Safety Features and Alerts in Electronic Patient Medication Record Systems Used in Community Pharmacy in England: An Exploratory Study

Oluwagbemileke Ojeleye*, Anthony Averyb, Matthew Boyd

* Division of Social Research in Medicines and Health, School of Pharmacy, University of Nottingham, Nottingham NG7 2RD, UK
b Division of Primary Care, School of Community Health Sciences, University of Nottingham, Nottingham NG7 2UH, UK

Abstract

Safety features embedded in electronic Patient Medication Record (ePMR) systems alert users about clinical hazards and errors in prescribed medicines during order entry. To date there has been little research about how these systems, their safety features and alerts are used to support practice; and how they are included in work processes in community pharmacies in England, UK. This study aimed to explore stakeholders’ views and experiences regarding the safety features and alerts in ePMR systems; and how they might better support pharmacists and their team in practice.

Keywords:
Electronic patient medication record systems, safety features, medication alerts, order entry.

Introduction

Electronic Patient Medication Record (ePMR) systems used in community pharmacies in England have the potential to add value to patients’ clinical outcomes. The safety features embedded in them alert users during order entry about clinical hazards and errors in prescribed medicines such as drug interactions and contraindications. To date there has been little research about how these systems, their safety features, and alerts are used to support practice; and how they are included in work processes in community pharmacies in England. Furthermore, there has been speculation that safety features are often bypassed by system users. This study aimed to explore stakeholders’ views and experiences regarding the safety features and alerts in ePMR systems; and how they might better support pharmacists and their team in practice.

Methods

Semi-structured interviews were conducted with 30 stakeholders including practicing community pharmacists, superintendent pharmacists, dispensing staff, health policy makers, ePMR software vendors, knowledgebase creators and pharmacy legal experts between January and October 2012. Each interview lasted between 20-60 minutes. Interviews were audio-recorded and transcribed verbatim. Inductive, thematic analysis was of interview data was conducted using framework approach and the technique of constant comparison for identifying themes. The study was reviewed by the University of Nottingham, Medical School Research Ethics Committee and was given a favourable opinion.

Results

Analysis of themes about ePMR systems and alerts revealed mixed responses about what constitutes an ideal medication alert. One pharmacist described his ideal alert, “the colour combination is chosen well, it flashes up...it’s at eye level, not stuck somewhere in the corner of the screen...so it’s prominent” (P3). Another expressed discontent with pop-up alerts asking, “...how many pop-up alerts will it take before you stop reading them?” (V3).

When participants were asked about their perception of the provision of safety alerts in ePMR systems, one pharmacist said, “…some systems are very guilty of potentially drowning you with a lot of low grade alerts which...tend to stop you spotting the most serious ones” (SI1). They suggested that the clinical relevance of an alert in the context of the patient gives impetus to the acceptance or non-acceptance of alert recommendations. They also highlighted that mixing administrative and clinical information in alerts is unhelpful and usually lead to automatic cancellation or involuntary acknowledgement of alerts. Participants opined that more could be done to strengthen the pharmacy ‘safety net’ but opinions differ as to how. It was suggested that linking ePMR systems with other care records (to include allergy status and records of medications prescribed by other health practitioners or those initiated in secondary care) would enable pharmacists to conduct a holistic assessment of the potential impact patients medications might have on clinical outcomes.

Conclusion

These results suggest that the quality of safety alerts in current ePMR systems is far from ideal. More work needs to be done to investigate how safety features and alerts are included in the workflow of pharmacy and actions taken to make alerts more relevant to the patient context. Coupling ePMR systems with other clinical systems may add value to clinical outcomes.

Reference


Address for correspondence
*Oluwagbemileke Ojeleye - paxoo1@nottingham.ac.uk