Title

The capacity of the BATCH as a predictive tool for discharge planning for people with neuropsychiatric disorders

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Key Words: Behavioural Assessment Tool for Cognition and Higher Functioning (BATCH), neuropsychiatry, discharge planning, occupational therapy

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Abstract

Introduction: Assessment of cognitive function in people with neurosychiatric disorders can be challenging, due to behavioural and psychiatric symptomatology. The Behavioural Assesment Tool for Cognition and Higher Functioning (BATCH) is a validated observational tool that complements formal cognitive testing in this patient population. This study aimed to determine the capacity of the BATCH as a predictive tool for discharge planning.

Method: BATCH scores for 330 consecutive admissions for assessment to a specialist neuropsychiatry unit between 2007 and 2015 were analysed. The variables of interest included discharge destination, diagnosis, length of stay, age at discharge and BATCH scores (both subdomain and total). Significant predictors of discharge destination were identified using logistic regression analysis.

Results: After adjusting for age at discharge, three variables were found to be significant predictors of discharge destination - length of stay, diagnosis, and BATCH total score. The odds of being discharged to a destination other than home decreased by 3% for each additional BATCH total score unit. The length of stay remained a significant predictor of discharge destination when adjusting for BATCH total score, age at admission, and diagnosis.

Conclusion: BATCH total scores, but not subdomain scores, were predictive of discharge destination, along with the patients' length of stay and diagnosis. Knoweldge of this relationship may guide clinical discharge planning, when working with the complex needs of this group of patients. A larger study is indicated to determine the range and cut-off scores for discharge destinations other than home.

Key Words: Behavioural Assessment Tool for Cognition and Higher Functioning (BATCH), neuropsychiatry, discharge planning, occupational therapy

INTRODUCTION

Neuropsychiatry is an approach to the understanding of psychiatric disorders, which particularly focuses on the link between neuroscience and behaviour (Carson, 2014). While all psychiatric disorders are potentially amenable to neuropsychiatry, the most common diagnostic populations seen in these specialist services include people with atypical or young-onset dementia, familial neurodegenerative disorders, psychologically-driven presentations (such as factitious or conversion disorders), and movement disorders such as Parkinson's disease and major psychiatric disorders such as schizophrenia or depression. People seen by neuropsychiatry services often present with multiple and complex problems, and experience significant dysfunction in their performance of meaningful activities in daily life.

Cognitive and functional assessment form key components of the comprehensive treatment offered to patients with neuropsychiatric disorders. A range of standardised and non-standardised assessments are performed by the multidisciplinary teams who work with this population, including input from psychiatry, neuropsychology, neurology, occupational therapy, psychiatric nursing and social work. Each discipline contributes their assessments findings (including clinical observation, imaging, interviews and pen-and-paper testing) to collaborative clinical reviews, where the diagnosis and treatment of neuropsychiatric conditions are planned.

This study is set in a specialist, tertiary neuropsychiatric service based in [REDACTED], Australia. Admission to the inpatient unit and participation in testing is always voluntary, and the average length of stay is 11 days. Given the complexity of the population, the clinical team experiences significant challenges in engaging patients in the assessment and treatment planning process. The nature of presenting behavioural and psychological symptoms may be barriers to obtaining accurate and valid measures of both symptoms and function. Commonly encountered difficulties include distorted or paranoid interpretations of the purpose of testing, agitated behaviour, limited attention spans, and fear or anxiety due to medical procedures (such as imaging).

The Behavioural Assessment Tool of Cognition and Higher Function (BATCH).

The BATCH was developed as a means of enabling cognitive testing without the need for formal interviews, use of spoken or written language or high levels of co-operation. The BATCH provides a standardised proxy measure of cognition in individuals for whom confrontational testing is inappropriate due to behavioural, neurological and psychiatric symptoms (Miller et al., 2007). The assessment has been validated for use by Occupational Therapy and Psychiatric Nursing staff in neuropsychiatric services.

The BATCH is administered via informal ward observation. Following at least four days of routine ward participation including clinical interviews, ADL and activity participation and social or communication interactions with the staff and co-patients, the BATCH is scored by two staff, usually the occupational therapist and a nurse. The tool rates the frequency of observed behaviours in cognitive subdomains on a 5-point Likert scale (from 1=Never observed during the rating period to 5 = Behaviour occurs 100% of the time). By performing this rating collaboratively, the BATCH enables the capture of varying presentations with different staff and across differing activities and time points. The tool measures cognition across ten semi-independent observational domains: orientation, attention/concentration, personal responsibility, volition, adaptation, problem solving/judgment, executive, memory, language and visuoconstructional. Each domain consists of five to eight key behaviours for rating. These observational domains are integrated into five domains (attention, visuoconstruction, memory, executive and language) that are then converted via an algorithm into scores out of 100 (total) and 20 (subdomain). The algorithm enables the BATCH scores to be directly compared to the NUCOG (Walterfang et al., 2006), which is a standardised cognitive screening tool also developed in the unit.

A study which sought to establish the psychometric properties of the BATCH (Miller et al., 2007) used a consecutive sample of 76 adult neuropsychiatry inpatients over 6 months. This study compared the patients BATCH scores with those gained on standardised cognitive (Mini-Mental Status Examination, MMSE; Neuropsychiatry Unit Cognitive Screening Tool, NUCOG), psychiatric (Neuropsychiatric Inventory, NPI; Health of the Nation Outcome Scale. HoNOS) and functional (Bristol Activities of Daily Living Scale, BADL; Barthel Index) assessments. The

total BATCH scores were found to correlate very highly with total NUCOG and MMSE scores, with the most significant determinant of the BATCH score being cognitive function (NUCOG), functional status (BADLS) and symptom status (NPU). Physical disability did not correlate with the BATCH, as measured by the Barthel Index. Construct validity, internal consistency and correlation data were established and shown to be of high correlation (Miller et al., 2007). The study concluded that the BATCH was the first tool to capture standardised ratings of observational performance, which accurately measured cognitive status in neuropsychiatric patients and showed clinical utility in diagnostic formulation.

Since its development, references to the BATCH have appeared in several nursing journals, particularly in relation to the development of other cognitive assessment. Pickens et al. (2010) noted that the BATCH has adequate validity and reliability, but noted that factor analysis has yet to be undertaken and recommended that further testing be undertaken. During the development of the Cognitive Assessment Instrument of Obsessions and Compulsions (CAIOC-13), Dittrich et al., (2011) highlighted that the BATCH has been developed for a diagnostically heterogeneous inpatient population, and can be time intensive. The BATCH was also cited in an article about the development of the Nurses Observation Scale for Cognitive Ability (NOSCA), which also recommended more data collection on psychometric characteristics and its application to a geriatric patient group (Persoon et al., 2011).

Rationale for this study

The BATCH was incorporated into the general assessment protocol of the neuropsychiatric service in which this study occurred in 2005-2006 and has been in regular use for the past 12 years. Over this time, the lead author observed that the patient's total BATCH scores appeared to be strongly related with their discharge destination and the level of support required to meet their daily living needs. Patients with relatively high scores (>80 out of 100 approximately) seemed to be discharged home with carer or support services recommended more frequently, whereas those with lower scores (<80) appeared to be accommodated in residential facilities more often.

This study aimed to determine whether the BATCH was predictive of the discharge destination of neuropsychiatric patients after inpatient admissions. It also aimed to identify whether specific

subdomains of the tool had particularly significant predictive power. The null hypothesis was the BATCH total and subdomain scores would not predict with discharge destination and levels of support required following discharge from the inpatient unit.

METHOD

Ethical approval for this study was obtained from [REDACTED] (QA2015061), and all data utilised in analyses had already been collected as part of treatment as usual.

Sample

The BATCH scores of 519 consecutive patients admitted for assessment to an inpatient neuropsychiatry unit between 2007 and 2015 were reviewed for this study. All patients were assessed with the BATCH as part of routine observations made by nursing and occupational therapy staff. The secondary purpose for which the BATCH scores have been used in this study was directly related to the primary purpose of collection (i.e. evaluating their functional performance and discharge destination). The BATCH scores and demographic details for each patient were extracted from records kept by the occupational therapy department via a file audit.

Of the total potential sample of patient records, 185 admission dates were not recorded and these files were omitted. Demographic details were recorded for the final sample of 294 patients included age, diagnosis, length of stay and discharge destination. The discharge destinations were integrated into four categories: home/private residence, other hospital care, aged care residential facility or mental health residential facility. Clinical diagnoses were assigned to patients during admission, and the range of diagnostic groups was large and varied. Diagnoses were therefore integrated into six categories - 1) Nervous system, spinal and motor disorders, 2) Dementias, 3) Affective disorders, 4) Anxiety disorders, 5) Psychotic disorders and 6) Medical and Others.

Statistical analyses

Data were analysed using R 3.2.1 (R Foundation for Statistical Computing, Vienna, Austria). Means, standard deviations, and medians were calculated for continuous variables, while

frequencies were calculated for categorical variables. Chi-squared tests with Fisher's exact statistic for categorical variables were used for between-group comparisons. Since the distribution of the BATCH scores demonstrated negative skewness, the Mann-Whitney U test or Kruskal-Wallis one-way analysis of variance were utilised. For significant chi-square associations, the adjusted standardised residuals (ASRs) were examined to determine which cells had frequencies that were higher or lower than expected, where an absolute ASR value greater than 1.96 was considered statistically significant at $p < .05$.

A series of univariate logistic regressions were then conducted to predict discharge destination (home vs other) in relation to demographic and clinical variables, including BATCH total score, age at admission, the length of stay, and diagnosis. These demographic and clinical variables were also included in a multivariate logistic regression predicting discharge destination. The standard errors and corresponding confidence intervals and p-values of these logistic regressions were adjusted for multiple admissions. All analyses were considered statistically significant at $p < .05$.

RESULTS

Between August 2007 and April 2015, there were 330 episodes involving 294 unique patients. Of these patients, 267 (90.8%) had one episode, 20 (6.8%) had two episodes, 4 (1.4%) had three episodes, and 2 (0.7%) had four or more episodes. As shown in Figure 1, the median length of stay was between 8-14 days.

Insert Figure 1

The number of admissions resulting in discharge to home/private residence (n=270) exceeded those going to alternative destinations (n=60). Destinations other than home were grouped together owing to small representations within individual categories. Patients within the diagnostic categories of the dementias and nervous system, spinal and motor disorders had significantly greater representation than the remaining four categories, as shown in Table 1,

Insert table 1

Table 2 shows that there were statistically significant associations between discharge destination and three variables - length of stay, diagnosis, and BATCH total score. Significantly more patients with a length of stay 1 to 8 days (ASR = 1.97) and 8 to 14 days (ASR = 3.18) than expected were discharged home, while significantly fewer patients with a length of stay of 15 to 28 days (ASR = -2.8) and >29 days (ASR = -3.33) than expected were discharged home. In addition, significantly fewer patients with an affective disorder (ASR = -2.83) than expected were discharged to home, while significantly more patients with a BATCH total score of over 90 (ASR = 2.13) than expected were discharge to home.

Insert table 2

The BATCH scores for each discharge destination are presented in Table 3. Patients who were discharged home had significantly higher BATCH scores in the attention, visuoconstructional, memory and executive subdomain, along with significantly higher overall scores. However, no significant differences were found in relation to discharge destination in regards to language.

Insert table 3

The unadjusted logistic regressions demonstrated the BATCH total score and length of stay were significant predictors of discharge destination. Table 4 also highlights that after adjusting for age at discharge, the length of stay, and diagnosis, BATCH total score remained a significant predictor of discharge destination. The odds of being discharged to a destination other than home decreased by 3% for each additional BATCH total score unit. In addition, the length of stay was a significant predictor of discharge destination when adjusting for BATCH total score, age at admission, and diagnosis. That is, the odds of patients with a length of stay between 15-28 days being discharged to a destination other than home were 3.29 times greater than the odds of patients with a length of stay between 1 - 7 days. Similarly, the odds of patients with a length of

stay of over 28 days being discharged to a destination other than home were 6.09 times greater than patients with a length of stay between 1 - 7 days.

Insert table 4

The total range of Batch scores were then placed into four categories, which reflected the level of support each patient would be expected to need in order to maintain optimal functioning. These categories were identified to support the translation of the numerical values into practice, and assist in assessing the patient's needs for services following discharge. Scores of < 70 were identified as 'low function' and were associated with requiring residential care. Scores between 71 and 80 were identified as 'moderately low function' and were associated with requiring extensive community supports/supported accommodation. Scores between 81 and 90 were identified as 'average function' and were associated with requiring supports and aides in the home. Scores > 90 were identified as 'high function', and were associated with independent function without carers or supports in the home.

Using these four categories, the unadjusted logistic regression (Table 5) showed that the odds of a patient with a score of between 81 and 90 (Average function) being discharged to a destination other than home were 0.32 times greater than patients with a score less than 70 (Low function). However, when adjusting for age at admission, the length of stay, and diagnosis, these odds were no longer statistically significant. Conversely, the length of stay was a significant predictor of discharge destination when adjusting for categorical BATCH total score, age at admission, and diagnosis. In particular, the odds of patients with a length of stay between 15-28 days being discharged to a destination other than home were 3.72 times greater than the odds of patients with a length of stay between 1-7 days. Similarly, the odds of patients with a length of stay of over 28 days being discharged to a destination other than home were 5.95 times greater than patients with a length of stay between 1-7 days.

Insert table 5

DISCUSSION

The findings of this study demonstrate that the BATCH has clinical utility as a tool for discharge planning. The finding that affective disorders were twice as likely not to be discharged home than other diagnostic groups was unexpected. The severity of mood symptoms sometimes required a period of treatment, such as ECT, before a clear assessment of functional capacity was established. Only one previous study has examined the discharge destination for people admitted to an inpatient neuropsychiatric ward. A small study (n=19) of people with Huntington's Disease found that poor functioning in activities of daily living was a significant indicator of discharge from a neuropsychiatry unit to a destination other than home (Vasudev et al., 2010). The results reported here therefore contribute to a limited body of evidence regarding patients' outcomes following admission to neuropsychiatry inpatient units.

The present study also demonstrated that patients with total BATCH scores above 90 were significantly more likely to be discharged home. In order to remain living at home with little to no additional support, a person must possess a combination of higher-order cognitive skills enabling them to accurately perceive, manipulate, problem solve and remember diverse multi-modal information. As deficits in one or more of the cognitive areas became more apparent through observed functional performance, compensatory or supportive strategies such as the help from a partner, or provision of home-based services, were increasingly required to be arranged before returning home. Patients with the lowest BATCH total scores exhibited the greatest deficits in daily functioning on the ward, with impaired spatial orientation in the ward environment, difficulties handling and orientating everyday objects, rapid forgetting mid-task and poor judgment and problem-solving during activity performance. The relationship between poor activity of daily living function and a greater chance of being discharged to a destination other than home has previously been found in studies in old age psychiatry (Nakagawa et al., 2003; Astell et al., 2008).

No strong association between any one subdomain and the likelihood of successful discharge home were found in this study. This suggests that discharge is more about global function than specific skills. A patient needs a combination of domain scores to enable functional capacity, and thus the total score is more predictive. Attention, visuoconstruction, memory and attention were all significantly stronger subdomains in patients returning home. However, the language subdomain scores did not differ between home and other discharge destinations, and were equivocal across the range of functional categories. The tool was designed to be independent of language ability, using ratings of patients' observable behaviours and spontaneous interactions with co-patients and staff in performance of daily tasks and activities. Thus spoken language was neither required nor rated, enabling all patients regardless of linguistic diversity or extent of symptomatology, to be rated.

Length of admission showed a strong relationship with discharge destination, where patients admitted for 28 days or longer were more likely to be transferred to locations other than home, including aged care facilities, medical wards or supported accommodation. These patients were more likely to have complex presentations including medical co-morbidities that may have impeded psychiatric assessment, contributed to fluctuating presentations and the uncertainty of diagnosis. For some patients, the degenerative nature of a condition saw changes in functioning over the duration of an admission, making planning for adequate support uncertain and requiring significant team input and co-ordination. Other extended admissions represented complex family and home situations, which may have been magnified through the slow and tenuous course of medical opinions and tests the patient had undergone in the months and years before the neuropsychiatric admission. Delays in diagnosis is not an uncommon experience for people experiencing a range of neuropsychiatric disorders (Bradford et al., 2009; Thompson et al., 2009), which can limit the capacity of carers to continue to provide high level care for relatives with increasingly complex needs.

Implications for Practice, Education and Future Research

The guidelines for use of the BATCH state it should be administered after 4 days of inpatient admission, to allow the patient a settling in period and to enable behavioural observations across a range of time periods and activity contexts. When applied as a discharge-planning tool, it may

be re-administered towards the end of admission and once treatment has been optimised, and a steady functional state has been approximated. In comparing scores across these two assessment points, the occupational therapist can record domains of functioning that have responded to treatment.

In practice, the BATCH also have the potential to support communication and collaboration with clients, families and carers. The outcomes of the BATCH may assist the client and family in recognising the impact of medications, psychological and other treatments and investigations. The occupational therapist can use the findings to highlight how modified activities of daily living techniques and prompts have enhanced independence and confidence in domestic, personal care and social activities in the ward, and may be translated into the home environment. While it is common for functional capacity to improve in the familiarity of the home environment, the occupational therapist may also consider which cognitive domains are likely to remain static or may deteriorate, given the client's diagnosis. This may be discussed with the family to illustrate which remaining areas of strength may be optimised in various functional contexts. As the BATCH describes specific behaviours in everyday terms, the occupational therapist is not required to translate clinical language and can give actual examples of functional performance. The cut off scores may also support discussions around future accommodation and support needs, should discharge to the home environment no longer be possible.

The severity of cognitive impairment highlighted in BATCH domains can inform likely level of assistance required in the home, and when matched with the current potential supports available at home, can highlight gaps in care that may require additional services. Referrals for provision of meals, transport, shopping assistance and in-home respite, or case management through Home Care Packages, may be initiated pre-discharge, reducing waiting time in the community.

In regards to education, the existence of guidelines for the BATCH can support occupational therapists unfamiliar with the tool to utilise it. There is also potential for the BATCH to be introduced into the university curriculum as an assessment tool for students to build competence, given its relevance to any consumer experiencing cognitive problems. The BATCH is currently part of two ongoing research studies, which will help to further establish both its clinical utility and psychometric properties. There is great potential for its

future use in occupational therapy, given its established validity and reliability, and its explicit focus on occupational performance.

Limitations

The BATCH total scores (with 100 being the highest score) were skewed within the top 30% , and thus did not show an even or normal distribution curve. This may reflect the design of the tool in giving false higher ratings for all patients, which could overestimate their capacity to perform daily tasks at home. While the tool is sensitive enough to distinguish the differences in functioning within a narrow range of scores, a broader spread of scores or the use of raw scores only may improve sensitivity, clarify if cut-off scores for various levels of care may be applicable, and better highlight which subdomains are more influential towards successful functioning at home.

The study was completed in a single clinical setting, and therefore geographically specific factors may have been significant. There was also a limited population size within discharge categories other than home, which weakens the power of the analysis presented here. It is important to also note that discharge to other facilities (such as medical units) does not necessarily represent the patients final level of support required. The data included in this analysis only addresses discharge from the neuropsychiatric unit, and not ultimate discharge from services.

Conclusion

The present study has provided robust evidence that the BATCH can predict discharge destination for patients admitted to an inpatient neuropsychiatric unit. In practice, clinicians completing the BATCH can utilise the total score to support their clinical reasoning around discharge planning, paying particular attention to the patients length of stay, diagnosis and total score.

The study has also added to knowledge of the psychometric characteristics of this tool, although the authors acknowledge that further studies are required. The BATCH continues to be utilised on a regular basis at this neuropsychiatric ward, and the current total number of these assessments is higher than reported here. Also seeking the admission dates for the excluded 185

files could enable a sample sufficient to determine range and cut-off scores for discharge destinations, and consolidate other findings reported in this study.

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Competing Interests There are no competing interests to report in regards to this study.

Key Points for Occupational Therapy

- The BATCH total scores (along with patient length of stay and diagnosis) can be utilised to predict discharge destination
- Global function, rather than performance on particular sub-scales, was a greater influence on discharge planning decisions
- Occupational therapists play a key role in clinical decision making for people experiencing neuropsychiatric disorders

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Tables

Table 1 .: Reporting subject numbers in demographic categories and diagnostic subgroups

Diagnosis	N
Dementias	94
Nervous system, spinal, motor disorder	113
Affective disorders	41
Anxiety disorders	28
Psychotic disorders	32
Medical and Others	22
Total	330

Table 2. Relationship between discharge destination, length of stay, diagnosis and BATCH total scores

	Discharge Destination				
	Home	Other			p
	n	%	n	%	
Length of Stay					<0.001
1 - 7 days	45	91.8	4	8.2	
8 - 14 days	133	89.3	16	10.7	
15 - 28 days	72	72.7	27	27.3	
>28 days	20	60.6	13	39.4	
Diagnosis					0.014
Dementias	76	80.9	18	19.1	
Nervous system, spinal, motor disorder	98	86.7	15	13.3	
Affective disorders	27	65.9	14	34.1	
Anxiety disorders	25	89.3	3	10.7	
Psychotic disorders	23	71.9	9	28.1	
Medical and Others	21	95.5	1	4.5	
BATCH Total Score					0.048
≤70	51	73.9	18	26.1	

71-80	62	77.5	18	22.5
81-90	86	84.3	16	15.7
>90	71	89.9	8	10.1

Table 3. BATCH Scores in relation to discharge destination

	Discharge Destination								
	Home				Other				
	n	M	SD	Mdn	n	M	SD	Mdn	p
Total	270	80.30	13.23	82.65	60	72.75	17.52	78.05	0.002
Attention	270	16.18	3.16	17.10	60	14.30	3.84	14.90	0.000
Visuoconstructional	270	17.13	2.80	17.90	60	15.67	3.59	16.70	0.001
Memory	270	14.74	3.45	15.50	60	13.45	3.84	14.00	0.022
Executive	270	15.37	2.90	15.80	60	13.16	3.81	13.65	0.000
Language	270	16.88	3.13	18.00	60	16.19	4.08	18.00	0.398

M = mean, SD = standard deviation, Mdn = median

Table 4. BATCH as a predictor of discharge destination

	Unadjusted				Adjusted			
	OR	SE	(95% CI)	p	OR	SE	(95% CI)	p
BATCH total score	0.97	1.01	(0.95, 0.99)	0.000	0.97	1.01	(0.95, 0.99)	0.002
Age at admission	1.02	1.01	(1.00, 1.04)	0.125	1.01	1.01	(0.99, 1.03)	0.418
Length of stay								
1-7 days	1.00							
8-14 days	1.35	1.80	(0.43, 4.29)	0.607	1.36	1.79	(0.43, 4.28)	0.595
15-28 days	4.22	1.78	(1.36, 13.1)	0.013	3.29	1.77	(1.08, 10.0)	0.036
>28 days	7.31	1.89	(2.1, 25.51)	0.002	6.09	1.96	(1.63, 22.7)	0.007
Diagnostic group								
Dementias	1.00							
Nervous system, spinal & motor disorder	0.65	1.47	(0.31, 1.37)	0.254	0.74	1.50	(0.33, 1.62)	0.447

Affective disorder	2.19	1.54	(0.95, 5.07)	0.068	2.12	1.61	(0.83, 5.39)	0.116
Anxiety disorder	0.51	1.95	(0.14, 1.87)	0.307	1.00	2.05	(0.24, 4.09)	0.999
Psychotic disorder	1.65	1.61	(0.65, 4.19)	0.290	2.69	1.72	(0.93, 7.76)	0.067
Medical and others	0.20	2.88	(0.03, 1.6)	0.130	0.25	3.12	(0.03, 2.29)	0.218

OR = Odds Ratio, SE = Standard Error

Table 5. BATCH as a predictor of level of support required

	Unadjusted				Adjusted			
	OR	SE	(95% CI)	p	OR	SE	(95% CI)	p
BATCH total score								
<70 days	1.00				1.00			
71-80 days	0.82	1.45	(0.4, 1.7)	0.599	0.94	1.52	(0.41, 2.15)	0.887
81-90 days	0.53	1.48	(0.25, 1.14)	0.102	0.57	1.52	(0.25, 1.28)	0.173
>90 days	0.32	1.6	(0.13, 0.80)	0.015	0.43	1.67	(0.16, 1.19)	0.105
Age at admission	1.02	1.01	(1.00, 1.04)	0.125	1.01	1.01	(0.99, 1.04)	0.353
Length of stay								
1-7 days	1.00				1.00			
8-14 days	1.35	1.80	(0.43, 4.29)	0.607	1.38	1.78	(0.45, 4.23)	0.578
15-28 days	4.22	1.78	(1.36, 13.1)	0.013	3.72	1.73	(1.28, 10.9)	0.016
>28 days	7.31	1.89	(2.1, 25.5)	0.002	5.95	1.92	(1.66, 21.3)	0.006
Diagnostic Group								
Dementias	1.00				1.00			
Nervous system, spinal & motor disorder	0.65	1.47	(0.31, 1.37)	0.254	0.73	1.49	(0.33, 1.59)	0.425
Affective disorders	2.19	1.54	(0.95. 5.07)	0.068	2.10	1.62	(0.82, 5.37)	0.123
Anxiety disorder	0.51	1.95	(0.14, 1.87)	0.307	1.01	2.10	(0.24, 4.32)	0.991
Psychotic disorders	1.65	1.61	(0.65, 4.19)	0.290	2.43	1.70	(0.86, 6.85)	0.095
Medical & others	0.20	2.88	(0.03, 1.6)	0.130	0.25	3.15	(0.03, 2.38)	0229

OR = Odds Ratio, SE = Standard Error

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