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Improving the accuracy of drug prescriptions

Joanne Carling, Gillian Janes, Dave Murray (2017) *The Ergonomist* Jan-Feb, pp25-26

Preventing harm by ensuring medications are prescribed accurately for patients on admission to hospital is a patient safety priority and one that should be achievable. **Joanne Carling** and colleagues discuss when and why problems sometimes occur.

Medication errors pose a significant threat to patient safety in England and Wales, with over 130,000 medication incidents in the NHS reported annually. Patients are often unable to provide an accurate drug history on hospital admission due to the nature of their illness. This, combined with limited information available for the admitting doctor, can at times result in inaccurate prescribing.

Medication reconciliation (MR) is a process that ensures medication prescribed for adults in hospital corresponds to that which they were taking before admission. It aims to avoid errors such as unintended omissions, over prescribing, dosing errors or adverse drug reactions. Inadequate MR on admission is commonly identified as a major cause of patient morbidity, with poor access to patients' regular medications lists cited as a barrier to care. Effective MR reduced adverse drug events caused by prescription changes on admission by 43% in one US study.

There are two levels to the MR process. Level One is completed by the admitting doctor and requires taking an accurate drug history. Primary sources of this information include accessing the patients' own medication list or drug boxes, GP letters, or the GP's electronic Summary Care Record (eSCR) using an NHS Smartcard. Over 80% of the GPs in the local area have uploaded data to the eSCR making it an ideal, up to date source of information containing key clinical information on medicines, allergies and sensitivities. This is especially useful as patients are often unable to offer an accurate drug history that includes all the details about drug dose and frequency. The second level of MR is carried out by pharmacists who check and verify the accuracy of the drug history against the current prescription chart, identifying any discrepancies which are then resolved and documented.

When conducted as intended MR is a sound patient-centred, inter-professional process that supports effective prescribing. Evidence suggests that Level One MR is undertaken inadequately both locally and nationally, despite substantial attempts to improve this and policies and guidelines being in place. Locally, the limited use of NHS Smartcards and access to the eSCR by junior doctors was frequently cited as the key obstacle to effective MR. However, it felt pertinent that a broader human factors approach was required to explore why the Level One MR process was inadequately completed rather than focus just on junior doctors and their limited use of Smartcards.

The System Engineering Initiative for Patient Safety (SEIPS) model was used locally to analyse the barriers to effective MR. This model clearly recognises the interrelated nature of the five major aspects of work systems: people, tasks, tools and technologies, physical environment and organisational conditions. Adopting this broader systems approach identified the following fundamental issues:

People

- There was limited engagement MR by junior doctors who tended to rely upon pharmacists to resolve prescribing issues.
- Engaging in the MR process was not an explicit learning outcome for junior doctors.

Tasks

- Junior doctors received limited training on how to use the smartcard and eSCR, experienced difficulties finding the information required and were therefore reluctant to use this system.

Tools & Technology:

- The nature and placement of computer icons used to identify the eSCR system differed across the organisation, making easy identification and navigation more challenging.
- The organisation provided identification badge holders that can only hold a single ID card, meaning the Smartcard was frequently misplaced.

Physical Environment:

- Some wards did not have functioning Smartcard readers
- Smartcard readers differed in appearance so were not easily recognisable or user friendly.
- Access was limited to just a few computers that were in constant use for other clinical purposes.

Organisation:

- Acquisition of the Smartcard was complicated and time-consuming.

This analysis of the barriers to MR and discussion with stakeholders, including education and nursing directors, resulted in the following initial actions: several

- More training provided on MR, Smartcard use and eSCR navigation in the junior doctors' generic skills programme.
- Engagement in the MR process included as a learning outcome as part of junior doctors' career progression.
- Director of Nursing/Senior Nurses to promote and support MR on their wards by encouraging use of Smartcards and ensuring Smartcard readers are available.
- Purchase of ID badge holders that can hold two ID cards.
- Standardisation of the tools and technology required for MR across all wards to enhance usability.
- Provision of more time and opportunities for staff to acquire Smartcards.

Conclusion

Using a systems approach allowed for broader analysis and identification of barriers to effective MR which were otherwise unknown. The findings revealed how work system

elements interact and the importance of acknowledging this when trying to resolve a problem, rather than focus on the behaviour of individuals. Dissemination of the findings also helped the organisation to appreciate the value of human factors in understanding human performance and enhancing safety. This project should go some way to understanding and enhancing the effectiveness of medication reconciliation in the UK.

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