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Technology-related medication errors – incidence, nature and causes in a tertiary hospital

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Aims of this study
Analysis of technology-related medication errors

Methods
Definitions

Technology-related errors – Any error that involved technologies used in hospitals to reduce medication errors
User related errors – Any technology-related error associated with a human failure
Device related errors – Any technology-related error that occurred due to a technical defect of a device

Study process
• 1538 incidents were reported during the period of analysis (2006 – 2010)
• All incidents were reviewed by a pharmacist and technology-related incidents were identified as follows

Pathway for incident analysis

Results
Incidence of technology-related errors
17.3% of all incidents were ‘technology-related’ and most were due to ‘user errors’

Types of technology-related errors
Most technology-related errors were prescribing errors followed by drug administration and dispensing errors

Technologies involved in technology-related errors
Most technology-related errors were related to computerised medication order entry

Severity of technology-related errors
12% of technology-related errors reached the patient and 6.4% caused some form of harm to the patient

Most common underlying causes and their % contribution to the occurrence of technology-related errors

Technologies involved

Conclusions
- Technologies have a potential to introduce new errors
- Most technology-related errors are related to user errors than technical defects
- Common underlying causes were incorrect computer entry and staff not complying to policies and procedures
- When using technological interventions, systems need to be improved in a way that errors cannot happen
- Staff training and continuous monitoring are also important to minimise technology-related errors