Prescriptions stored in the Swedish national prescription repository – presence of prescription duplicates, prescriptions for changed treatments and double medications.

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Background: Misuse and medication errors are common causes of patient morbidity. Patient adherence to prescribed treatment for chronic conditions has been estimated to be on average about 50% (1), drug related problems may cause as much as 30% of acute admissions to hospital care (2) and the costs have been estimated to be of the same magnitude as the direct costs for pharmaceutical drugs. Discrepancies between medical records and patients stated current medication are common (3-5).

E-prescribing, from physicians’ electronic medical record (EMR) directly to the pharmacies, constitute >75% of all prescriptions in Sweden and >70% of patients in Sweden store their prescriptions electronically in the national prescription repository (NPR), accessible from any pharmacy in Sweden. New e-prescriptions are automatically stored in the NPR. Prescriptions are stored in the NPR as long as a new dispensing is allowed. Patients can receive a printout at any pharmacy with information on the stored prescriptions or see them via a personnel code via Internet.

Of legal reasons, physicians are only allowed to see the prescriptions stored in the NPR if the patient chooses to let the doctor see them. Physicians are not able, nor allowed to institute any changes in the stored prescriptions. Pharmacists are able and allowed to make changes in or destroy the stored prescriptions, but on patient demand only. Consequently, the NPR may contain both prescriptions for current actual treatment and for non-current, previously changed or terminated treatment as well as prescription duplicates. For patients with many medications and/or many changes in the treatment the risk for mistakes and medication errors may be increased.

Objective: The objective was to study the presence of prescription duplicates in the NPR, and to study the presence of (a) prescriptions for noncurrent or previously changed treatment (2) prescription duplicates and (3) prescriptions for “double medications” in the NPR.

Design: Cross-sectional study. Patients, over 18 years of age with 5 or more prescriptions stored in the NPR and having one or more of their own prescriptions dispensed on week-days during a three-week period at each pharmacy, were invited to the study. Pharmacy customers being only representatives for other patients were excluded. Patients giving written informed consent to participate were interviewed on their prescribed current and actual prescribed treatment and compared with a printout of the patients’ stored prescriptions in the NPR. The prescriptions in the NPR were classified as current, actual treatment or b) non-current, previously changed or terminated treatment. Prescription duplicates (identical prescribed treatment with regard to substance, administration formula, strength and dosage) and prescriptions for double medication (prescriptions for the same symptom but differing with respect to prescribed strength, dosage or substance), were identified.

Setting: Three large pharmacies – two large community pharmacies in Stockholm (February) and Gothenburg (April) and the large public pharmacy at the University Hospital in Örebro (April).

Main Outcome Measures: Proportions of prescriptions for (a) non-current treatments that had been changed or terminated, (b) prescription duplicates and (c) “double medication” in the NPR.

Results: In total 276 pharmacy customers were invited to the study and 264 patients (162 women and 102 men) with 2580 prescriptions (Md 9; range 5-37) in the NPR, met the inclusion criteria and gave written informed consent to participate. The age distribution of the patients and prescriptions is shown in Figure 1 and 2.

There were significantly higher proportions of prescriptions among women compared with men for non-current medication (p=0.038), prescription duplicates (p=0.001) and double medication (p=0.006), as well as to patients <65 compared to those >65 for both women (p=0.0025) and men (p<0.001). However, there were no correlation between total number of prescriptions and the proportion of unique, current prescriptions in total (c=0.26).

Discussion: Prescriptions for non-current treatment and prescription duplicates are common. Four out of five patients have at least one noncurrent prescription or duplicate prescription in the Swedish NPR. The results are consistent with the findings that discrepancies between EMRs and claims data on the one hand and patient reported current medication use on the other, are common (3-5). Both a printout from the EMR of the prescribed current medication and of the prescriptions stored in the NPR generates prescription records with the brand names used by the prescriber when issuing the prescriptions. However, due to mandatory generic substitution in Sweden, other brand name(s) may have been dispensed.

Patients with many medications and/or frequent changes in the prescribed treatment may have difficulties to keep record of and adhere to the current prescribed treatment. The occurrence of prescriptions for non-current therapy and prescription duplicates in the NPR is a source for medication mistakes and expensive overuse or underuse of pharmaceutical drugs. Discrepancies between EMRs and claims data on the one hand and patient reported current medication use on the other, are common (3-5). Both a printout from the EMR of the prescribed current medication and of the prescriptions stored in the NPR generates prescription records with the brand names used by the prescriber when issuing the prescriptions. However, due to mandatory generic substitution in Sweden, other brand name(s) may have been dispensed.

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Conclusion: Prescriptions for non-current treatment that previously has been changed, terminated and prescription duplicates are common in the Swedish NPR. The risk for medication errors in the open care setting may be substantial.

References:
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