



Title	Medication incidents related to technology in a university-affiliated general hospital in 2006-2010
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Introduction: The primary goal of reducing medication errors is to eliminate errors that reach the patient. We aimed to study the pattern of interception of medication errors along the medication use process.

Methods: We analysed reported medication incidents in a teaching hospital in 2006 to 2010. We used the 'Swiss Cheese Theory' to describe the interception of errors.

Results: Our analysis included 1268 in-patient and 303 out-patient errors. Among in-patient errors, 53.4% were prescribing, 29% were drug administration and 17.6% were dispensing errors. Of the in-patient errors, 26.8%, 4.9% and 2.4% related to drug administration, prescribing and dispensing, respectively, were not intercepted. Pharmacists intercepted 85.4% of the prescribing errors. Nurses detected 83% and 5% of the dispensing and prescribing errors respectively. Among out-patient errors, 91.4% were prescribing, 4.9% were drug administration, and 3.6% were dispensing errors. Of the out-patient errors, 4.6% and 3.0% related to drug administration and dispensing, respectively, reached the patients. Pharmacists intercepted 89.5% of the prescribing errors.

Conclusions: Having a preventive measure at each stage of the medication use process helps to prevent medication errors. However, many drug administration errors were not prevented and reached patients. Therefore, more interventions for preventing drug administration errors are warranted.

Medication incidents related to technology in a university-affiliated general hospital in 2006-2010

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Introduction: Technology often helps to reduce medication errors. The objective of this study was to assess medication errors in relation to technology used in the prescription or administration of medications.

Methods: Medication incidents reported during 2006–2010 in a university-affiliated general hospital were analysed. Computer-aided prescribing and medication label generation, 2-D bar-coded patient identification, parenteral drug administration devices were considered technology-related interventions.

Results: A total of 1538 medication incidents were reported; 17.3% of all incidents were technology-related, of which the majority were due to user errors (17%) rather than device errors (0.3%). 75.6% of the technology-related errors were prescribing errors, followed by drug administration (14.3%), dispensing (8.3%) and others (1.3%). 10.3% of all incidents were linked to computerised medication order entry, 4.2% to 2-D bar-coded patient identity, 1.3% to infusion pump devices and 1.2% to computer-aided medication label generation. The leading causes for technology-related errors included incorrect computer entry (49.3%), failure to comply with policies and procedures (39.4%), similar drug name (6.1%), device fault (1.5%), and lack of supervision (1.1%). 12% of the technology-related incidents were detected after the drug had been administered.

Conclusion: Technology may reduce medication errors but can also introduce new errors, which are mainly due to user mistakes. Therefore, when using technology-related interventions, careful and continuous monitoring is still needed in order to eliminate medication errors.