Occurrence of prescriptions for noncurrent - changed or terminated - treatment and prescription duplicates in electronic medical records and the Swedish national prescription repository.

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Background Medical records and pharmacy claims data are common sources in measurements of adherence. However, discrepancies between medical records and patients actual current medication are common (1-3). In Sweden, e-prescribing, from physicians’ electronic medical record (EMR) directly to the pharmacies, constitute >80% of all new prescriptions and >70% of patients store their prescriptions electronically in the national prescription repository (NPR), accessible from any pharmacy in Sweden. Patients’ main information on the prescribed treatment are from three sources a) a printout from the EMR of the prescribed drugs, b) a list of the stored prescriptions in the NPR, and c) the dispensed packs.

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, but physicians are neither 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 compare the prescribed current treatment stated by patients with chronic diseases with the presence of (a) prescriptions for non-current treatment; (b) prescription duplicates, and (c) missing prescriptions, in the EMR and the NPR.

Design Cross-sectional study. Patients over 18 years of age with 5 or more prescriptions in the EMR, listed and/or with a follow-up visits at health care centres, were invited to the study. Patients giving written informed consent to participate were interviewed on their prescribed current and actual treatment and compared with printouts of the prescribed drugs in the EMR and of stored prescriptions in the NPR. The prescriptions were classified as a/ 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 missing prescriptions were identified.

Main Outcome Measures Proportions of prescriptions for (a) non-current treatment; (b) prescription duplicates; and (c) missing current prescriptions in the EMR and NPR.

Results 274 patients gave written informed consent to participate in the study and 218 (80%; 113 females; 105 males) met the inclusion criteria and were interviewed. The patients had altogether 2,522 prescriptions (Md 10; range 5; 31), 2,211 prescriptions in the EMR och 1908 in the NPR.

Total Of 2,522 prescriptions, 1,789 (71%) were unique prescriptions for current, actual treatment, 331 (13%) for non-current medication and 280 (11%) were prescription duplicates.

EMR Of 2,211 prescriptions 75% (1,667) were unique prescriptions for current ongoing medication, 13% (296) were non-current and 10% (236) prescription duplicates. For the current ongoing treatment, 8% (139/1,789) of the prescriptions were missing.

NPR Of 1,908 prescriptions 75% (1,439) were unique prescriptions for current treatment, 10% (187) were non-current and 11% (206) prescription duplicates. For the current, ongoing treatment, 20% (360/1,789) of the prescriptions were missing.

Conclusion Discrepancies between the current, actual medical treatment and the EMR as well as the Swedish NPR were very common, and similar proportions were observed for a) non-current treatment b) prescription duplicates and c) missing prescriptions. Studies on non-adherence comparing pharmacy claims data to prescriptions in EMR or NPR, not taking to account the presence of prescriptions for non-current medication or prescription duplicates may be misleading and overestimate non-adherence rates.

References
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