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Electronic screening of inpatients' medical records: a clinical decision support for physicians and clinical pharmacists?

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Summary

Questions under study: About 5% of Swiss inpatients suffer from medication errors; many of them are caused by inappropriate prescriptions. We hypothesised that an electronic screening tool could identify inpatients carrying the highest risks of drug related problems. Such a tool may facilitate the daily work of physicians and pharmacists.

Methods: 25 different queries were programmed to identify potentially inappropriate prescribing in the electronic medical records. During this prospective observational study, patients identified by the screening tool because of a potential drug related problem or a high risk condition were compared to those visited by the clinical Pharmacist during the medical round and for whom the clinical Pharmacist suggested or not a treatment modification. The sensitivity and specificity of the screening tool and the positive predictive value of each individual query were calculated.

Results: 374 patients were included between September and November 2008. The screening tool with 25 queries had a sensitivity of 88.7% and a specificity of 58.8%.

Discussion: The developed electronic screening tool is a trade-off between pharmacotherapy issues, the feasibility of programming and the availability of the data in the electronic medical record. It allows an efficient identification of patients at risk of drug-related problems and therefore helps to prioritise the medication review. Our analysis showed that while some queries identifying high risk patients or conditions need a manual check, others may be sent as automatically safety alerts to the prescribers.

Key words: adverse drug events, automatic data processing, decision support systems, medical record systems, pharmacists, pharmacy services