

Impact of weekend admission and discharge on hospital length of stay

An analysis of emergency and elective conditions in England 2002/3-2007/8

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Introduction

Prolonged hospital length of stay (LoS) is undesirable for either hospitals or patients. Hospital stay longer than necessary could be caused by delayed diagnosis and treatment after admission and/or delayed discharge when long term care needs to be arranged. These delays might be associated with the 5 day working model with reduced staffing level over the weekend. It is fundamental to understand the variation of LoS by days of the week before unnecessary stays could be reduced and financial savings could be achieved.

Method

Using day of the week as proxy of hospital service availability, We examine the extent to which LoS varies for patients admitted and discharged throughout the week after controlling for patient case-mix and hospital characteristics. All patients admitted for stroke, hip replacement and hernia were identified from the English National Hospital Episodes Statistics database from 2002/3 to 2007/8. Sample is restricted to those discharged alive and contains 359,694 patients with a main diagnosis of stroke, 478,008 patients who had hip replacement, and 413,049 patients who had hernia repair. Negative binomial and probit models were applied to patient data on spell level.

Results

Age, gender, income deprivation and patient complexity are significant predictors for longer LoS.

Stroke		
	Marginal effect	Standard error
Friday admission	1.009***	0.262
Saturday admission	-0.839***	0.295
Sunday admission	-1.483***	0.308
Monday discharge	4.637***	0.328
Saturday discharge	-7.066***	0.490
Sunday discharge	-9.357***	0.680

Hip replacement		
	Marginal effect	Standard error
Saturday admission	-0.472***	0.113
Monday discharge	0.296***	0.081
Saturday discharge	-1.641***	0.104
Sunday discharge	-2.106***	0.130

Conclusion

LoS is associated with admission and discharge day of the week for patients who had stroke or hip replacement. The pattern is generally consistent with the 5 day working model in both health and social care sectors. The promotion of 7 day hospital care could reduce the variation in LoS caused by the limited service accessibility at weekends. The associated cost could be partly offset by the savings made through shorter LoS.