

## Re-admission of elderly patients after in-patient rehabilitation

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### SUMMARY

**The re-admission rates of a cohort of 97 elderly patients discharged from hospital were ascertained. The overall re-admission rate at 30 days was 15%, at 90 days 24% and at 180 days, 30%. On 4 occasions (9%) re-admission was deemed avoidable by the general practitioner. Deterioration of existing disease accounted for 16 (36%) and a new medical event for 22 (49%) re-admissions.**

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### INTRODUCTION

Re-admission rates may be used as a measure of the effectiveness of hospital treatment, and are increasingly scrutinised by purchasing authorities. Rates of re-admission to hospital of elderly patients vary widely and are likely in part to reflect differences in case-mix and dependency, in addition to efficacy of clinical care. Reported re-admission rates include 15.1% at 28 days from North East Thames,<sup>1</sup> 28% at 3 months in Edinburgh,<sup>2</sup> 38% at 6 months in London<sup>3</sup> and 19.3% at one year from Belfast.<sup>4</sup> As the lengths of inpatient stay reduce, scrutiny and monitoring of re-admission are increasingly relevant, particularly with the growing numbers of elderly patients requiring acute hospital care. As patients in Belfast are often re-admitted to different units or hospitals, current record systems are unlinked and do not provide a complete record of re-admissions. This may result in a falsely low perception amongst hospital staff of true re-admission rates.

It was considered important therefore to establish current re-admission rates from a rehabilitation ward for elderly patients for three reasons. Firstly to provide hospital staff with a complete record of the true re-admission rate, secondly to allow future changes in the rate of re-admission to be compared with current rates, and thirdly to enable the proportion of admissions deemed avoidable to be measured using a classification scheme previously proposed.<sup>5</sup>

### METHODS

All elderly patients discharged from a 24-bedded rehabilitation ward in Musgrave Park Hospital in Belfast over a 6-month period were included in

the study. To ascertain the number of patients re-admitted, the hospitals they were admitted to and the circumstances of re-admission, information was sought from the patients' general practitioner. A questionnaire was devised and sent to general practitioners after an interval of six months requesting details of hospital re-admissions, and asking the general practitioners to adjudge, using the classification scheme proposed by Clarke,<sup>5</sup> whether re-admission was avoidable or unavoidable. Avoidable reasons included (a) recurrence or continuation of disorder leading to first admission, (b) recognised avoidable complication or (c) re-admission for social or psychological reason within control of hospital services. Unavoidable reasons included (a) chronic or relapsing disorder, (b) re-admission for social or psychological reason probably beyond control of hospital services or (c) completely different diagnosis from previous admission. The opinion of the general practitioners regarding need for re-admission was sought to provide a primary care perspective rather than assessment by hospital staff. Additional information regarding outpatient therapy, pre-discharge home visits and receipt of social services support was obtained from hospital records.

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TABLE  
Demographic details of subjects re-admitted vs not re-admitted

	<i>Not re-admitted</i>	<i>Re-admitted</i>
Number of subjects	51	33
Male : Female %	33:65%	40:60%
Mean Age	82 years	81 years
Number of deaths (%) at 180 days	11(22%)	4(12%)
Living alone	19(37%)	12(37%)
Receipt of social services support	30(59%)	20(61%)
Occupational therapy pre-discharge home visit	11(22%)	8(24%)
Mean (median) length of hospital stay in days	31(17)	30(18)

## RESULTS

A total of 97 patients were entered in the study and responses obtained from general practitioners for 84 (87%) patients (Table). A total of 33 (39%) were re-admitted to hospital and 15 (19%) died during the 6-month follow up period. A second re-admission occurred in nine subjects during the study period and three patients had a third re-admission, making a total of 45 re-admissions. The overall re-admission rate at 30 days was 15%, at 90 days 24% and at 180 days 30%. Of the 33 patients re-admitted, four (12%) died during the re-admission episode, with the earliest death occurring 53 days after initial hospital discharge. On four occasions (9%) re-admission was deemed avoidable by the general practitioner on account of drug-induced bradycardia, complications of lung carcinoma and recurrence of anaemia and diarrhoea. Of the remainder, re-admission was attributed to deterioration of existing disease in 16 (36%) and to a new medical event in 22 (49%), with unavoidable factors including chest infection, chest pain, cholecystitis, fracture, hyperthyroidism, melaena, oesophageal stricture and stroke.

## DISCUSSION

This study demonstrates a high rate of re-admission to hospital of elderly patients, with 15% at 30 days and 30% at 180 days. The higher proportion of males re-admitted has been described in previous studies<sup>5,6,7</sup> and may reflect the increased likelihood of highly dependent males returning home to be supported by spouses, a situation often denied to females due to the previous death of their husbands.

The rates of re-admission of 15% at 30 days and 24% at 90 days recorded in this study are equivalent to that of 15.1% at 28 days reported from North East Thames<sup>1</sup> and 23% at three months in Middlesex,<sup>8</sup> but significantly higher than those previously reported in Belfast.<sup>4</sup> The mean age of patients was similar in the two studies, but it is probable that the average length of hospital stay of 31 (median 18) days in this study is considerably shorter than that current in 1985. The likely relationship of length of hospital stay to re-admission rate indicates that caution is necessary in the interpretation of re-admission rates in isolation from other variables. One such additional variable that was not obtained in this study was severity of illness.

The observed rate of 9% for avoidable re-admissions indicates some opportunity to reduce re-admission rates, but in the remaining 91% no avoidable factors could be identified. While strengthening community services may reduce hospital re-admissions,<sup>8</sup> there is a need to ensure adequate provision of hospital rehabilitative care for elderly patients in view of the projected demographic rise in numbers of elderly people in the population.

Careful monitoring of length of hospital stay allied to re-admission rates will assist in the provision of hospital services as well as providing a marker for the quality and effectiveness of medical care for elderly people, but only if avoidable unplanned re-admissions are accurately recorded. Establishing our current re-admission rate will enable future comparisons to be made as hospital length of stay reduces further. The

implementation of medical record linkage would greatly assist the gathering of such information in Belfast.

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