

Errors in electronic prescribing systems

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I thank the authors for their insight into computerised prescribing in hospitals.¹ System-related prescribing errors present a conundrum. While the error is made by the clinician ordering the prescription, the user interface, layout design and workflow processes of electronic prescribing systems significantly impact upon the rate of errors. This has been illustrated by different error rates observed with different systems.^{2,3}

Other problems can also cause clinical system-related prescribing errors:

1. Certain analgesics and antibiotics have two Pharmaceutical Benefits Scheme (PBS) item numbers listed with the same prescription drug descriptor. One is for use by medical or nurse practitioners, the other is for dental practitioners. Some systems compel the prescriber to choose one of the two similar prescribing options without differentiating which PBS number is for which prescriber.
2. Most guidelines recommend antibiotic doses to be taken with a predetermined interval (e.g. 6-hourly). However, antibiotic listings in some electronic prescribing systems are preset as number of times throughout the day (e.g. 4 times a day). While it does not significantly affect how oral medicines are taken, parenteral delivery timing under the National Inpatient Medication Chart system will be different for six-hourly versus four times a day. There are significant ramifications involving medicines that build up toxicity or require blood monitoring at a predetermined time of the day.
3. Electronic prescribing systems with decision-support modules incorporating accepted drug guidelines can assist prescribers to determine treatment without separately looking up the latest recommended resources. However, over-reliance by clinicians on software technicians for timely updates of these tools to incorporate latest guidelines opens up a minefield around the onus of responsibility for best-practice prescribing consistent with prevailing recommendations.

Electronic prescribing systems have great potential for reducing prescribing errors. However new errors, predominantly system-related prescribing errors, arising from system interface and content governance hinder efforts toward the goal of zero medication errors.

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Melissa Baysari and Magdalena Raban, authors of the article, comment:



These examples are highly relevant and illustrate the complexities associated with implementation of electronic prescribing systems. The last two examples also highlight the significant effort required to set up and maintain a safe electronic prescribing system. Ensuring that options available to prescribers for selection, including order sentences, reflect safe prescribing practice is not a trivial task. Neither is ensuring all guidelines, formulary items and decision-support functions remain up-to-date.

We disagree that a goal of 'zero medication errors' can be achieved. We join other researchers, clinicians and patient safety experts in advocating for a shift of focus away from zero errors and harm towards active risk management and organisational resilience.^{1,2} This will facilitate a reduction in medication errors but we cannot anticipate, detect and prevent every medication error. Human behaviour (and healthcare delivery) is too complex and unpredictable. We need electronic systems to support dynamic and flexible work in health care.

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