

Electronic decision support tool reduces the risk of overmedication

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As the population ages, the prevalence of chronic disease increases. As a result, more drugs are prescribed. Around 25% of the population aged 65+ are affected by so-called "polypharmacy," i.e., they regularly take at least five drugs. This results in an increased risk for drug interactions and adverse drug events. The international, EU-funded PRIMA-e-DS

project led by Andreas Sönnichsen, head of MedUni Vienna's Department of General Practice and Family Medicine at the Center for Public Health, developed and tested an electronic tool on 4,000 patients that serves as a decision support to prevent inappropriate and dangerous polypharmacy. The main finding of the study, which has now been published in the *British Medical Journal*: Inappropriate drugs can easily be avoided without any detriment to patients.

PRIMA-eDS stands for Polypharmacy: Reduction of Inappropriate Medication and Adverse [drug](#) events in older populations by electronic Decision Support. Research teams from five countries, namely Finland, the U.K., Germany, Italy and Austria, participated in the EU-funded study together with MedUni Vienna's Center for Public Health and the Paracelsus Private Medical University in Salzburg (PMU).

Electronic decision support for general practitioners

"Previous studies have shown that between 5 and 10% of all emergency hospital admissions of elderly patients are attributable to medication," says Sönnichsen. "The standard, regular and meticulous review of medication by a consultant or GP is virtually impossible, because they neither have the time nor the comprehensive pharmacological knowledge. We therefore set ourselves the goal of developing a simple electronic [decision support tool](#) for GPs that would identify instances of dangerous polypharmacy and suggest that these drugs be discontinued or replaced."

This idea has now been put into practice over the last seven years in the context of the PRIMA-eDS project. The tool feeds from several pharmacological databases and combines them with individual patient data (diagnoses, kidney function, etc.). "The advantage of the computer is that, within a matter of seconds, it can display all known interactions, dosing errors and individual intolerances, even where a number of drugs

are being administered simultaneously. The important thing is that the tool is fed a complete set of data."

For the clinical study that has now been published in the *British Medical Journal*, the electronic program developed under Sönnichsen's direction was tested in a randomized controlled trial including around 4,000 patients over a two-year period.

Sönnichsen says, "We demonstrated that the tool reduces the number of prescribed drugs by an average of approximately 0.5 drugs per patient. There is also a trend towards a reduction in hospital admissions. However, this result is only significant if the participating doctors followed the study protocol exactly." Further analyses will evaluate whether cost savings can be achieved through use of the tool.

More information: Anja Rieckert et al. Use of an electronic decision support tool to reduce polypharmacy in elderly people with chronic diseases: cluster randomized controlled trial, *BMJ* (2020). [DOI: 10.1136/bmj.m1822](https://doi.org/10.1136/bmj.m1822)

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