

Evaluating medication prescribing errors on discharge letters at a UK renal unit before and after implementation of interfaced electronic prescribing and discharge computer systems

Miss Amy Page¹, Mrs Maria Martinez¹, Dr Ryan Hamilton¹, Dr Jibran Khatri¹

¹*University Hospitals Of Leicester NHS Trust, Leicester, United Kingdom*

Introduction

Polypharmacy is common in patients with renal disease. This patient cohort is at greater risk of prescribing errors and consequent potential harm from medicines¹. The provision of poor-quality discharge information about medicines can lead to medication errors, associated adverse events and hospital readmissions². A baseline audit of 83 discharge letters in February 2019 showed 81% of discharge letters contained at least one prescribing error (average of 2.6 errors per letter), with 32% of errors driven by limitations of the PROTON computer system³ used to generate discharge letters.

The Trust strategic plan to implement electronic prescribing (MedChart) along with the interfaced Sunquest ICE discharge letter system was actuated on the renal wards in October 2019. These systems replaced paper in-patient drug charts and PROTON. A monthly evaluation of prescribing errors was conducted to determine whether the prevalence and severity of prescribing errors on discharge letters were reduced during this transition.

Methods

All discharge letters reviewed by pharmacists from four renal in-patient wards at a UK NHS Trust were collected from July to December 2019, for one-week each month. Prescribing errors identified by pharmacists were recorded and categorised by severity⁴ and the categorisation agreed by consensus by two senior renal pharmacists. This was an audit with a pre- and post-implementation study design and ethics approval was not required.

Results

A total of 186 discharge letters were reviewed (July 28, August 32, September 26, October 33, November 27, December 40). Monthly results prior to introduction of the interfaced electronic prescribing and discharge computer systems were comparable to baseline data (Figure 1). After implementation of MedChart and ICE, 46.5% of discharge letters contained at least one prescribing error (average of 0.8 errors per letter) compared to 96.2% of discharge letters (average of 3.0 errors per letter) the previous month. These improvements were sustained in the subsequent two months with 29.6% and 32.5% of discharge letters containing at least one error and an average of 0.4 errors per discharge letter both months. Post-implementation of MedChart and ICE, there was a reduction in all severity categories of error (Figure 2). Serious errors reduced from an average of 0.5 to 0.1 errors per letter and significant errors from an average of 1.7 to 0.4 errors per letter following implementation. These improvements were sustained in subsequent months.

This study is limited as no discharge letters written by more senior prescribers were encountered during the study period. This study also only included prescribing errors identified on letters reviewed by pharmacists. It is conceivable that discharge letters not screened by pharmacists will include errors that may not be detected.

Discussion

This study has shown a reduction in prescribing error rates following the introduction of interfaced electronic prescribing and discharge computer systems. Although reduced, serious and significant errors were encountered throughout the study potentially putting patients at risk of negative health outcomes. Our target is to be a zero harm organisation and we aim for this work to form the basis for further quality improvement methodology.