

Are hospital admissions reduced by Acute Medicine consultant telephone triage of medical referrals?

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Abstract

The NHS in England is facing well-documented pressures related to increasing acute hospital admissions at a time when the acute medical bed-base is shrinking, doctors working patterns are increasingly fragmented and many acute hospital trusts are operating a financial deficit. Novel strategies are required to reduce pressure on the acute medical take.

We conducted a prospective cohort study to assess the impact of acute medicine consultant triage of referrals to the acute medical take on the number of acute hospital admissions as compared to a historical control cohort.

The introduction of an acute medicine consultant telephone triage service was associated with a 21% reduction in acute medical admissions during whole the study period. True admission avoidance was achieved for 28.5% of referrals triaged by an acute medicine consultant. The greatest benefit was seen for consultant-triage of GP referrals; 43% of all GP referrals resulted in a decision not to admit and in 25% the referral was avoided by giving advice alone.

Consultant telephone triage of referrals to the acute medical take substantially reduces the number of acute medical admissions as compared to triage by a trained band 6 or higher nurse coordinator. Our service is cost effective and can be job-planned using 6 full-time equivalent acute medicine consultants. The telephone triage service also provides additional benefits to admission numbers beyond its hours of operation and the general management of the acute medical take.

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Introduction

The Royal College of Physicians report “Hospitals on the edge? The time for action” laid bare the challenges facing secondary care. The facts are worth restating. The number of general and acute beds has decreased by a third over the past 25 years, while in the last 10 years there has been a 37% increase in emergency hospital admissions. In 2010–11 there were in excess of 16 million Emergency Department attendances and 3.6 million of these patients required hospital admission.¹ Secondary care faces these challenges at a time when the NHS has been asked to find £20 billion in efficiency savings and at a time when half of all acute trusts in England are forecasting a year-end deficit for 2014–15.²

Previously published data suggests that consultant presence on the Acute Medicine Unit reduces length of stay, without negative impact on mortality or readmission rates, and reduces the number of inappropriate acute medical admissions.³ We hypothesised that the involvement of Acute Medicine consultants in the triage of referrals to the acute medical take would similarly reduce the number of acute hospital admissions.

Methods

We conducted a prospective cohort study to assess the impact of acute medicine consultant telephone triage of referrals to the acute medical take on the number of acute hospital admissions as compared to a historical control cohort.

We included all referrals made to the acute medical take from June 2011 to May 2012. Throughout the study period an acute medicine consultant triaged all referrals by telephone on weekdays between the hours of 9am and 5pm. During this time the consultant had no other scheduled clinical duties. For each referral, data were recorded regarding referral source, outcome of referral and admission avoidance measures if applicable. Outside of the hours of the consultant screening service, medical referrals were made through a senior registered nurse (band 6 or above) based on the acute medicine unit and supported by the medical registrar on-call if necessary. The historical control cohort data were collected prospectively between June 2010 and May 2011. During this period all referrals were made through a senior registered nurse (band 6 or above) based on the acute medicine unit and supported by

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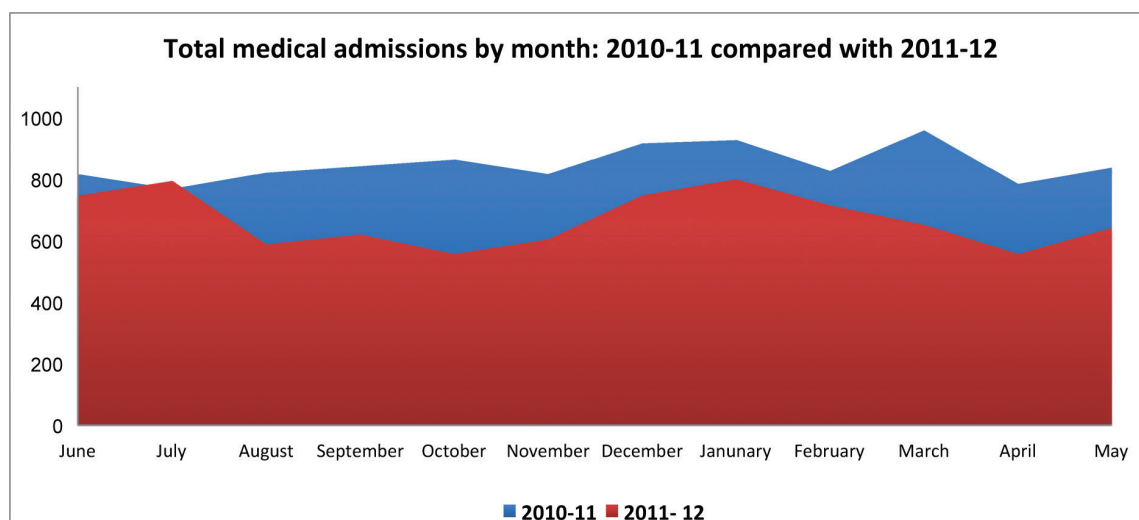


Figure 1.

the medical registrar on-call or an acute medicine consultant if necessary.

All data was collated and analysed using Microsoft Excel. Statistical comparison between outcomes was conducted using Fisher's Exact Test with a two-sided p value.

Results

The introduction of acute medicine consultant referral triage was associated with a 21% reduction in acute medical admissions between May 2011 and June 2012 (8036 admissions) when compared to the previous twelve months (10190 admissions). [Fig. 1] During the study period 54% (4341 admissions) of the total number of admissions occurred following referral outside of the consultant telephone triage service times.

During the study period 5729 referrals were screened by a consultant at an average of 22.4 referrals per 8-hour day. In total 35.5% (2034 referrals) resulted in an outcome other than acute admission of the patient. (Figure 2) Allowing for patients who were then subsequently admitted within 30 days, true admission avoidance was achieved for 28.5% of referrals (1638 patients). The median age of patients where admission was declined was 68.4 years (range 7 – 103 years).

Referrals during the study period were initiated by GPs in 54.7% of cases and by the local Emergency Department (ED) doctors in 40.6%. Comparatively few referrals (4.7%) were received from other sources. It was more likely that admission would be declined if the referral was made by a GP than by an

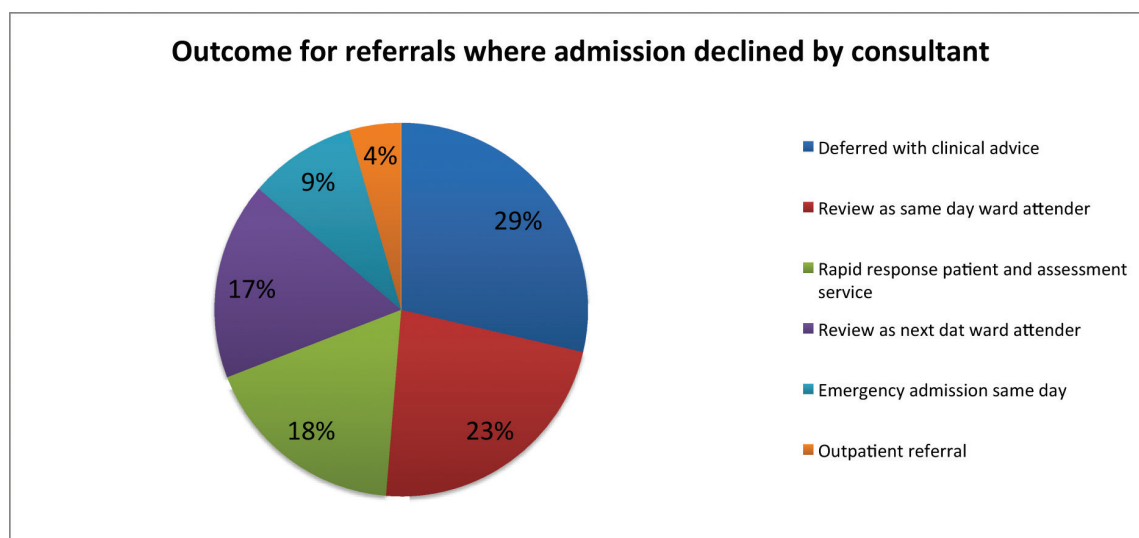


Figure 2.

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ED doctor (43% of all referrals declined vs. 25.9%, $p < 0.0001$).

Among the subset of patients admitted following an initial decision not to admit, 10.2% (207 patients) were admitted on the same day as referral with a cumulative admission rate of 16% (328 patients) within 7 days. In total 19.4% (394 patients) were admitted to hospital within the 30 days following consultant decision not to admit. It was more likely that a declined Emergency Department referral would go on to same-day admission than a GP referral (94 admitted/ total 604 declined vs. 112 admitted/1347 declined, $p < 0.0001$), however it was not more likely that a declined Emergency Department referral would progress to admission compared to a GP referral by 30 days (133/ 604 vs. 245/ 1347, $p = 0.1$). The median age of patients admitted was 78 years (range 16 -101 years).

Discussion

The introduction of an acute medicine consultant telephone triage service to screen referrals to the acute medical take resulted in admission avoidance for 28.5% of patients during its hours of operation. During the 12-month study period there was a 21% reduction in the number of admissions to the medical take. There were no other significant changes in local community or hospital services during this time to otherwise account for this reduction.

The introduction of the telephone triage service appears to have positively influenced referral-triage practice out of hours. The out of hours team achieved a reduction in admissions of 13.5% (approximately 530 patients) during the same period, producing the combined reduction of 21% in total admissions observed during the study. This is likely an underestimate; this assumes that the number of referrals to the medical take remained consistent from 2010/11 to 2011/12, when in reality we have seen a 10% increase in activity year on year. It is unclear what factors contributed to this; whether consultant-triage practice fostered a more aggressive attitude of admission avoidance in the AMU, whether consultant-triage raised the expected standard for referrals from ED staff or whether the nurses co-ordinating referrals simply gained greater confidence and experience with more time-in-post.

The success of our telephone triage service is primarily due to the perception of the advice given as credible and authoritative. The largest reduction in admissions during the study period was achieved in the GP referral group (42% of referrals resulting in a decision not to admit), which provided the majority of referrals to the service. We propose two main reasons for this. Firstly, referring GPs seem to appreciate the direct contact with a senior

decision maker, especially when the decision might be to support end of life care in the community. Approximately 25% of referrals that did not result in admission were managed with advice alone. Anecdotally we have received reports that GPs are in some instances deferring referrals during the out of hours period in order to discuss the case with the consultant-service during working hours. Secondly, the opinion of a consultant is perceived to provide more protection for those “defensively-minded” practitioners.

The likelihood of admission avoidance in the ED population was much lower, especially when allowing for the comparatively high proportion of same-day admissions despite consultant decision not to admit (16%). This is unsurprising given that the general ED patient population is likely to be more acutely unwell than the general GP population and that the “low hanging fruit” is likely to have already been managed following initial secondary care assessment; either discharged, referred into ambulatory care pathways or referred into other urgent out-patient services.

Prior to the introduction of the telephone triage service, all referrals to the acute medical take were handled by a senior AMU nurse (band 6), supported by the medical registrar on call or an acute medicine consultant where necessary. The fundamental handicap faced by the nurse co-ordinators is that they are unable to provide the same level of risk assessment or breadth of clinical advice when triaging referrals. This is relevant to referrals for common problems including chest pain, anaemia and deteriorating renal function. It is also likely that their advice is perceived as lacking authority, a notable problem when triaging referrals from senior medical staff. Furthermore nurses are historically more risk averse, unsurprising considering the comparative lack of legal protection for nursing staff and more stringent scope of nursing registration.

We believe that our consultant telephone triage service delivers additional benefits to the AMU, some of which are not captured by this study. The process of referral-screening improves consultant acuity on the AMU shop-floor; the telephone triage consultant for the morning session is typically programmed to cover the acute take in the afternoon, likewise the afternoon screening consultant covers the evening take. The screening consultants may defer admissions to the following day when appropriate to balance workload on busy shifts. The triage consultant also has the acumen and authority to initiate a range of initial investigations that could not feasibly be encompassed in care bundles or pathways or to arrange specialist reviews through the ward-attender/ ambulatory care system.

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None of this additional activity can be provided by a nurse practitioner.

The consultant telephone triage service at Ipswich Hospital is provided exclusively by acute medicine consultants. It is job-planned as programmed activity (PA) for direct clinical care, as a dedicated PA session during which time the consultant may also be performing administrative duties. Our department has 6 full-time equivalent consultants; each consultant completes 2 referrals sessions per week, during which time they will also consume a half-PA session of administrative work; each consultant is then only planned for a further 1.5 PA sessions of administration.

The consultant telephone triage service provided is cost-effective. The average length of stay for a medical patient in Ipswich Hospital during the study period was 6.9 days with an estimated bed cost of £144.50 per day (exclusive of the costs for additional investigations and treatment). The costs savings accrued through the avoidance of 1638 admissions by the service might be estimated in the order of £1.63 million pounds during the twelve-month study period. Additionally, the reduction in acute admissions during the study period returned our admissions rates to 2007-08 levels; this has allowed us to negotiate 100% tariff payment for each emergency admission.

Since April 2013 the operating hours of the telephone triage service have been extended from 9am until 7pm. There have been no plans to further extend the service beyond these times or to include

weekends. The vast majority of referrals to the acute medical take out-of-hours originate in the Emergency Department (ED). In our opinion it is unlikely that such expansion would be cost effective considering the expense of consultant time set against the lower reduction in admissions seen from ED (20% adjusting for subsequent admissions). Based on our data an acute medicine consultant might prevent an average of 1.8 admissions from the ED per 8 hour shift, although one would expect this figure to be far lower once factors such as the presenting patient population, the reduction in transport services and the reduction in community support services at these times are taken into account.

This study has limitations. We can provide no data regarding the total number of referrals received during the study periods and we report the total number of admissions, including admissions outside of the consultant screening service operational hours. We do not have outcome data for those referrals screened outside of the consultant service.

In conclusion, we believe that consultant telephone triage of referrals to the acute medical take is a cost-effective service that reduces unnecessary admissions to the AMU, improves co-ordination of the medical take and improves our interaction with local GP services, the Emergency Department and specialist colleagues.

Conflict of interest

Nothing to declare

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