COMMUNITY PHARMACY FOUNDATION

COMPLETED GRANT SYNOPSIS

Impact of Electronic Prescribing on Patient Safety and Pharmacy Workflow in Community Pharmacies

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Objectives
To gain insight into design features of e-prescribing that may pose a risk to safe delivery of patient care and its impact on community pharmacy workflow

Methods	
Design	• 30 Pharmacists and technicians were recruited from seven community pharmacies in Wisconsin using three pharmacy dispensing systems (PDX, QS/1, and Pharmaserv) • Data collection was performed in two phases • Phase 1 of data collection included direct observations and think aloud protocols to elicit verbalizations and the thought process of participants when processing five e-prescriptions. • Phase 2 of data collection involved the interviewing of four pharmacy staff members from each pharmacy • Think aloud protocols and pharmacy team meetings (in-depth group interviews with four staff members) were recorded and transcribed. • Transcripts were analyzed qualitatively using thematic analysis
Study endpoints	• Evaluate the design and performance of various e-prescribing systems • Characterize pharmacy workflow when processing e-prescription • Explore the impact of e-prescribing on safety and quality of the dispensing process • Identify best practice redesign recommendations for e-prescribing use

Results
• Positive aspects of e-prescribing systems design that facilitated pharmacy work included: legibility, ease of archiving, quick access to prescriptions, and consistency in format of e-prescriptions • Design weaknesses and potential technology hazards associated with e-prescribing systems were attributed to incompatibilities between pharmacy and prescriber computer systems • Incompatibility issues resulted in selection of wrong patient or drug (name, directions, dose, strength, formulation, package sizes) • E-prescribing did not always improve safety and quality of the dispensing process but in fact, created new kinds of technology hazards that could easily result in medication errors. Sometimes these errors were not caught in the pharmacy and led to patients receiving incorrect medications. • Pharmacists perceived that use of e-prescribing reduced their ability to recognize, interpret, and anticipate situations about individual patient care because technicians were mostly responsible for processing e-prescriptions • Input of community pharmacists was important to identify redesign recommendations for safer e-prescribing

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systems such as: provision of formal training with supplemental continuing education for all users and fine-tuning the information provided and accessed on e-prescriptions

Conclusion

The current design and use of e-prescribing in community pharmacy practice has created many challenges. This is primarily due to incompatibilities between pharmacy and prescribers' computer systems and a lack of understanding of pharmacy workflow and information needs by e-prescribing system designers. The findings suggest that e-prescribing technology can cause disruptions in pharmacy workflow and presents new threats to safe dispensing of medications. E-prescribing promised to improve safety and efficiency in quality of patient care in outpatient settings like community pharmacy; however, it has generated new kinds of errors and disruptions to pharmacy workflow. In order for e-prescribing to be successfully integrated into pharmacy practice, due consideration must be given to the impact of its design's on day-to-day dispensing activities.

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