

# Evaluation of drug-related problems and subsequent clinical pharmacists' interventions at a Swiss university hospital

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## Abstract

**What is known and objective:** The evaluation of clinical pharmacy services is essential for their further development and establishment. We analysed drug-related problems (DRPs) and subsequent clinical pharmacists' interventions (PIs) at a Swiss university hospital.

**Method:** We conducted a retrospective analysis of DRPs and subsequent PIs that were identified and implemented during interdisciplinary ward rounds in internal medicine at the University Hospital Basel, Switzerland, between 2015 and 2017. We estimated the potential clinical and economic impact of PIs using a validated evaluation tool (CLEO<sub>de</sub>).

**Results and discussion:** Based on medication reviews of 5441 patients, clinical pharmacists identified 5024 DRPs, of which 2892 DRPs (57.6%) were followed by a PI that was directly accepted and implemented by the physician in charge and included in the present analysis. The leading cause and type of PIs were inappropriate dose and dose adjustment, respectively. Overall, 97.8% of DRPs were followed by PIs with an expected clinical benefit for the patients (major: 11.1%; moderate: 27.6%; minor: 59.1%). The drugs most often involved in PIs of major clinical impact were antithrombotics, acid blockers, and cardiovascular drugs. With regard to the economic impact, 40.7% of DRPs implied PIs resulting in an increase of immediate therapy costs, whereas 39.3% implied PIs resulting in a decrease of immediate therapy costs. The remaining PIs were cost-neutral.

**What is new and conclusion:** This study emphasises that clinical pharmacists may help improve the effectiveness and safety of pharmacotherapy on acute care medical wards.

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