

Improving Accuracy of Discharge Summary Medication Lists – A comprehensive Electronic Medical Record Improvement Project

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Introduction

Discharge summaries (DSs) are an important communication tool to support continuity of care for patients upon discharge from hospital¹. However, medications errors on DSs are common².

At Eastern Health, a comprehensive uplift of the Electronic Medical Record (EMR) (Cerner®) was implemented for medical and pharmacy staff. This included updated medication workflows with the goal of improving documentation of home medications, increasing uptake of discharge reconciliation functions and reducing the rate of medication errors on DSs.

Aim

To determine if DSs post-intervention were associated with a lower rate of medication errors.

Method

Figure 1. Flowchart of method



Eastern Health

References:

1. Australian Commission on Safety and Quality in Health Care. National Guidelines for On-Screen Presentation of Discharge Summaries [internet]. 2017 September.
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3. Australian Commission on Safety and Quality in Health Care. A medicine incident classification system [internet]. Sydney NSW: ACSQHC. 2019.
4. Tong EY, Roman CP, Mitra B, Yip GS, Gibbs H, Newnham HH, Smit DV, Galbraith K, Dooley MJ. Reducing medication errors in hospital discharge summaries: a randomised controlled trial [Internet]. Med. J. Aust. 2017 Jan;206(1):36-9.
5. Elliott RA, Tan Y, Chan V, Richardson B, Tanner F, Dorevitch MI. Pharmacist-Physician Collaboration to Improve the Accuracy of Medication Information in Electronic Medical Discharge Summaries: Effectiveness and Sustainability [Internet]. Pharmacy (Basel). 2019 Dec 30;8(1):2.

Results

The mean number of DS medication errors was lower in the post-intervention group (2.98 vs 1.39, $p=0.006$, Figure 2). Fewer patients in the post-intervention group had one or more DS medication errors (59% vs 39%, $p=0.005$).

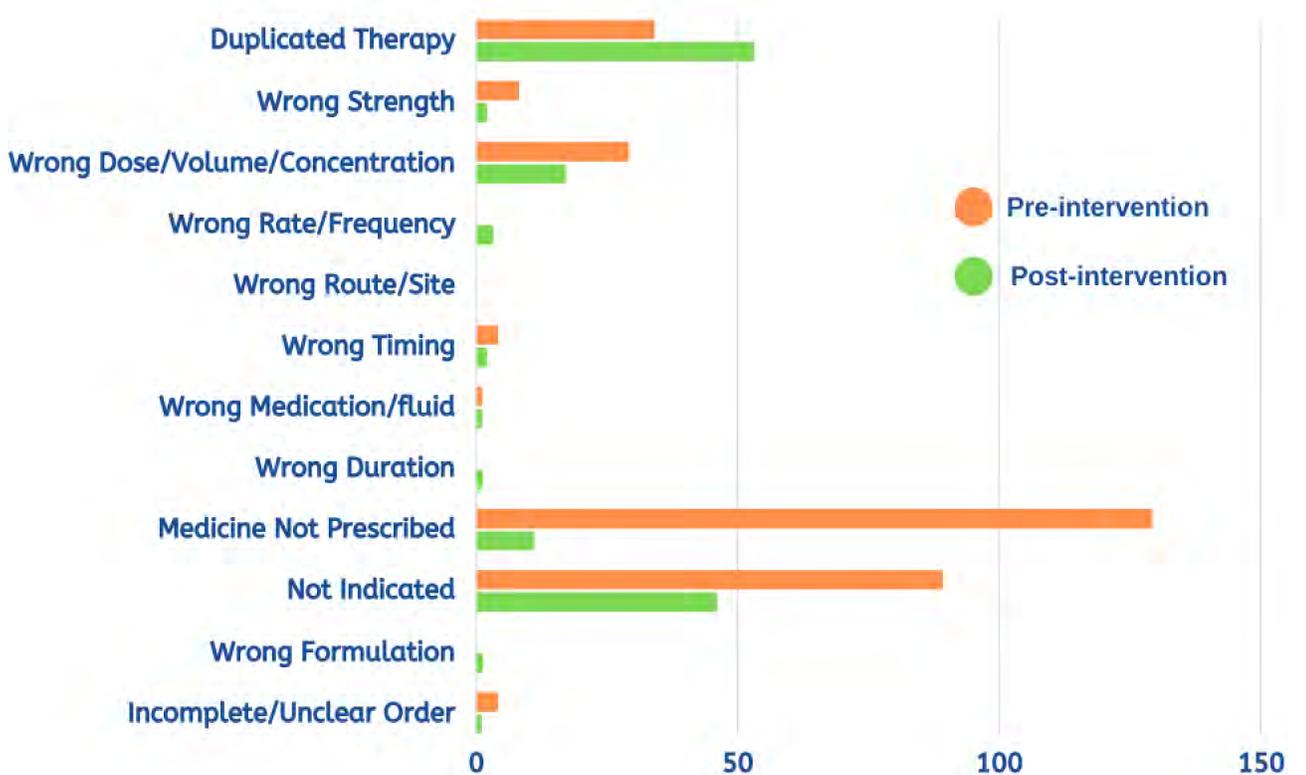
A total of 425 individual errors were identified (pre=291, post=134, figure 3). Omitted medications were less common in the post-intervention group (127 vs 11; refer to “Medicine Not Prescribed” on Figure 3).

Completion of EMR home medication documentation was higher in the post-intervention group (54% vs 69%, $p=0.005$). Pooled pre- and post-intervention data showed completion of discharge medication reconciliation was associated with a lower number of errors on the DS (1.42 vs 2.66, $p<0.005$).

Figure 2. Mean number of medication errors per DS



Figure 3. Frequency of error type comparison



Discussion

This study found that DS medication errors were less common after implementation of a comprehensive EMR improvement project. This was likely due to the increased documentation of home medications on admission, which was associated with a significant decrease in the number of omitted medications (refer to “Medicine Not Prescribed” on Figure 3). Despite the improvements observed, DS medication errors remain a significant issue and is an area requiring further improvement.

Limitations of this study included a small sample size and exclusion of patients who did not receive clinical pharmacy services.

Clinical pharmacy services at Eastern Health are prioritised towards complex patients using a criteria based tool. For this reason, the patients included in this study are likely to be more complex than the hospital population as a whole, limiting generalisability of the findings.

An advantage of the interventions evaluated in this study is that unlike previous improvement work^{4,5}, they require no ongoing resources once implemented. Cerner® based EMRs are commonly used throughout Australia and therefore these interventions may be suitable for broader adoption.

Conclusion

The EMR improvements were associated with fewer DS medication list errors.