patients transferred to rehabilitation (n=76)



service; and days from admission until the patient is actually transferred to rehabilitation.

The graph indicates that days not meeting InterQual Criteria for acute care are beginning to occur before the rehabilitation referral. The graph also shows that there is no delay between rehabilitation referral and consultation, but that the rehabilitation service is not deeming patients to be ready for rehabilitation transfer until well after the consultation and a median of 6 days after the InterQual Criteria for acute care are no longer

met. The graph also shows that there is only very minimal delay from when the rehabilitation service deems the patient ready for transfer to rehabilitation and actual transfer.

#### **Hip fracture patients transferred to rehabilitation**

Box 4 shows the same data as Box 3, but this time for the subset of patients admitted to acute care with hip fracture and subsequently transferred to rehabilitation. The results are very similar to the

stroke group, showing minimal delay between rehabilitation referral and consultation, and between the patient being deemed ready for rehabilitation transfer and actual transfer. Once again, patients are often not meeting InterQual Criteria for acute care before the rehabilitation referral, and the rehabilitation service is not deeming patients to be ready for rehabilitation transfer until well after the consultation and a median of 3 days after the InterQual Criteria for acute care are no longer met.

### **Other patients transferred to rehabilitation**

Due to the small numbers involved, results on patients with amputation transferred to rehabilitation are not presented. However, the pattern is similar to that of the stroke and hip fracture patients, with amputation patients not meeting InterQual Criteria for acute care well before they are deemed to be ready for rehabilitation transfer.

Box 5 shows data on the other rehabilitation referral patients, who were followed with the InterQual Criteria from the day of rehabilitation referral. It shows: the days from rehabilitation referral until InterQual Criteria for acute care are no longer met (days to IQ change); the days from rehabilitation referral until rehabilitation consultation; the days from rehabilitation referral until

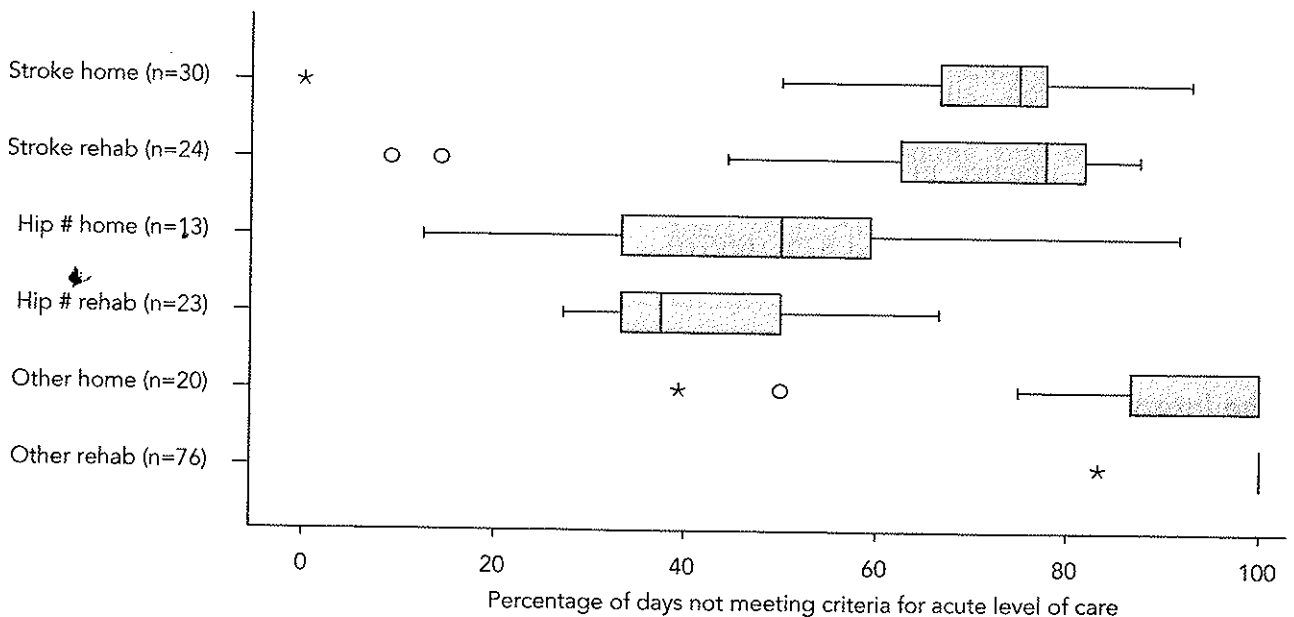
the patient is deemed ready for transfer by the Rehabilitation Service; and the days from rehabilitation referral until the patient is actually transferred to rehabilitation.

The graph indicates that the majority of patients do not meet InterQual Acute Care Criteria at the time of referral to rehabilitation (mean days from referral, 0.3; median days, 0; range, 0–7 days). It also indicates, once again, that there is minimal delay between rehabilitation referral and consultation, and between the date that the rehabilitation service deems the patient ready for transfer and actual transfer. The rehabilitation service is not deeming patients to be ready for rehabilitation transfer until well after the consultation, a median of 4 days after the InterQual Criteria for acute care are no longer met.

### **Comparison of patients transferred to rehabilitation with those discharged home from the acute care hospital**

A comparison of the number of days not meeting InterQual Acute Criteria was made for patients transferred to rehabilitation, with patients discharged home from the acute hospital. This is presented by diagnostic group in Box 6. Patients with amputation are excluded, due to the small number. Patients with other reasons for the end of

**6 Percentage of days not meeting criteria for acute level of care**



## 7 Patients reverting to further days meeting acute criteria

Diagnosis group	Discharge destination	Patients with subsequent acute care days (patients x number of acute care days)
Stroke	Home ( <i>n</i> = 30)	None
	Rehabilitation ( <i>n</i> = 24)	3 patients (2 x 1 day; 1 x 3 days)
Hip fracture	Home ( <i>n</i> = 13)	1 patient x 3 days
	Rehabilitation ( <i>n</i> = 23)	4 patients (1 x 1 day; 2 x 7 days; 1 x 13 days)
Rehabilitation	Home ( <i>n</i> = 20)	5 patients (1 x 1 day; 3 x 2 days; 1 x 20 days)
	Rehabilitation ( <i>n</i> = 76)	4 patients (1 x 1 day; 1 x 2 days; 2 x 3 days)

their acute hospital episode were not included in this analysis.

The percentage of days not meeting acute criteria is similar in each diagnostic group for patients who went home or who were transferred to rehabilitation.

A further analysis of the above groups was conducted to determine how frequently patients reverted to having days that met acute criteria, after being assessed as no longer requiring acute level care. As shown in Box 7, this occurred in 17 of 186 episodes (9% of these patients).

### Comparison of current practice for rehabilitation transfer with the InterQual Criteria

Box 8 shows the InterQual alternative level of care deemed appropriate at the time that acute criteria were not met, for patients transferred to rehabilitation. For the InterQual levels of care that have a requirement for therapy (acute and subacute rehabilitation, subacute therapy and skilled therapy), there was a high concordance rate with current practice in terms of patient selection — 92% (22/24) of stroke patients, 91% (21/23) of hip fracture patients and 87% (66/76) of other rehabilitation patients.

### Patients deemed ready for discharge home by the InterQual Criteria

There were 38 episodes (20 stroke, 3 hip fracture, 1 amputation and 14 other rehabilitation referral patients) where the InterQual Criteria deemed the patient suitable for discharge home, either with or without services, at the point where they did not

meet criteria for continuing stay in acute care. Of these, 31 patients went home, six went to rehabilitation and one to another hospital. Twenty nine of the 31 patients who went home had no further “acute” days from the time they were deemed appropriate by InterQual to be ready for discharge, while in two cases there were further acute days. For the 29 who went home without further acute days, 64% of their total bed-days in the acute hospital did not meet InterQual Criteria for acute care. All of these days followed the point at which the patient was deemed by InterQual to be ready for discharge home, and represented an average of 4.8 days per patient.

### Discussion

This pilot study has shown that the InterQual Criteria can be applied in an Australian acute care hospital. In accordance with overseas studies, the rate of inappropriate days in acute care, as determined by the tool, is high. As expected, the highest rate (88%) was for patients who were followed only from the time of referral for rehabilitation. Patients followed from acute admission — hip fracture and stroke patients — had lower rates (44% and 66%, respectively). Our results for stroke patients are similar to those from a large Canadian study that retrospectively reviewed 1596 cerebral vascular accident episodes in general hospitals, finding that 72.7% of patient-days did not meet InterQual Criteria for acute care.<sup>9</sup>

Given the variation found between current practice and that suggested by utilisation review, consideration needs to be given to its significance



and reasons for its occurrence. Variation may reflect a lack of validity of the InterQual Criteria in the Australian hospital setting or inefficiencies in the processes of care in the acute care hospital, such as the selection of patients for rehabilitation, or the discharge planning process. Our results show that the process of obtaining a rehabilitation consultation was not a cause of significant delay, nor was the time taken for patient transfer to rehabilitation from when they were deemed ready by the rehabilitation team.

The timeliness of rehabilitation referral may be an issue, as many patients admitted with hip fracture or stroke, and the majority of other patients referred for rehabilitation assessment, did not meet InterQual Criteria for acute care by the time of referral. This may indicate that rehabilitation referrals should be initiated earlier in the admission.

The time taken to transfer patients to rehabilitation is an issue warranting further exploration. Patients were not deemed ready for transfer until some days after the rehabilitation consultation, and well after the patient no longer met InterQual Criteria for acute care (median of three, six and four days for hip fracture, stroke and other rehabilitation referrals, respectively). Rehabilitation services in Australia probably represent a composite of the four InterQual levels of care that have a requirement for therapy, with the main difference between these four levels being the amount of therapy prescribed (ranging from 1 to 3 hours per day). The high concordance rate with current practice in terms of patient selection suggests that the rehabilitation service and InterQual are deeming the same patients as appropriate for "rehabilitation", with the issue being predominantly one of variation in the timing of

transfer. This suggests that the InterQual Criteria may have good validity for determining selection for rehabilitation, but further work is needed to verify this and to examine reasons for the variation in the timing of transfer.

Some of the variation may be due to an overly "conservative" approach by the rehabilitation service in the requirement for patients to be medically stable before transfer. Anecdotal reports from the reviewers suggest that other factors, such as the requirement for patients to undergo investigations only available in the acute care hospital before rehabilitation transfer (eg, trans-oesophageal echocardiogram or MRI in the case of stroke patients), the need for wound healing, awaiting medical consultation, or concerns about the availability of specific medical or surgical follow-up in the rehabilitation facility, may also play a role.

However, when comparing patients in the stroke, hip fracture and "other rehabilitation" referral groups who were transferred to rehabilitation, with those in the same groups who went directly home from acute care, similar rates of inappropriate acute care hospital bed-day usage are seen. This suggests that inappropriate acute care hospital usage, as determined by InterQual, is not confined to those patients requiring rehabilitation transfer.

The subgroup of patients determined by InterQual to be ready for discharge home directly from acute care at the point that they no longer met acute criteria, and who did go home, also exhibited delays in being discharged (an average of 4.8 days per patient). Caution is still urged, however, with our pilot noting that some patients had further "acute" days after being deemed to not meet acute criteria. This needs to be taken into

### 8 InterQual alternative level of care for patients transferred to rehabilitation

Diagnosis group	InterQual alternative level of care				
	Acute rehabilitation	Subacute rehabilitation	Subacute therapy	Skilled therapy	Other
Stroke ( <i>n</i> = 24)	17	4	1	0	2
Hip fracture ( <i>n</i> = 23)	0	9	7	5	2
Rehabilitation ( <i>n</i> = 76)	18	5	13	30	10

account when looking at the implications of implementing utilisation review programs and moving patients to subacute settings, or to discharge home, earlier.

While our results show that there were patients who remained in the acute care hospital for significant periods of time after not meeting InterQual Acute Criteria, and who met criteria for an available alternative level of care that seemed appropriate (ie, one of the four rehabilitation/therapy levels, or discharge home), there were some patients who met InterQual Criteria for other alternate levels of care that are commonly available in the US. These included "subacute" or "skilled" medical care. These levels may still require "hospital" care, but not necessarily "acute" hospital care. It was beyond the scope of this pilot to follow these patients in detail and determine when and how the InterQual care level changed if they remained in hospital. This finding is, however, consistent with the view that Australian "acute" care hospitals also cater for patients who can be described as "subacute".<sup>5</sup>

Further work is required to test the validity of the InterQual Criteria against current Australian acute care and rehabilitation practice. This should include validation of the InterQual concept of "medical stability" that is used to signify readiness for safe discharge home, or to a rehabilitation or other subacute level of care. It will also be important to compare the alternative care levels suggested by the tool with those available in Australia, and determine the extent to which hospital inefficiencies contribute to patients not meeting acute criteria. Further, it will be important to assess the extent to which funding and service models create barriers to the appropriate movement of patients between care settings.

Finally, if the above results prove satisfactory, data supporting the cost-benefit of introducing utilisation review into practice will be required, with an important consideration being that "inappropriate" days are reported to be less resource intensive, and therefore cost less, than acute days.<sup>25</sup>

We conclude that the InterQual Criteria may have a useful role in patient selection for rehabilitation, in facilitating the transfer of patients from

acute to subacute care, and in improving patient flow within acute care. The reasons for the variation between the results obtained from using the utilisation review tool and current clinical practice requires further investigation, and may include a lack of validity of the criteria in the Australian setting, inefficiencies in the processes of acute care, or the lack of suitable alternative care settings or the level of support available in these settings.

## Acknowledgements

After being approached by Christopher Poulos for information on the InterQual Criteria, McKesson provided the InterQual Adult (Acute and Rehabilitation/Subacute) Criteria, the associated computer software (CareEnhance Review Manager) and training free of charge for the purpose of a pilot study.

## Competing interests

The authors declare that they have no competing interests.

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## Appendix: Description of the InterQual criteria

### InterQual acute adult criteria

Within the acute adult criteria there are four levels of care, as follows:

- Observation — this level covers “observation units” or “rapid treatment units”, where patients are observed for 6–24 hours.
- Critical care — this level refers to intensive care units and coronary care units.
- Intermediate care — this level refers to “step-down” units.
- Acute care — this level refers to typical acute medical and surgical units.

Within each of these levels of care there are subsets, grouped by body systems or broad clinical

groupings such as “cardiovascular/peripheral vascular” or “infectious disease”. Each subset then contains the following components, each individually tailored to the subset:

- Severity of illness (SI) criteria. These are objective clinical indicators of illness. For example, severity of illness criteria include vital signs (eg, heart rate, blood pressure, temperature), and laboratory findings (eg, arterial blood gas measures).
- Intensity of service (IS) criteria. These consist of monitoring and therapeutic services, singularly or in combination, which can only be administered at a specific level of care.

■ Discharge screens. These look at the clinical indicators of patient stability and recommended alternate levels of care.

The “appropriate” level of care is therefore based on:

- The severity of illness exhibited by the patient.
- The intensity of service provided to the patient.
- Discharge screens that indicate readiness for discharge home or for transfer to an alternate level of care.

To meet appropriateness for admission, the patient must satisfy severity of illness criteria *and* intensity of service criteria. Approval is given once *any* of the severity of illness and intensity of service criteria points (or groups of criteria) are met. This means that the tool becomes much quicker to apply once the reviewer is trained in its use, as he/she will be able to select only the criteria that are most applicable to the particular patient. The criteria will also, depending on the patient’s clinical condition and treatment provided, approve a number of subsequent days in acute care (usually 1–3). The patient will then have a subsequent review scheduled to determine if he/she still meets criteria for continued stay in acute care, or whether discharge, or transfer to a lower level of care, is more appropriate.

The subsequent reviews in acute care are known as “continued stay” reviews. To meet criteria for continued stay in acute care the patient has *only* to meet the intensity of service criteria. Intensity of service criteria are categorised into two types: those where only one criteria point (or group of criteria) is required to be met (one IS), and another type that requires three criteria to be met, but which then requires a discharge review of the patient (three IS and discharge review).

When a patient does not meet criteria for continued stay in acute care he/she will then have a discharge review. The logic in conducting a discharge review is to start with the least intensive level of care and then apply the discharge criteria sequentially until the lowest appropriate alternate level of care is matched. Once again, with knowledge of the criteria, an experienced reviewer will

be able to determine the likely alternative level of care and start from that point, working up or down. The InterQual acute adult criteria also allow for a 24-hour “grace period” if intensity of service and discharge screens criteria are not met, and the reviewer can refer the patient to a secondary reviewer, or a secondary medical reviewer for physician override, should there be uncertainty.

### **InterQual rehabilitation and subacute criteria**

Patients who do not meet criteria for discharge home from acute care (with or without services) may meet criteria for rehabilitation or other subacute level of care. This can be confirmed with a preadmission review for one of the InterQual rehabilitation or subacute levels of care. To meet preadmission eligibility for these levels of care, patients must satisfy criteria from five categories. As with the acute adult criteria, the content within these categories varies according to clinical subsets. The five categories are:

- The patient must meet criteria for having had an illness, injury, surgery or exacerbation.
- The patient must have an impairment/s requiring at least minimal assistance.
- The patient must meet clinical stability criteria.
- The patient must have an ability to tolerate a rehabilitation program.
- Treatment must be precluded in a lower level of care, such as home care, due to clinical complexity.

One of the main distinctions between the levels of care that contain therapy is the amount of therapy that can be tolerated by the patient, varying from three or more hours of therapy per day for at least 5 days per week for “acute rehabilitation” to 1 hour of therapy per day, as well as a “restorative” nursing program, for the “skilled therapy” level of care.

As with the InterQual acute adult dataset, the rehabilitation and subacute criteria then have criteria for admission, continuing stay and discharge appropriateness.

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