

Evaluation of a dedicated short-stay unit for acute medical admissions

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ABSTRACT – The number of acute medical admissions to hospital continues to rise although not all need a prolonged stay. At the Queen Elizabeth Hospital, Gateshead, a short-stay unit (SSU) was developed specifically for such patients. Admissions to SSU over the first three weeks of 2006 were assessed. A total of 209 patients were admitted to SSU (10 patients a day). This accounted for 35% of all admissions through the medical assessment unit (MAU). Of these, 149 (71%) went home within 48 hours and a further 14 (7%) went home from SSU within 72 hours. The mean length of stay was 33 hours and the overall length of stay across the MAU (4.6 days) was significantly lower than the corresponding period a year earlier (5.5 days) ($p=0.02$). The mean daily number of medical patients staying on non-medical wards was also lower during the study period than in 2005 (11 v 38; $p=0.015$). Readmission rates and percentage bed occupancy did not change. This paper shows that the introduction of an SSU helps to identify and treat those patients with more minor illness who can often be discharged home at an earlier stage.

KEY WORDS: acute medical admissions, early discharge, occupancy rates, short-stay unit

Introduction

Acute medical admissions have continued to rise over the last few years, despite the Department of Health's attempts to move more work into the community. This has led to an increased pressure on beds resulting in high occupancy rates, boarding to non-medical wards and rising readmission rates. The quality of care offered to patients is threatened as a consequence. Increased admissions are due in part to the longer survival of some patients with chronic disease but may also represent a lower admission threshold.

These issues are not new. In 1996 a national audit of 42 hospitals concluded that suboptimal involvement of consultants in acute medical care was a significant problem.¹ A number of proposed solutions have been described but relatively few have been evaluated.² Since then, acute medicine has emerged as a specialty in its own right with the intention of

providing 'expertise in best initial care; as good as that of the appropriate specialist, but limited to a maximum of the first 48 hours of care'.³ The system of consultant cover at the Queen Elizabeth Hospital, Gateshead, was altered in 2003 to anticipate these requirements. The on-call consultant is expected to be present on the medical admissions unit (MAU) from 8.30 am until at least 6 pm, reviewing all admissions with the junior doctor once the clerking and baseline test results are available. All other duties are cancelled during the on-call period. The system is analogous to that described elsewhere.⁴

An increase in acute medical admissions of 11–15% per annum between 2002 and 2005 was observed leading to the development of a novel approach to deal with admissions predicted to last less than 48 hours. A unit specifically addressing the needs of those patients was discussed, based on an audit performed in 2005 demonstrating that up to 40% of all acute medical admissions stayed in hospital less than 48 hours. By concentrating these admissions in one subacute area adjacent to the MAU, investigations, treatment and discharge for this subgroup could be facilitated. This area replaced a base medical ward and became the short-stay unit (SSU). The SSU was designed to ensure optimal care through early and regular senior consultant support provided by the appointment of a second consultant specifically to staff the SSU from 9 am to 5 pm, supported by a foundation doctor. The intention was to ensure that patients with an anticipated short length of stay would receive appropriate and rapid attention by focused staff without unnecessary transfer to another ward. The aim was to improve patient care and to assess the effects of the SSU on the overall length of stay across medicine, percentage bed occupancy and those staying in hospital for non-medical reasons.

Methods

The 21-bed SSU was established in December 2005 with no net change in medical bed numbers and no extra investment from the trust. Existing staff were redeployed from adjacent medical wards and the senior medical rota was adjusted accordingly. The foundation doctor rotation was specifically

redesigned to rotate foundation year (F)1 and F2 junior doctors through SSU to gain experience by working on a one-to-one basis with the allocated consultant of the week. Nursing staff who had expressed an interest in working in an acute unit were also redeployed on the SSU from medical base wards. Clinical audit project approval was also obtained from Gateshead Health NHS Trust in December 2005.

Data on admissions to and discharges from SSU were collected over a three-week period during January 2006. This included date and time of admission and discharge, discharge diagnosis and outcome, discharge destination and subsequent length of stay. Additionally, data on the overall length of stay across all medical beds, the percentage occupancy of medical beds, 28-day readmission rates and the number of daily medical stays in non-medical beds were recorded. Statistical comparison with data for the equivalent time period one year earlier was achieved using unpaired students *t* test for length of stay and the Chi squared test for mean numbers of overnight stays for non-medical reasons.

Results

Information on 209 admissions to SSU over a three-week period was collected. These patients represented 35% of all admissions to the MAU during this time. Of the admissions, 170 (82%) patients stayed on the SSU 48 hours or less, and of those 149 were discharged home, 20 patients required transfer to a med-

ical base ward and one patient died. The remaining 39 patients stayed on SSU beyond 48 hours. Twenty-seven went home and 12 went to other wards. Overall, 176 patients (85%) were discharged home from the SSU (Table 1).

The mean length of stay on SSU was calculated at 33 hours. Of the 176 patients discharged home from SSU, however, 87 spent less than 24 hours in the unit equating to a median length of stay of 22 hours (range from 15 minutes to 146 hours).

Patients with respiratory symptoms (n=40) were the largest group admitted to SSU followed, in order of decreasing frequency, by those with suspected cardiac disease (n=35), locomotor problems (n=26) and patients with gastrointestinal (GI) symptoms (n=19) (Fig 1).

Mean length of stay for all medical admissions fell from 5.5 days to 4.6 days (p=0.02). In addition, the mean daily number of medical patients nursed in non-medical beds fell significantly from 38 to 11 (p=0.015). Twenty-eight day readmission rates remained stable at 6.1% during January 2006 and were comparable with the rate of 6.2% in January 2005. Finally, percentage medical bed occupancy remained high at 94% and was unchanged over 12 months.

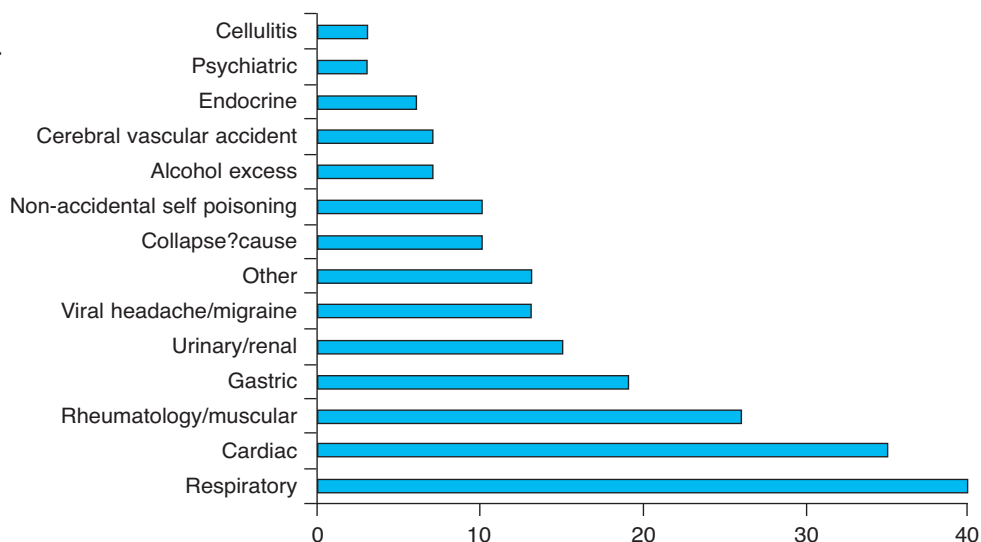
Discussion

Prompt access to the nearest appropriate hospital for anyone with an acute illness is a major tenet of the NHS. Acute medical admissions account for the majority of hospital inpatients at any one time in most district general hospitals (DGH). Discharge of patients is often more difficult to arrange, however, with delays often occurring for reasons outside the immediate control of hospital staff. This imbalance has contributed to the fact that the number of medical inpatients often exceeds a hospital's medical bed capacity, as predicted 10 years ago when the mean bed occupancy was only 79%.⁵ The risk of no beds being available for acute admissions are discernible once bed occupancy exceeds 85% and creative use of limited facilities is required to maintain an open admissions policy at all times.⁶

Table 1. Length of stay data.

Length of stay	Number of patients discharged	Number of patients moved to base ward
<24 hours	87	10 (+ 1 death)
More than 24 hours but less than 48 hours	62	10
More than 48 hours but less than 72 hours	14	5
>72 hours	13	7

Fig 1. Breakdown of diagnostic categories.



Faced with a steady increase in the number of acute medical admissions coupled with recommendations that medical bed numbers should be further reduced, the concept of an SSU is worthy of further consideration. This study shows that the vast majority of patients transferred to the SSU stay less than 48 hours, and that most can be safely and effectively discharged home, with no rise in the readmission rate. Criteria for transfer to the SSU were based solely on the estimated length of stay by the admitting doctor. At times of pressure in the MAU, patients were occasionally sent inappropriately to the SSU with conditions that clearly required an admission of more than two days. These patients then needed to wait for a bed on an appropriate medical base ward and reduced the efficiency of the SSU.

Those attending the SSU displayed a large range of medical conditions. Significant contributions come from respiratory disease, where exacerbations of chronic obstructive airways disease accounted for a high percentage of attendances, and cardiac conditions where heart failure and chest pain without acute electrocardiographic changes were common. Patients with locomotor problems caused by articular disease or acute vertebral fracture were also frequently seen, as were patients with minor GI bleeding or recurrent abdominal pain. Given the chronic nature of many of these conditions, we were reassured to note that re-admission rates for acute medical patients during January 2006 remained unchanged when compared with January 2005.

Although our study was not designed to address compliance with the four-hour target in the accident and emergency (A&E) department it is worth noting, however, that this improved from a mean of 96% in November 2005 to 99% in January 2006. It is likely that the development of the SSU contributed to this by increasing the number of acute medical beds available for patients triaged in A&E. In common with many other hospitals a recent significant change in the point of access of patients to acute medical care was observed. In 2002, 68% of medical admissions came via a general practitioner, whereas 67% of all medical admissions now attend via A&E. This places a huge burden on staff in this area which, when combined with the four-hour target, requires the ability to move patients rapidly to an appropriate area. This paper argues that the SSU expands this bed pool, refines the options available and may be appropriate in any medium or large DGH receiving undifferentiated medical emergencies.

Despite reducing the number of consultant physicians working on the medical base wards, the mean length of stay of medical patients fell significantly by comparison with the pre-

vious year. Data on outpatient activity were not collected and compared with the previous years, however, so it is possible that this may have been adversely affected by the development of the SSU. This may ultimately transfer some of the pressure from acute medical admissions to meeting the 18-week outpatient target.⁷ In order to avoid this, it might be necessary to expand the number of consultant acute physicians to staff MAU and possibly SSU at a national level. This process fits with guidelines published by the Royal College of Physicians⁸ and the concept of including foundation year doctors within the SSU accords with the perceived need for increasing the exposure of newly qualified juniors to acute medicine in a creative manner.⁹

In summary, the establishment of the SSU at the Queen Elizabeth Hospital, Gateshead, has made more effective use of limited resources with measurable benefits to patients and wider adoption should be considered.

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