Medication errors in hospitals: what can be done?

Clifford F Hughes

An integrated comprehensive approach to medication error is a national imperative

Medication errors are among the most common incidents reported in public hospitals.[1,2] This is not surprising, given that every admitted patient receives some medication. If medication is one of the hallmarks of treatment in our institutions, it, more than any part of our practice, should be made safer and, wherever possible, error-proof.

In New South Wales public hospitals, the Incident Information Management System (IIMS) report for 2005–2006[3] included 17 367 medication incidents in which medication error was the primary cause of harm. In another 968 incidents, medication error was a secondary cause. Most incidents were notified from the services of general medicine or pharmacy, but all clinical services, including surgery, reported medication errors.

The severity of most reported medication errors is minor. In the IIMS report, less than 0.3% of notified medication incidents in NSW were given a severity assessment code of 1 (SAC 1), compared with 0.8% SAC 2, 25.9% SAC 3 and 56.2% SAC 4 (SAC 1 = severe harm; SAC 4 = trivial or no harm).

In this issue of the Journal, Nichols and colleagues (*page 276*)[4] examine medication errors and highlight the types and context of errors at Fremantle Hospital, Western Australia. Although the study was based on a small sample, its principal strength was that it examined not only the incident but also the environment, the team, the tasks being undertaken, and the individual circumstances of those "responsible" for the error.

The study cohort was selected by pharmacists during regular ward rounds over a 6-month period. Fremantle Hospital participates in the Australian Incident Monitoring System and has patient safety committees.

The Fremantle Hospital study did not give error rates, but the IIMS data[3] suggest that the problem of medication errors is not small. We need to reinvigorate attempts to provide secure prescribing environments. Practitioners must be able to concentrate, without distraction, on the patients for whom they are prescribing. They must have adequate information on the indications for prescription, potential complications, contraindications and drug interactions of the prescribed medications.

Nichols et al reported that 7/26 members of staff (27%) indicated there was lack of guidance from senior colleagues when they were prescribing unfamiliar medications, 8/26 (31%) were dealing with an unfamiliar patient when the error was made, and 5/26 (19%) were working in an unfamiliar ward! Hastily scribbled notes during a rushed ward round from a senior consultant who presupposes competencies to a newly posted intern are not a prescription for safety, but a recipe for error!

Root-cause analysis data from NSW[5] have shown that major factors leading to severe incidents (SAC 1) include deficiencies in policy (25%), communication (25%) and knowledge/competency (18%). These data are consistent with the study of Nichols et al, in which poorly defined policies or inadequate drug information were found to be a factor in 23% of medication errors. In the Fremantle Hospital experience, communication within the team was a factor in medication errors in 31% of incidents, and communication with others was also a factor in 31%.

Various initiatives that may lessen the risk of medication errors in Australian hospitals require more evaluation. The National Inpatient Medication Chart,[6] commissioned by the Australian Council on Safety and Quality in Health Care, is an important advance. All junior staff now know where to prescribe, how to look for and how to document medication. This evidence-based best practice initiative, led by the Safe Medication Practice Unit of Queensland Health, addresses key problems, such as the prescribing and dispensing of warfarin. It is important that the national initiative not be undermined as individual hospitals, units or clinicians make local modifications. Rather, local lessons must contribute to the national debate and the standard document should be improved by consensus. Standardised formats for multiple-drug protocols must also be developed.

Many hospitals do not yet use electronic prescribing. The drug advice available to junior staff often consists of a dilapidated, torn and hard-to-find MIMS publication that is often many months out of date. Although MIMS is now available online in all public hospitals (except in South Australia), and NSW Health has a state licence for personal digital assistants (PDAs) for all staff, neither technology (online or PDA) is fully utilised in the public sector. Other electronic sources of drug information available include the "Therapeutic guidelines" series (http://www.tg.com.au/index.php?sectionid=97), the *Australian medicines handbook* (http://www.amh.net.au) and the Clinical Information Access Program (http://www.ciap.health.nsw.gov.au). Whatever the technology or software used, it is essential that teams develop, with hospital pharmacists, relevant orientation procedures, including information on medication usage, for new members of the team.

Medication reconciliation[7] (the formal process of obtaining a complete and accurate list of each patient's current home medications and comparing the clinician's admission, transfer or discharge orders with that list) and pharmaceutical review[8] (the systematic appraisal of all aspects of a patient's medication management to optimise patient outcomes) provide opportunities for minimising "slips and lapses", but are not yet seriously "on the radar". Multidisciplinary hospital drug committees could provide local champions for such programs, collect and evaluate data and develop the evidence base.

These issues demand systematic attention from hospitals, administrators and clinicians. The NSW Therapeutic Advisory Group and the Clinical Excellence Commission (NSW) have adapted a Medication Safety Self-Assessment (MSSA) tool developed by the Institute for Safe Medication Practices (ISMP) in Canada and the United States for use in the Australian health care environment.[9] A similar antithrombotics tool[10] addresses the critical issues around the narrow therapeutic index of antithrombotic medicines. These tools, which are complementary to the *Indicators for quality use of medicines in Australian hospitals*,[11] allow hospitals to assess their own performance and provide national

information about safe medication use. Their effectiveness in reducing medication harm is yet to be proven in Australia.

The ISMP MSSA tool was evaluated in the US[12] in 2002 and again in 2004. Collaborating members did demonstrate continuing improvement in key elements of medication safety (Cohen MR, Vaida AJ. ISMP Medication Safety Self-Assessment — Australian version: experience in the United States. International video conference launch of MSSA. Sydney: ISMP, Feb 2007 [unpublished]).

These and other tools could enable all clinicians to measure medication practice, monitor new protocols and minimise the types of slips, lapses and incidents reported in the study by Nichols and colleagues. An integrated comprehensive approach to medication error is a national imperative. We should not be afraid to compare and contrast systems, as long as designs allow an interface between core national and state platforms.

Nichols and colleagues have given the problems of medication error human faces — both staff and patient. Only serious system-wide measurement and evidence-based change can return smiles to those faces!

Author details

Clifford F Hughes, AO, FRACS, FACS, FACC, Chief Executive Officer
Clinical Excellence Commission, Sydney, NSW.
Correspondence: Clifford.Hughes@cec.health.nsw.gov.au

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