

Reducing inappropriate drug use in elderly patients by use of clinical decision support in the community pharmacy: a mixed-methods evaluation of determinants of drug therapy changes

Linda Mulder Wildemors, Mette Heringa, Annemieke Floor Schreudering, Paul Jansen, Petra Hoogland, Henk-Frans Kwint.

Background Older people are prone to drug related harm. The Dutch Expertisecentre PHarmacotherapy in Old persons (Ephor) has published evidence-based guidelines about the most appropriate drug per therapeutic class for vulnerable elderly. Clinical decision support systems (CDSSs) in community pharmacy can be a tool to implement these guidelines in order to improve appropriate prescribing in this population.

Purpose This study aims to investigate determinants of drug therapy changes based on CDSS alerts aimed at reducing inappropriate drug use in elderly patients.

Method Five clinical decision rules based on the Ephor guidelines were incorporated in a web-based CDSS in 31 community pharmacies (franchisees of Service Apotheek) in February–April 2017: alprazolam for anxiety; amitriptyline for depression; barnidipine in hypertension; duloxetine, fluoxetine or trazodone in depression; quetiapine or olanzapine at delirium or dementia. The CDSS generated alerts for patients >70 years in case of a prescription for one of the eight drugs. A descriptive analysis was performed based on the registered alert management and medication dispensing histories. Potential determinants of persistent drug therapy changes (changes detectable in the medication dispensing history up to six months after the alert) were analysed by logistic regression analysis. Ten participating community pharmacists were interviewed about the barriers and facilitators for alert management for drug therapy change. An inductive thematic analysis of the transcripts was performed.

Findings The pharmacists registered the management of 1810 of the 2589 generated alerts and 158 (8.7%) alerts resulted in a persistent drug therapy change. A logistic regression analysis showed that the drug triggering the alert and the type of prescription (first time versus repeat) were significantly associated with persistent drug therapy changes. No association was found for age, gender and number of medicines in use and recent clinical medication review. Analysis of the interviews showed ten aspects, which according to the pharmacists were associated with alert management leading to a drug therapy change. These aspects were clustered in organisational, professional and patient related aspects.

Conclusion In community pharmacy, CDSS alerts to reduce inappropriate drug use in patients >70 years resulted in 8.7% of the cases in a persistent drug therapy change. The drug leading to the alert and the type of prescription (first time) were associated with persistent drug therapy changes. According to community pharmacists, organisational, professional and patient-related aspects influenced their alert management. (Sanne Verdoorn and Marcel Bouvie, SIR Institute for Pharmacy Practice and Policy, Leiden, and. Universiteit Utrecht, Utrecht, The Netherlands) also contributed to this abstract.