The effect of a prescriber training intervention on the prevalence and types of prescribing errors generated by an electronic prescribing system

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MSc in Health Informatics 2016
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Abstract

Introduction

Electronic prescribing systems are being increasingly considered and implemented in healthcare settings internationally. These systems aim to improve the safety, quality, and efficiency of the medication use process. The literature available strongly advocates the importance of training during both the initial and ongoing use of electronic prescribing systems. Despite this however, there is a lack of evidence to demonstrate the effect that ongoing training has on the use and impact of these systems. In order to strengthen the case for resources for staff training for an electronic prescribing system, this dissertation aims to look at the effect of a training intervention on the prevalence and types of prescribing errors generated by an electronic prescribing system.

Study Design and Methods

Audit and feedback methodologies were used for this study. Prescription audits were carried out before and after the delivery of a classroom-based training intervention. The audits were used to measure and analyse the effect of the training intervention on prescribing errors generated by the electronic prescribing system in the genito urinary medicine and infectious diseases (GUIDE) outpatient clinic in St. James's Hospital, Dublin. A questionnaire and clinician observations were carried out with prescribers to gain some insight into their training history, their interaction with the electronic prescribing system, and to receive feedback from them. This information was used to inform the training intervention.

Results

During the pre-intervention prescription audit, 265 prescribing episodes were reviewed, and during the post-intervention audit, 268 prescribing episodes were reviewed. Pre-intervention the rate of error was found to be 73.6 errors per 100 patients. Following the training intervention, this error rate reduced to 25 errors per 100 patients. Statistically significantly more medications prescribed during the pre-intervention audit contained one or more errors when compared with the post-intervention audit (28.6% versus 9.2%, $p < 0.05$). The types of prescribing errors found before the training intervention were broadly similar to those found after the training intervention. However, the rate of certain errors was different following the intervention.

Conclusion

The prevalence of prescribing errors was significantly reduced following the delivery of a classroom-based training session. A large proportion of the errors found in both audits were system-related errors. The study contributes to bridging the gap in the literature that was identified due to a lack of studies giving evidence to support the need for training and education for electronic prescribing. However, certain limitations exist in this study which must be considered when interpreting the results and drawing conclusions. Nonetheless, the study supports the need for ongoing training of prescribers using an electronic prescribing system. It is hoped that the results of this study can be used to strengthen the case for resources for ongoing staff training for users of electronic prescribing systems, and to plan for the delivery of this training.