Clinical and scientific letters

Letters not directly related to articles published in *Clinical Medicine* and presenting unpublished original data should be submitted for publication in this section. Clinical and scientific letters should not exceed 500 words and may include one table and up to five references.

The cost of long hospital stays

Background

Inpatient investigation and treatment is expensive. In the current financial climate of the NHS, there is a drive to reduce inpatient admission times. Streamlining the inpatient process would be of benefit to patients, who generally prefer tests to be performed promptly, and are at higher risk of potential iatrogenic complications during prolonged hospital stays, such as hospital-acquired infection[1] and venous thromboembolism.[2]

Hospital managers use systems to estimate the cost of a hospital admission to facilitate budgeting. Patients are assigned to groups based on demographic and disease characteristics. In many hospitals, a coding proforma is filled for each patient at the time of discharge, usually by the junior medical staff, summarising data such as age, primary and secondary co-morbid diagnoses and procedures performed. These data are combined to allocate each patient a health resource group (HRG) code.[3] This code is associated with a tariff, which is an estimate of the cost-per-day of the inpatient admission. The tariff is linked to a trim-point, which is the maximum funded length of stay for that patient for that admission. If the trim-point is exceeded, a financial penalty is incurred. For the purposes of this study, an episode during which a patient exceeds the trim-point will be termed an 'overstay'.

It was hypothesised that inpatient overstays would prove a significant source of departmental overspending. The aim of this study was to assess the magnitude of the problem, associated financial costs, and to identify the contributory factors that could be addressed in order to reduce length of stay and save money.

Methods

The study was approved by the local audit and service evaluation committee. Sixty sets of consecutive case notes were obtained from inpatients on the acute neurology ward at the Royal Hallamshire Hospital, the neurology tertiary referral centre for the South Yorkshire region, with a catchment population of 1.8 million people.[4] For each patient, data were collected summarising demographics, diagnosis, procedures performed and time spent waiting for each investigation, opinion, transfer and report. Actual length of stay was compared to the assigned financial trim-point. The percentage of overstays and the associated financial costs for the sample were calculated. These data were extrapolated to calculate the total costs for the neurology unit per annum, by multiplying the mean overstay cost per patient by the number of inpatient admissions over the year.

Results

The patient group comprised 31 men and 29 women. Mean age was 53 years (standard deviation (SD) 18). Mean waiting times for each procedure are reported in Table 1. Mean length of stay was 10.4 days (SD 11.7, median 7, range 0–75). The mean allocated trim-point was 22.8 days (SD 16.2, median 15, range 3–57). However, 20% of patients exceeded their trim-point incurring financial penalties and, for these patients, the mean overstay was 6.75 days (SD 4.54, median 5.5, range 2–18), with a mean penalty of £1,385. Extrapolating these data to the population of 4,326 neurology inpatients seen in the unit last year resulted in estimated total costs of £1.2 million per annum, or 5.6% of the annual budget.

Discussion

Overstays are a significant problem, resulting in large financial penalties. Strategies for reducing these costs could focus on streamlining the inpatient investigation process, by investing in pressurised services, such as imaging and rehabilitation units; waiting for social assessment in an acute neurology bed is an inappropriate use of a costly resource.

Table 1. Waiting times for investigations, opinions and procedures.

Test/opinion/ procedure	Number of patients undergoing procedure	Mean time to test (days)	Mean time to result (days)
Computerised tomography	27	0.7	0.7
Magnetic resonance imaging	29	2.1	2.6*
Carotid duplex	5	1.2	0
Electroencephalopathy	9	0.3	0.5
Electromyography	9	1.4	0.8
Evoked potentials	2	0	1
Lumbar puncture	18	0.7	0.8
Positron-emission tomography	1	6	2
Biopsy	5	4.5	7.8
Other tests (echocardiogram/ 24 hour tape/etc)	17	3.5	2.6
Specialty opinion	16	1.6	N/A
Multidisciplinary team meeting	2	5	N/A
Rehabilitation	8	6.3	N/A
Transfer to other hospital	5	7.8	N/A

* influenced by outlier: 1.1 when removed.

Another strategy to reduce costs would involve addressing the system used to predict length of stay, which suffers from a logical flaw. The trim-point is derived following coding at the time of discharge (as it is influenced by diagnoses, procedures, etc). Therefore, overstays are defined after the event, so cannot be identified, monitored or prevented during the inpatient stay. The coding proformas used to allocate patients to HRGs appear a crude implement; there is considerable ambiguity in categorisation and they are usually filled by staff without specific training.

Addressing these issues has the potential to make large financial savings and improve the hospital inpatient process for patients.

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Interface geriatrics: modernising conventional geriatric medical care

Nowadays managing elderly acute medical admissions is a big challenge in hospitals as the numbers of patients at age 75 and above admitting to acute medical beds are rapidly growing more than any other age group over the decade. Admissions of this particular age group significantly increased up by two thirds from 2000 to 2010.[1] In this situation, effective acute geriatric assessment and care is more important than before. Therefore, the conventional geriatric medical care should be innovated and modernized to meet the health needs of rapidly growing elderly acute admissions.

A study done by a group of researchers based in Leicester highlighted that elderly patients had risks of long inpatient stay, quick discharge of these patients did not always serve them well and therefore specialist geriatric assessment was needed for better overall outcomes.[2] On the other hand, 55% of elderly frail patients discharging back to the community from acute medical care were readmitted and about 26% died in the following 12 months.[3] All these circumstances pointed that these (elderly) patients should receive comprehensive geriatric assessment on admission and a clear integrated care pathway should also be established in between community and secondary care (acute hospital). These requirements motivated the birth of 'interface geriatrics', the new integrated geriatric care bundle. It can be defined in various ways but its core principles are implementation of rapid comprehensive geriatric assessment to acute elderly admissions in hospital and harmonious combination of hospital and community geriatric cares.[4] A care model of interface geriatrics can be seen in Fig 1.

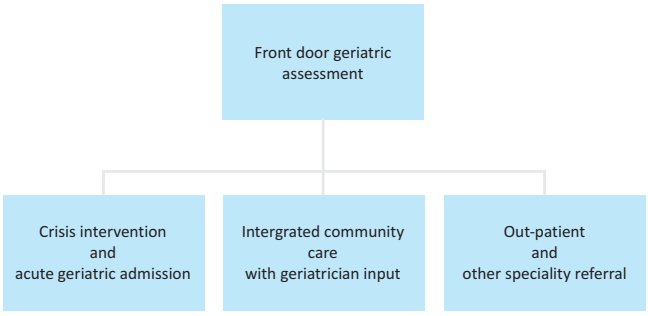

Fig 1. A model of interface geriatric care pathway.

In this care bundle, all elderly acute admissions such as patients age 75 and above must be promptly seen and assessed by a multidisciplinary geriatric medical team on admission such as in acute medical assessment unit rather than waiting for these patients being transferred to a care of the elderly ward. Implementing this care approach can lead to various benefits in acute care of the elderly such as avoiding unnecessary admission, reducing length of inpatient stay, organising comprehensive discharge care plans, reducing delayed discharge and reducing the risk of re-admission. A mapping review on current studies and trials about interface geriatrics showed that this care pathway could provide positive outcomes to frail, elderly patients admitting to acute medical beds.[5] The DEED II study, a randomised controlled trial in Australia, conveyed messages that a compressive geriatric assessment integrating primary and secondary cares could reduce readmissions by about 25%.[6] And participation of a geriatrician as a part of a community care team reduced the need of access to acute medical service and unnecessary admission.[7] The cost-effectiveness of an interface geriatric care pathway is not evaluated scientifically so far in various studies but it can be generally justified that such an integrated care pathway provides benefits in term of funding and commissioning.

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