

Tackling dispensing errors

— learning from the Welsh risk programme

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Minimising dispensing errors is central to patient safety. “Unprevented dispensing incidents” (those detected and reported after the medicine has left the pharmacy) can cause serious patient harm but occur relatively infrequently at a rate of 16 to 18 per 100,000 items dispensed in UK hospitals (0.016–0.018 per cent).¹ “Prevented dispensing incidents” (those identified before medicine has left the pharmacy) occur more frequently at a rate of 0.94 to 2.1 per cent.² The review of dispensing incident data is essential in identifying deficiencies in the dispensing process and strategies for minimising incidents.

In 2005, the All Wales Dispensary Project Group was awarded funding from the Welsh Assembly Government to investigate the number, type and causes of dispensing incidents within NHS hospitals in Wales. The study involved three stages (error data collection, near-miss data collection and a critical incident study) running until the end of last year.

Results

A total of 1,005 unprevented incidents was reported to the scheme by 20 hospitals over the

first year of the study, at a rate of 16 per 100,000 items dispensed. Of these incidents the most common errors were dispensing the wrong strength of a drug (24 per cent), the wrong drug (17 per cent) and the wrong form (13 per cent). The most common drugs involved in unprevented incidents were insulin, ACE inhibitors, morphine sulphate and nifedipine.

Analysis of 291 prevented incidents reported by five hospitals over three months, showed that these incidents occur more frequently, at a rate of 131 incidents per 100,000 items dispensed. The most common errors were labelling medicines with the wrong warnings or directions (34 per cent), the wrong drug details (8 per cent) and the wrong strength (4 per cent). The most common drugs involved in prevented incidents were prednisolone, paracetamol, ibuprofen, co-codamol and insulin.

Automated dispensing systems were associated with fewer prevented dispensing incidents. The most common errors reported for automated systems were labelling errors (71 per cent), and combined labelling and drug errors (25 per cent).

Prevention

The causes of dispensing incidents were found to involve a complex mix of organisational deficiencies, working conditions and personal factors. High workload, low staffing levels and inexperienced staff were factors perceived by employees to contribute to incidents. Assessment of pharmacy workload and staffing requirements facilitates workforce planning and help

minimise dispensing incidents by ensuring a safe, permissible workload. Various strategies have been suggested for minimising interruptions cited as contributing to dispensing incidents. These include the use of receptionists to deal with telephone calls, removal of telephones from the dispensary (to a pharmacy helpdesk) and installation of prescription tracking devices to allow ward staff to determine whether a prescription has been dispensed. The use of tinted glass at the pharmacy reception hatch may reduce incidents caused by staff being distracted by patients and nurses.

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Ambiguously written prescriptions and lack of knowledge on behalf of the dispenser were also identified as contributing to incidents. These factors could be addressed by standardising the format of prescriptions, developing prescribing standards, developing prescription endorsing standards for pharmacists, computerised physician order entry and electronic prescribing. Staff knowledge and skills could be improved by standardising training of dispensary staff, competency assessment and staff validation.

Possible strategies for minimising drug selection errors include separating look-alike sound-alike drugs on shelves, highlighting problem drug names on shelf labels and educating staff. Printing the wrong directions on the label is a frequent problem for drugs with unusual or complicated dosage regimens such as prednisolone. Strategies for minimising such errors include the use of standardised computer codes, and programming alerts into the pharmacy computer system. Computer selection errors can be addressed by careful design of software — for example, using different font colours or text styles to differentiate the strengths or formulations of a drug.

Further work is now being undertaken by the project group to measure the effect of dispensary workload on dispensing incidents, evaluate the impact of automated dispensing and develop new methods for training core competencies in dispensing.

There is growing awareness of the benefits of targeting high risk processes and standardising systems to maximise patient safety. However, managing risks associated with dispensing and preventing incidents is dependent on the existence of an open reporting culture within pharmacy.

References

- 1 Spencer MG, Smith AP. A multicentre study of dispensing in British hospitals. *International Journal of Pharmacy Practice* 1993;2:142–6.
- 2 Beso A, Franklin BD, Barber N. The frequency and potential causes of dispensing errors in hospital pharmacy. *Pharmacy World and Science* 2005;27:182–90.

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