

## ADVERSE EVENTS

### Pharmacy



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Medication error is considered one of the most common causes of adverse events in healthcare. Patient harm related to drug error is associated with substantial financial costs due to; prolonged treatment, hospital readmission and legal claims. The majority of medications follow a similar supply route from prescription to dispensing and then administration. The dispensing of a drug is an important stage in that process, but currently under-researched. Consequently, the focus of this research strand was the assessment of factors influencing the safe and accurate dispensing of medications by pharmacists (both hospital and community pharmacists).

#### Pharmacist selection error

Pharmacists perform an important role in supplying patients with medicines. They are the final check before a prescription is dispensed and they are responsible for insuring that the right medication reaches the right patient with the correct amount, dose and instructions for use. There are several potential factors which can impact the likelihood of an error being made during that process – the focus of the first project in this research strand was the impact of many similarly named products in close proximity to one another on pharmacy shelves. Using computer simulation to replicate the task of selecting a medicine from a pharmacy shelf, we examined the impact of proximity, time pressure and TALL MAN lettering on the accurate perception and selection of target medicine products. The results indicated that the presence of multiple similar drug packets in proximity to a target drug packet significantly increased the chance of error and the time taken to select a target. TALL MAN lettering had no effect on the results, indicating that such textual enhancements are not effective as a method of reducing selection error when multiple similar products are in close proximity.

#### Publications

Irwin, A., Mearns, K., Watson, M., & Urquhart, J. (2011) Pharmacist dispensing error: the effect of neighbourhood density and time pressure on accurate visual perception of drug names. *Proceedings of the Human Factors and Ergonomics Conference 2011*.

<http://pro.sagepub.com/content/55/1/1621.abstract>

Irwin, A., Mearns, K., Watson, M., & Urquhart, J. (*under review*) Pharmacist selection error: The effect of proximity, TALL MAN lettering and time pressure on accurate visual perception of drug names

### DATIX study

This project conducted an analysis of DATIX error reports detailing dispensing error, contributory factors and the resultant managerial response in NHS hospitals. In order to achieve this, incident reports collected from 23 Scottish hospitals over a 5 year period were analysed retrospectively. Reported incident types, contributory factors and managerial responses were categorised according to the event description, and the frequency of such factors calculated. The results indicated that the main incident types were incorrect drug, incorrect strength of drug and wrong quantity, or form, of the drug. The main contributory factors were reported as drug name similarity, busy wards / pharmacies. Inexperienced staff and patient centred issues also featured. Managerial responses to these errors took the form of meetings, increasing staff awareness or staff reminders on the importance of checking procedures.

#### Publications

Irwin, A., Ross, J., Seaton, J., & Mearns, K. (2011). Retrospective analysis of DATIX dispensing error reports from Scottish hospitals. *International Journal of Pharmacy Practice*, 19(6), 417 – 423.

<http://onlinelibrary.wiley.com/doi/10.1111/j.2042-7174.2011.00136.x/abstract>

### Aggressive patients and pharmacy practice

Aggression towards health care staff has been an important focus for research over the past decade. Patient aggression, both physical and verbal, can cause long term psychological effects, and even post traumatic stress disorder in affected staff members. Moreover, the threat of possible aggression or violence has been identified as a major stressor for some healthcare staff and a potential cause of career burnout. However, the majority of this research is based on secondary care, usually with a focus on nursing staff. Few articles have analysed patient aggression in primary care settings and fewer still have included staff working in community pharmacies. As a consequence, the primary aim of this project was to examine the impact of patients' aggression on community pharmacists, with a particular focus on the potential impact of an aggressive interaction on the likelihood of a dispensing error being made. This was a qualitative interview study.

#### Publications

Irwin, A., Laing, C., & Mearns, K. (*in press*). Dealing with aggressive methadone patients in community pharmacy: A critical incident study. *Research in Social and Administrative Pharmacy*.

Irwin, A., Laing, C., & Mearns, K. (*submitted*). The impact of patient aggression on community pharmacists: A critical incident study.

### **Pharmacist non-technical skills**

Non-technical skills refer to the human factors that may influence job performance, but which are distinct from the technical or practical skills required to complete a task. Non-technical skills are generally divided into two sub-groups: 1) cognitive skills (decision-making, situational awareness) and 2) social skills (teamwork, communication). Previous research has evaluated the non-technical skills of surgeons, anaesthetists and scrub nurses. However, despite the potential importance of non-technical skills in pharmacists, particularly in light of the relatively recent changes to the role of a pharmacist within a healthcare team, to date, there is little research directly examining the potential influence of such skills upon the effective functioning of a pharmacy. The aim of this study was to survey attitudes toward non-technical skills, with an emphasis on teamwork and communication, within both community and hospital pharmacy groups (all staff members will be surveyed – including pharmacy technicians, counter assistants etc). This will allow us to compare attitudes across environment (community or hospital), job role and other demographic factors (such as age and experience) in order to determine if attitudes vary across these groups.

### **Publications**

This project is currently running.