International Journal of Geriatric Psychiatry

What becomes of people admitted to acute old age psychiatry wards? An exploration of factors affecting length of stay, delayed discharge and discharge destination.

Title:

What becomes of people admitted to acute old age psychiatry wards? An exploration of factors affecting length of stay, delayed discharge and discharge destination.

Running head:

Acute old age psychiatry wards: length of stay and discharge

Keywords: mental health services; length of stay; hospital discharge; delayed discharge; psychogeriatric; older people

Key points:

- Profiling patients with prolonged admissions or delayed discharge might be expected to identify areas where changes in practice could improve care and save costs. However, recent accounts of people admitted to old age psychiatry inpatient wards are scarce.

- The mean length of stay (LoS) in this study was over nine weeks and more than 40 per cent of patients experienced a delayed discharge. Nevertheless, the vast majority of patients admitted from home returned there.

- Whilst a range of patient and service receipt variables were associated with patient outcomes, locality was also important.

- Local, multi-agency responses are needed to reduce LoS and delayed discharge. However, there is also an urgent need for a greater national focus on the scope, purpose and effectiveness of mental health inpatient care.

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Competing interests:

None

Abstract

Objectives: The study sought to identify the variables associated with increased length of stay (LoS) on old age psychiatry inpatient wards. It also explored the factors related to delayed discharge, and the likelihood of patients admitted from home returning there.

Methods: Data were collected on the sociodemographic, clinical and service receipt characteristics of a six-month series of admissions to seven wards in England in 2010/11. The cohort was followed for a 9-11 month period. The relationship between patients' status on admission and the specified outcome variables was explored.

Results: Information was collected on 216 admissions, of whom 165 were discharged in the study period. Mean LoS was 64 days. Female gender, higher dependency, greater challenging behaviour and locality predicted extended stay. Forty per cent of cases experienced delayed discharge. Better physical health, more cognitive impairment, receipt of social care and locality were associated with delayed discharge. The vast majority of patients admitted from home returned there. Younger patients and patients with less dependency, cognitive impairment and challenging behaviour had a higher likelihood of returning home. Patients receiving social care or admitted because of carer stress, a risk of self-neglect, accidental self-harm or abuse/exploitation were less likely to return home.

Conclusions: The study provides a useful starting point for identifying cases on which future efforts to improve inpatient outcomes might centre, and suggests local rather than national responses may be needed. It also highlights an urgent need for a national focus on the scope, purpose and effectiveness of acute inpatient care.

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Introduction

Health care systems internationally are being challenged to meet growing demand whilst simultaneously increasing productivity, constraining costs and improving outcomes (World Health Organization, 2007; McKinsey and Company, 2009). The case for allocating scarce resources in an efficient and effective manner is thus axiomatic (Williams and Robinson, 2012). Given the high proportion of healthcare expenditure accounted for by hospital inpatient beds, it is perhaps not surprising that their use is being particularly scrutinised (McDonagh *et al.*, 2000; Bowen and Forte, 2012; Joynt and Jha, 2013). The issue is not whether hospital beds are needed - inpatient care is generally regarded as a fundamental component of both general and mental health services - but what should be provided for whom (Draper and Low, 2005; Appleby, 2012; Royal College of Physicians, 2012)?

In answering this question, many countries have sought to reduce unnecessary hospital admissions (Thompson and Poteliakhoff, 2011; Solberg, 2015). However, for patients who *are* admitted, there may also be opportunities to reduce length of stay (LoS) (NHS Institute for Innovation and Improvement, 2008; Royal College of Physicians, 2012). This includes facilitating the smooth and effective discharge of patients who no longer require acute hospital care, for delayed discharges are common and costly, prevent new admissions, and contribute to depression and dependency (Glasby and Lester, 2004; National Institute for Health and Care Excellence [NICE], 2015).

Over recent years, a number of policy initiatives have sought to address this issue in England. These include legislation permitting hospital trusts to charge local authorities (local government organisations) when general hospital beds are 'blocked' by people awaiting

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social care provision such as personal care or care home placement - a system known as 'reimbursement' (Community Care [Delayed Discharge] Act, 2003; Glasby *et al.*, 2006), and the development of a range of rehabilitative intermediate care services to facilitate early discharge and increase the proportion of patients able to return home (Department of Health [DH], 2000; NHS Benchmarking *et al.*, 2015).

To date, however, most of this activity has focused on older people in general hospital beds, and surprisingly little attention has been given to patients on specialist old age psychiatry (psychogeriatric) wards (Pinner *et al*., 2011). This is despite a median LoS of over 50 days (Health and Social Care Information Centre [HSCIC], 2013-14), high levels of delayed discharge (Barker and Bullock, 2005; Lewis and Glasby, 2006) and variable success in returning patients to their original environment (Moss *et al*.,1995; Draper and Low, 2005).

Against this background, profiling patients with prolonged admissions or delayed discharge might be expected to identify areas where changes in practice could improve care and save costs. Moreover, as a direct determinant of required bed numbers, understanding the factors that influence LoS is crucial to hospital planning (Kulinskaya *et al*., 2005). Official monitoring and routine data collection are limited (House of Commons Health Committee, 2002; Godden *et al*., 2008; NICE, 2015), however, and recent studies of old age psychiatry practice are sparse, with most published research dating from the 1980s and 1990s since when practice may have changed (e.g. Fulop *et al*., 1992; Domken *et al*., 1995; Paton *et al*., 2004; Shah, 2007). In light of this gap, this paper has three main aims: to examine the factors identified with (i) increased LoS on acute psychogeriatric wards; (ii) delayed discharge; and (iii) the likelihood that patients admitted from home will return there upon discharge – all issues of international relevance.

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Method

The research employed a prospective cohort design. Information was collected on a six-month series of consecutive admissions to seven wards for older people with mental health problems (118 beds) in 2010/11, and the cohort was followed for a 9-11 month period. Patients under 65 years old or for planned respite were excluded.

The data collection formed part of a larger study of the best mix of services to provide for older people with mental health problems in North-West England (Challis *et al*., 2014). Two wards were located in Site X, one for people with functional mental health problems and one for people with organic disorders; comparable facilities were provided in Site Y, which was managed by the same trust; and three wards were located in Site Z, each of which admitted a broad mix of patients with functional and organic disorders.

Data on the sociodemographic, functional and clinical characteristics of each patient were collected by nominated ward nursing staff shortly after admission using a bespoke data collection tool. This captured information on patients' age, gender, ethnicity, living situation, physical health, activities of daily living (ADLs), cognition, affect, behaviour and diagnosis, and contained a number of standardised measures (Mahoney and Barthel, 1965; Folstein *et al*., 1975; Yesavage *et al*., 1983; Zigmond and Snaith, 1983; Morris *et al*., 1994; Collin et al., 1998; Kroenke *et al*., 2003). It also collected information on the date and main reason for their admission (selected from a pre-determined list of 14 options), and their recent receipt of informal, specialist mental health and other community care.

Further data was collected about each cohort member at discharge. First, as part of weekly multidisciplinary ward rounds, staff considered whether each individual was medically ready for discharge and, if so, recorded the date this applied from and the 'ideal' discharge destination (e.g. home, extra care housing [ECH] or a care home). Second, nominated nursing staff collected data on their *actual* discharge date and destination, as well as the reason for any delay in their leaving hospital.

Chi square, Mann-Whitney U and Kruskall-Wallis tests were used to explore the factors associated with three dependent variables: the number of days between admission and discharge ('LoS'); whether discharges occurred three or more days after patients were deemed ready for discharge ('delayed discharge'); and whether patients admitted from home subsequently returned there ('returned home'). In addition, a Cox proportional hazards model was used to explore whether inpatients' characteristics on admission were related to LoS. This analysis accounted for the censoring that occurs in time-to-event data, allowing patients who died in hospital or reached the end of the study period without being discharged (10, 11 and 9 months after the data collection exercise began in sites X, Y and Z respectively) to be included in the analysis. It also estimated the independent association of each variable with the dependent outcome after controlling for correlation with other variables (Smith *et al*., 2003).

Ethical approval for the study was granted by Cambridgeshire 3 Research Ethics Committee (reference number 10/H0306/51) and research governance procedures in each participating organisation were fulfilled.

Results

Inpatients' profile on admission

Information was collected about 216 inpatient episodes (the unit of analysis): 67 in Site X, 53 in Site Y and 96 in Site Z. Of these, the vast majority (96%) related to people with a single admission episode. A full description of the study sample is available elsewhere (Challis *et al*., 2014; Tucker *et al*., 2015). However, in summary, six-tenths of admissions were female, over four-fifths were under 85 (mean age 76.7 years) and more than three-quarters lived at home, with most of the remainder living in some form of institutional care. Approximately two-thirds were admitted directly from their usual residence, a fifth were transferred from a general hospital ward and a small number were admitted from another psychiatric hospital or respite placement.

More than a third of admissions had an organic mental health problem (most commonly dementia), whilst approaching half had an affective disorder (most commonly depression). The remainder had another functional mental health problem. Approximately a fifth were in poor physical health and a third needed help with ADLs. Just under a third had at least moderate cognitive impairment and the vast majority displayed at least moderate challenging behaviour.

Around two-fifths of the admissions who lived at home received eight or more hours per week informal care, but less than a third had a formal social care package. By way of contrast, over three-quarters of the full sample had received some specialist mental health

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input before admission. The most important reasons for the admission of people with dementia were the need for behavioural management and the risk of harm to others; the most important reasons for the admission of other cases were the risks of deliberate self-harm and self-neglect.

Length of stay, delayed discharge and discharge destination

Of the 216 admissions, 48 were still on an acute mental health ward at the end of follow-up, three had died in hospital and 165 had been discharged (Table 1). The discharges represented more than nine-tenths of admissions in Sites X and Y, but only just over half in Site Z where baseline data collection started later. The mean LoS for the 159 cases for whom this information was available was 64 days (median 55 days), although the range and standard deviation were wide. Just under a third (29.6%) of admissions were for 28 days or less.

Information on the presence/absence of a delay in discharge was provided for 130 cases. Only a minority of admissions (43.1%) were discharged on the day they were deemed medically ready for discharge, whilst four-tenths had a delay of three or more days and approaching a tenth (9.2%) were delayed more than two weeks. Information was rarely provided on the reason for short delays (< 7 days) but data were also missing for some substantial delays. Several reasons for delay were given, including problems finding a suitable care home, waiting for assessment by a care home, accessing funding for care home placement and waiting for a suitable care home vacancy. Difficulties arranging appropriate and timely community care packages reportedly accounted for the majority of delays in patients returning home.

Information on prior *and* discharge residence was available for 145 admissions, of whom 19

were transferred to another mental health or general hospital ward, and one was discharged to

respite care.   Of the remaining 125, just under four-fifths returned to their former

accommodation, including 82 of 99 cases admitted from home.   Almost nine-tenths of

discharges were to the setting ward staff deemed optimal.

Table 1 about here

Factors associated with length of stay

Bivariate analysis indicated LoS increased with patients' age and was greater for care home

residents than for people who lived at home (Table 2).   Higher levels of dependency,

cognitive impairment and challenging behaviour were also associated with longer LoS.   No

significant relationship was found between LoS and gender, physical health, service receipt

(including hospital site) or reason for admission.   Nevertheless, people admitted because of

carer stress or the risk of self-neglect, accidental self-harm or abuse/exploitation had a mean

LoS approaching 20 days longer than people admitted because of the risk of deliberate self-

harm or challenging behaviour.   Patients admitted for assessment, review or treatment had a

mean LoS approaching 10 weeks.

Table 2 about here

Four independent variables emerged as significant predictors of time to discharge in the Cox

analysis (Table 3).   The model estimated a six per cent decrease in the likelihood of discharge

for every five point increase in Barthel score (with higher scores representing more dependency), whilst cases with moderate or high levels of challenging behaviour were 43 per cent less likely to be discharged than those with no/low levels. Hospital location was also a significant predictor – admissions in Site Z were 57 per cent less likely to be discharged than those in Sites X and Y – and weak evidence suggested females may experience a lower likelihood of discharge than males.

Table 3 about here

Factors associated with delayed discharge

Patients with greater cognitive impairment were more likely to experience delayed discharge than those with less impairment, as were those in fair-excellent as opposed to poor physical health (Table 4). However, no statistically significant relationship was found between delayed discharge and any other sociodemographic or clinical characteristic. Of the service receipt variables, patients who received formal social care before admission (at home or by virtue of care home/ECH residence) were more likely to experience a delay than people with no previous social care. Further, patients in Site Z were more likely to have a delayed discharge than patients in Sites X and Y.

Table 4 about here

Factors associated with the likelihood of returning home

Older patients and patients with high levels of ADL-dependency were significantly less likely to return home than younger or less dependent patients, as were patients with moderate or high (as opposed to low) levels of cognitive impairment or challenging behaviour (Table 5). People admitted because of a risk of carer stress or self-neglect, accidental self-harm or abuse/exploitation were also less likely to be discharged home than people admitted for other reasons, as were people who had a package of social care support before their admission.

Table 5 about here

Discussion

At a time in which healthcare funding is under unprecedented pressure (McKinsey and Company, 2009) and an old age psychiatry inpatient admission costs approximately £350 per day (DH, 2015), this exploratory research raises a raft of questions about the efficiency of bed utilisation. A selection of these are considered below.

Length of hospital stay

Although there have been extensive efforts to decrease LoS in general hospitals, this study suggests that many older people admitted to acute mental health wards continue to have prolonged stays. In comparing these findings with previous research, one must be mindful of the wider context, for recent decades have witnessed a rising number of older people with mental health problems and a declining number of hospital beds, leading to higher thresholds for hospital admission and longer hospital stays (Pinner *et al*., 2011; HSCIC, 2016).

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Nevertheless, by any measure an inpatient admission of over nine weeks is a considerable length of time.

In keeping with past research, the Cox analysis in this study found cognitive impairment to be a poor predictor of LoS (e.g. Moss *et al*., 1995; Draper and Luscombe, 1998). However, whilst previous work has reported inconsistent correlations with other patient variables, including age, gender, physical dependency, challenging behaviour and broad diagnosis (e.g. Domken *et al.,* 1995; Junaid *et al*., 1996; Parks and Josef, 1997; Blank *et al*., 2005; Chung *et al*., 2010), this study suggests that patients with higher levels of dependency and/or challenging behaviour are particularly likely to have extended admissions. In theory, identifying such patients could facilitate changes in practice to reduce LoS e.g. the introduction of targeted interventions to address challenging behaviour. The provision of appropriate care is, however, complicated by the multiple and complex needs this client group presents, and despite a growing body of research in this field, (e.g. Opie and Rosewarne, 1999; Moniz-Cook *et al*., 2008; Brodaty and Arasaratnam, 2012), there is a paucity of evaluations in hospital settings (Draper and Low, 2005; Pinner *et al*., 2011). Furthermore, although clinical pathways defining staff responsibilities, timelines and patient outcomes have been widely used to improve quality, clinical and financial outcomes on medical and surgical wards, examples of their employment in mental health care are rare (Bultema *et al*., 1996; Draper and Low, 2005).

If this suggests an urgent need for more research on the direct care and treatment provided in mental health inpatient settings, future studies might also explore the difference between localities evident in this study, and the extent to which these can be attributed to variations in administrative procedures, service availability or clinical practice. The fact that patients on

wards where (contrary to usual practice) older people with organic and functional problems were treated on the same ward, had the longest admission duration, is, for example, considered worthy of further investigation. It may also be timely to re-open discussion on the scope and purpose of acute inpatient care. The finding that patients primarily admitted for assessment, review or treatment (as opposed to problems too severe to be managed in the community), for instance, had a mean LoS approaching ten weeks makes one wonder if at least some of these cases could have been more appropriately managed in the community.

Delayed discharge

The finding that 40 per cent of admissions in this study had a delayed discharge suggests that achieving timely discharge from acute mental health wards remains a significant challenge. Although it is hard to define an 'acceptable level' of delay, it is unlikely that many people would find a wait of more than a fortnight acceptable.

Consistent with earlier work, patients with higher levels of cognitive impairment were particularly vulnerable to delayed discharge (Koffman *et al*., 1996). This is not to imply that patients' 'problems' per se were the issue, as witnessed by the finding that people in poor physical health were *less* likely than people in better health to experience delay. There was also little indication of poor communication with local authorities. Indeed, patients known to social care services before their admission were *more* likely to experience delay than those who were not. Rather the findings would appear to support wider evidence indicating that delays in discharge are primarily due to difficulties accessing appropriate services (Glasby *et al*., 2006; Baumann *et al*., 2007; Gaughan *et al*., 2015), and give some indication of the

particular support that was lacking e.g. specialist services for people who present with cognitive and behavioural symptoms of dementia but are physically fit.

Such concerns would seem to call for a multiple agency response involving new ways of working across service boundaries, including those between community and inpatient mental health services. This might encompass the use of electronic records and/or knowledge sharing proformas as currently being tested in one mental health trust's adult care services (Rowley et al., 2014), and the introduction of common management arrangements, staff rotation, integrated training and (in some cases) co-location (Naylor and Bell, 2010). Further, the identified variation between sites again highlights the importance of understanding the local context *text deleted here* (Glasby *et al*., 2006; NICE, 2015). Indeed, whilst much of the reaction to the rising number of delayed discharges from general hospitals has been at a national level, it would seem there is an argument for a more local response here, particularly given the noted lack of appetite for an extension of the reimbursement policy to mental health services (Lewis and Glasby, 2006) and the absence of mental health workers in most intermediate care teams (NHS Benchmarking *et al.*, 2015).

Ability to return home

In a culture that promotes community care for older people wherever possible (DH, 2001; Pavolini and Ranci, 2013), this study found that the vast majority of patients admitted from home were able to return there. Echoing research from the 1980s and 90s, however, patients with higher levels of dependency, cognitive impairment and challenging behaviour were less likely to return home than patients with lower levels (Domken *et al*., 1995). The importance of daily functioning concurs with the wider body of research on patients discharged from

general hospital wards. For example, functional independence was a significant predictor of discharge destination in a large European study of older people admitted to acute medical settings (Campbell *et al.*, 2005), and *the* key predictor of discharge setting in a study of a combined geriatric medicine/old age psychiatry unit in Scotland (Astell *et al.*, 2008). Whilst few older people are likely to be admitted to an acute mental health bed solely because of their functional dependence, this might suggest that hospital staff should pay equal attention to addressing ADL as to behavioural and psychological needs. This is not to say that home will be the most appropriate discharge setting for all admissions, however. Indeed, the proportion of patients discharged to what staff, patients and carers consider the optimal setting may be a better measure for future studies to consider, with users' perspectives seemingly neglected in previous research.

Methodological considerations

This study represents the practice of the local health and social care system in three areas of North-West England. The extent to which the findings can be generalised to other areas is unclear, for, as shown, the results varied between localities (albeit the median LoS was very close to the national average).   Furthermore, although the study period was felt to provide a representative picture of current practice, the relatively high proportion of patients who remained in hospital at the end of data collection reduced the sample size, and the high level of missing data for some potential variables of interest precluded their inclusion in the analysis. Future work would benefit from following a larger cohort of admissions over a longer period.

This study asked multi-disciplinary staff attending hospital-based ward rounds to identify delayed discharges. However, it is possible that other staff groups (including community-based practitioners) would have made different decisions. Moreover, it is not known whether the participating wards actively planned for discharge from admission (based on estimated discharge dates) or waited until later in people's hospital stays before, for example, referring to other agencies. Finally, in interpreting the findings, one should bear in mind that the studied outcomes will not have been independent of one another. Moreover, whilst the implicit assumption is that lengthy hospital stay is 'a bad thing', this may not always be true. Evidence is lacking on the potential trade-off between inpatient LoS and patient outcomes.

Conclusions

Given the lack of contemporary research on the LoS and discharge of acute mental health inpatients, the current study provides a useful starting point for identifying cases and issues on which future efforts to improve practice might profitably focus and highlights the importance of understanding the local context. Perhaps not surprisingly given the complex, multi-faceted nature of the questions it addresses, it also identifies a number of areas where future work is needed and may more generally be seen as a call for a greater focus on the scope, purpose and effectiveness of acute hospital care. Indeed, as a report by the Royal College of Psychiatrists states, given that mental health inpatient care focuses on some of the most vulnerable older people in our society, costs a large proportion of the mental health budget and employs the biggest number of staff, it is amazing that there has to date been so little focus on how it is best delivered (Pinner *et al*., 2011).

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Table 1. Length of stay, delayed discharge and discharge destination*

Variable	n	%	Mean (SD**)
Completed care episodes (total number of admissions)			
Site X	63 (67)	38.2	
Site Y	51 (53)	30.9	
Site Z	51 (96)	30.9	
Length of inpatient stay	159		63.6 days (51.5)
Delayed discharge			
< 3 days	78	60.0	
≥ 3 days	52	40.0	
Ability to return home (admissions from home only)			
Able to return home	82	82.8	
Unable to return home	17	17.2	
Ability to return to previous setting			
Returned to previous setting	92	78.0	
Changed setting	26	22.0	

*   Completed care episodes only
** Standard deviation

Table 2. Factors associated with length of stay (sample with completed hospital episode only)

Independent variable	n	Mean length of stay (SD*)	Test statistic	df	p-value
Gender					
Male	59	69.6 (47.4)	2441.0[a]	1	.085
Female	99	59.7 (53.9)			
Age	156		.180[b]		.025
Living situation prior to admission					
Home alone no informal care	37	66.9 (49.9)			
Home with informal care	84	56.1 (43.6)	8.5[c]	3	.036
Care home and ECH	30	87.7 (68.5)			
Other	6	33.3 (28.2)			
Physical health status					
Poor	35	54.9 (47.1)	1803.0[a]	1	.228
Fair to excellent	119	65.5 (53.5)			
Daily functioning (Barthel score)	159				.018[b]
Cognitive impairment					
Low	114	55.9 (43.3)			
Moderate	17	88.3 (56.8)	6.9[c]	2	.031
High	28	79.7 (69.6)			
Behaviour problems					
No/low challenging behaviour	21	39.5 (30.8)	987.5[a]	1	.019
Moderate/high challenging behaviour	138	67.2 (53.0)			
Mental health support pre-admission					
No formal mental health support	36	66.8 (57.2)	2110.0[a]	1	.833
Formal mental health support	120	63.7 (50.0)			
Social care support pre-admission					
No formal social care support	88	57.1 (42.4)	2655.5[a]	1	.178
Formal social care support	69	72.7 (60.7)			
Reason for hospital admission					
Risk of self-neglect / accidental self-harm / abuse or exploitation, carer stress	36	74.7 (49.3)			
Challenging behaviour, risk of deliberate self- harm, other care breakdown	83	56.4 (48.2)	5.2[c]	2	.075
Assessment, review or treatment	35	69.7 (59.9)			
Hospital site					
Site X	62	62.3 (50.8)			
Site Y	48	76.4 (64.9)	1.7[c]	2	.428
Site Z	49	52.5 (32.0)			

*Standard deviation; [a]Mann-Whitney U test; [b]Pearson Correlation; [c]Kruskal-Wallis test

Table 3. Predictors of time to discharge

Independent variable	β	Standard error	Hazard ratio	p-value
Gender				
Male (reference)				
Female	-0.330	0.177	0.719	0.063
Daily functioning (Barthel score*)	-0.013	0.004	0.988	0.006
Behaviour problems				
No/low challenging behaviour (reference)				
Moderate to high challenging behaviour	-0.560	0.242	0.571	0.034
Hospital location				
Other (reference)				
Site Z	-0.854	0.190	0.426	<.001

* Inversed

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Table 4. Factors associated with delayed discharge (sample with completed hospital episode only)

Independent variable	n	Delay < 3 days %	Delay ≥ 3 days %	Test statistic	df	p-value
Gender						
Male	43	51.2	48.8	1.9[a]	1	.163
Female	86	64.0	36.0			
Age	127			1564.0[b]		.065
Living situation prior to admission						
Home alone no informal care	28	60.7	39.3			
Home with informal care	73	67.1	32.9	5.0[a]	3	.171
Care home and ECH	23	43.5	56.5			
Other	5	40.0	60.0			
Physical health status						
Poor	26	96.2	3.8	17.5[a]	1	.000
Fair to excellent	98	51.0	49.0			
Daily functioning (Barthel score)	130			1694.0[b]		.102
Cognitive impairment						
Low	95	68.4	31.6			
Moderate	14	42.9	57.1	10.7[a]	2	.005
High	21	33.3	66.7			
Behaviour problems						
No/low challenging behaviour	18	66.7	33.3	0.4[a]	1	.534
Moderate/high challenging behaviour	112	58.9	41.1			
Mental health support pre-admission						
No formal mental health support	28	53.6	46.4	.7[a]	1	.399
Formal mental health support	101	62.4	37.6			
Social care support pre-admission						
No formal social care support	74	68.9	31.1	6.6[a]	1	.010
Formal social care support	54	46.3	53.7			
Reason for hospital admission						
Risk of self-neglect / accidental self-harm / abuse or exploitation, carer stress	32	56.3	43.8			
Challenging behaviour, risk of deliberate self- harm, other care breakdown	65	66.2	33.8	2.9[a]	2	.240
Assessment, review or treatment	29	48.3	51.7			
Hospital site						
Site X	52	75.0	25.0			
Site Y	38	73.7	26.3	25.4[a]	2	.000
Site Z	40	27.5	72.5			

[a]Chi-square; [b]Mann-Whitney U test

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Table 5. Factors associated with the likelihood of returning home (sample admitted from home with completed hospital episodes only)

Independent variable	n	Discharged home %	Not discharged home %	Test statistic	df	p-value
Gender						
Male	33	81.8	18.2	.04[a]	1	.851
Female	66	83.3	16.7			
Age	97			374.0[b]		.008
Living situation prior to admission						
Home alone no informal care	29	82.8	17.2	.0[a]	1	.991
Home with informal care	70	82.9	17.1			
Physical health status						
Poor	21	85.7	14.3	.05[a]	1	.830
Fair to excellent	74	83.3	16.2			
Daily functioning (Barthel score)	99			339.0[b]		.000
Cognitive impairment						
Low	80	91.3	8.8			
Moderate	8	37.5	62.5	21.7[a]	2	.000
High	11	54.5	45.5			
Behaviour problems						
No/low challenging behaviour	16	100.0	0.0	4.0[a]	1	.047
Moderate/high challenging behaviour	83	79.5	20.5			
Mental health support pre-admission						
No formal mental health support	25	84.0	16.0	.04[a]	1	.837
Formal mental health support	73	82.2	17.8			
Social care support pre-admission						
No formal social care support	67	88.1	11.9	4.7[a]	1	.031
Formal social care support	30	70.0	30.0			
Reason for hospital admission						
Risk of self-neglect / accidental self-harm / abuse or exploitation, carer stress	30	70.0	30.0			
Challenging behaviour, risk of deliberate self-harm, other care breakdown	45	91.1	8.9	6.0[a]	2	.050
Assessment, review or treatment	22	86.4	13.6			
Hospital site						
Site X	43	90.7	9.3			
Site Y	22	72.7	27.3	3.7[a]	2	.155
Site Z	34	79.4	20.6			

[a]Chi-square; [b]Mann-Whitney U test