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An observational study to identify factors associated with readmission and to evaluate the impact of pharmacist validation of discharge prescriptions on readmission rate

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Focal points

- To identify demographic and pharmaceutical factors associated with readmission and to determine whether pharmacist validation of discharge prescriptions impacted on readmission rate in a district general hospital.
- The average number of items prescribed at discharge and the average age were found to be significantly higher in patients who were readmitted than those who were not, and mandating pharmacist validation of discharge prescriptions was associated with a reduction of around one-fifth in the readmission rate.
- The study provides evidence of the patient groups it may be most appropriate for pharmacists to focus on in order to reduce readmissions

Introduction

Readmission is a growing problem for the National Health Service. In England the rate has increased by almost one-third over ten years, reaching 11.5% in 2011/12^[1]. In 2009 the Care Quality Commission reported that 81% of General Practitioners recorded discrepancies in discharge medication information “all” or “most of the time”^[2]. Whilst pharmacist validation of discharge prescriptions (TTOs) is routine in Calderdale and Huddersfield NHS Foundation Trust, it was previously prompted by the need for supply, and due to the successful implementation of one-stop dispensing the TTO validation rate was surprisingly low. The study aimed to identify factors associated with readmission, to quantify the effect of enforcing pharmacist validation of TTOs and to determine whether this impacted on the readmission rate.

Methods

Retrospective analysis of data from all adults discharged from Calderdale Royal Hospital’s Short Stay Unit between 30th September 2013 and 19th January 2014 (pharmacist validation of TTOs became mandatory during normal working hours from the mid-point). Data collected from TTOs included admission and discharge dates, demographics and pharmaceutical details (e.g. number of items prescribed, number of prescription changes, validation status). The primary outcome measure was 30-day readmission status; readmission interval was the secondary outcome measure. Ethical approval was not required.

Results

Two hundred eighty-three TTOs were completed during the baseline evaluation: 101 (35.7%) were validated by a pharmacist and 42 (14.8%) resulted in readmission. Two hundred ninety-six TTOs were completed during the intervention evaluation: 223 (75.3%) were validated by a pharmacist and 36 (12.2%) resulted in readmission. The average age of those readmitted (73.2) was seven and a half years older than those not readmitted (65.7) ($p < 0.01$, 95% CI for the difference 3.20-11.8); patients aged 65 or older were significantly more likely to be readmitted

(17.6%, 63/357) than younger patients (6.8%, 15/222) ($p < 0.01$). The number of prescription changes on the TTO was not found to differ significantly between those who were readmitted and those who were not; however, those readmitted were prescribed an average of two more items at discharge (10.8) than those who were not (8.4) ($p < 0.01$, 95% CI for the difference 0.989-3.90). The readmission behaviour of patients prescribed seven or less items at discharge ($n = 221$) was found to differ significantly ($p < 0.01$) from patients prescribed eight or more ($n = 264$).

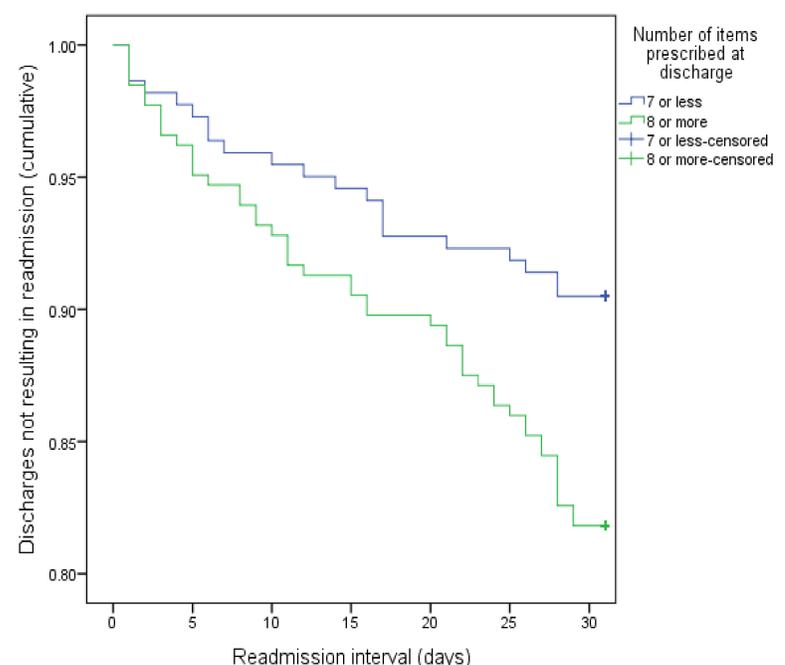


Figure 1: A comparison of readmission interval for those prescribed 7 or less items at discharge, and those prescribed 8 or more

Discussion

The results indicate where pharmacists may have the most impact on reducing readmissions; specifically patients over 65 years of age and those taking eight or more medicines. Further work is needed to determine whether readmission can be reduced in these groups by application of pharmaceutical interventions and to establish the long term benefits of focusing limited resources. Mandating pharmacist validation of TTOs in working hours was associated with a substantial increase in proportion validated and a notable reduction in readmission rate. It is acknowledged that the activity of the Trust’s Virtual Ward varied during the study, however there was not a pharmacist on the team at that time; further work will be carried out to determine the influence of this on the results observed.

References

1. Health & Social Care Information Centre Clinical Indicators Team. (2013). Hospital Episode Statistics, Emergency readmissions to hospital within 28 days of discharge -Financial year 2011/12.
2. Care Quality Commission. (2009). Managing patients medicines after discharge from hospital.