Comprehensive medication reviews for elderly patients: Findings and recommendations to physicians

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Abstract

Objectives: To assess drug-related problems (DRPs) documented by specially trained community pharmacists during the Finnish comprehensive medication review (CMR) procedure and to describe the resulting interventions for home-dwelling and assisted-living primary care patients 65 years or older.

Methods: Retrospective analysis of applicable written CMR case reports for primary care patients 65 years or older by 26 community pharmacists attending a 1.5-year CMR accreditation training (174 patients recruited; 121 included in the analysis). The main outcome measures were DRPs and physicians' acceptance of pharmacists' recommendations.

Results: The pharmacists reported a total of 785 DRPs (average of 6.5/patient). DRPs were more common among home-dwelling patients (7.2) than those in the assisted-living setting (5.5; $P = 0.014$) but were similar in nature. Inappropriate drug choices were the most common DRPs (17% of DRPs), involving most often hypnotics and sedatives. Also, indications with no treatment were common (16%), particularly those associated with cardiovascular diseases and osteoporosis. Pharmacists made 649 recommendations, 55% (n = 360) of which were accepted by physicians without revision. In 51% of DRPs (n = 403), CMRs resulted in change of drug therapy; stopping a drug was the most common change.

Conclusion: Specially trained pharmacists were able to identify DRPs among elderly primary care patients by using a CMR procedure, and more than one-half of the identified DRPs led to medication changes. The pharmacists' special knowledge of geriatric pharmacotherapy and access to clinical patient data were crucial for recognizing DRPs.

Keywords: Comprehensive medication reviews, drug therapy problems, elderly, community pharmacists, medication safety.

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The potential risks of pharmacotherapy among elderly patients are well recognized.[1] Various medication review procedures involving collaboration between community pharmacists and physicians have been developed in different countries to reduce medication errors and drug-related problems (DRPs).[2–4] These procedures are still evolving, and evidence of their effectiveness is limited. This is particularly true of procedures targeted to elderly patients, which involve patient interview and access to patient medical records.[4–6]

In Finland, the Ministry of Social Affairs and Health has recommended regular medication reviews and multiprofessional collaboration as ways to promote rational pharmacotherapy and prevent DRPs among the elderly.[7] Since 2005, a national 1.5-year training program (35 credits; 1 credit equaling about 27 hours of student work) has been available for pharmacy practitioners to obtain accreditation in conducting comprehensive medication reviews (CMRs).[8] This program focuses specifically on geriatric pharmacotherapy, differentiating it from long-term training programs in other countries.[4] The Finnish CMR procedure is based on close collaboration with physicians, who select patients, and involves both access to clinical patient information and face-to-face patient interviews. The procedure closely resembles the

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comprehensive medication therapy review (MTR) in the United States, which is a core element of the medication therapy management (MTM) service model.[3]

Objectives

The objectives of this study were to (1) assess DRPs documented by specially trained Finnish community pharmacists who conduct CMRs for geriatric patients through a procedure that involves access to clinical patient data, face-to-face patient interviews, and case conferences with physicians and (2) describe the resulting interventions for home-dwelling and assisted-living primary care patients 65 years or older.

Methods

This study involved 32 community pharmacists participating in a CMR accreditation training program in Finland in 2006–07.[8] These practitioners came from community pharmacies with different prescription volumes and locations in different parts of the country. They had long work experiences, averaging 13.3 years (range 3–26). To be accepted into the training, pharmacists needed to have collaborated with local health care providers previously. However, no experience with medication reviews or MTM services was required, as these procedures were not routinely available in Finland. Before conducting CMRs, the participants practiced on several standard cases as a part of their training.[8]

During the training, pharmacists conducted CMRs among patients selected by their collaborating physicians based on potential problems or risks in the patients' pharmacotherapy. The patient inclusion criteria were the same as those used in the Home Medicines Review in Australia.[9] An informed consent for CMR was requested from patients or their authorized representatives. Patients were given time to consider participation and could opt out at any time. After a written consent was received, the physicians provided patients' clinical information (i.e., diagnoses, medications, laboratory test results) to pharmacists in writing, usually during brief face-to-face discussions. Pharmacists then interviewed patients face to face at patients' homes, involving caregivers or nurses as needed. A structured interview form was used to record actual medication use and detect DRPs (Appendix 1 in the electronic version of this article, available online at www.japha.org). The issues reviewed during CMR were similar to those in the comprehensive MTR in MTM services in the United States[3]: drug therapy effectiveness, appropriate drug choices, doses and duration of treatment, untreated conditions, adverse drug reactions, drug–drug interactions, contraindications, adherence, and drug costs. Pharmacists prepared structured case reports for each patient with findings and recommendations for physicians. In Finland, pharmacists do not have the authority to alter prescriptions. Thus, the pharmacist and physician, possibly accompanied by a nurse, had a face-to-face case conference to determine actions. These decisions were documented on the case report.

Informed consent was requested from patients or their authorized representatives to use anonymous CMR case reports for this study. CMR cases were included if written consent was received, cases involved primary care patients 65 years or older, and documentation of the case conference was available. CMR case reports were received as paper prints from pharmacists.

Of the 174 patients recruited, 166 consented to have a CMR. Of these, 45 patients were excluded from the analysis for the following reasons: did not give consent to participate in the study although consented to have a CMR (n = 17), case report and related case conference with physician were not completed in a given time frame during training (n = 9), case reports were not applied in the local CMR procedure (n = 5), pharmacist did not return documentation of CMRs conducted (n = 5), patient younger than 65 years (n = 5), and patient was an inpatient (n = 4).

Analysis of DRPs

The Pharmaceutical Care Network Europe (PCNE) classification for DRPs version 5.01[10] was used to classify the DRPs and intervention(s) resulting from identifying DRPs from CMR case reports (classified by S.N.S.L. and J.V.). The most relevant issues to be discussed with physicians during case conferences were documented on a separate section of the report titled "most important findings and recommendations." To avoid overestimation, only these high-priority issues were classified as DRPs. Drug cost–related issues were commonly reported but were not coded because the PCNE classification lacks such a DRP category.[10] Interventions were categorized according to the physician's decisions at the case conference.

Data were analyzed using SPSS version 16 (SPSS, Chicago). Comparisons between home-dwelling and assisted-living patient groups were made by independent sample *t* test or Mann-Whitney *U* test, as appropriate. Pearson chi-square test was used to compare the distributions of DRPs between groups. *P* values less than 0.05 were considered statistically significant.

Results

CMR case reports meeting the inclusion criteria (n = 121) were received from 26 pharmacists. Home-dwelling patients (n = 70) had more over-the-counter (OTC) and "as-needed" prescription drugs than patients in the assisted-living setting (n = 51) (Table 1).

Community pharmacists reported 785 potential DRPs (average of 6.5/patient). The mean number of DRPs was higher for home-dwelling patients (7.2) than for patients living in an assisted-living setting (5.5; $P = 0.014$) (Table 1). The most common DRPs were inappropriate drug selection (17% of DRPs), which most often involved hypnotics and sedatives, and lack of drug treatment (16%) when a clear indication was present, especially involving calcium supplementation and cardiovascular drugs (Table 2). The distribution of DRPs was similar in both groups (Table 2).

Pharmacists recommended actions for 83% (n = 649) of the 785 DRPs. The remaining DRPs (n = 136) represented documentation to inform physicians, with no recommendation for action. Physicians accepted 55% (n = 360) of recommendations without revision. A different intervention than that suggested by the pharmacist was agreed on for 5% of recommendations (n = 33). As a result of case conferences, changes in drug treatment were agreed upon for 51% (n = 403) of DRPs. Of these, the most com-