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Title

Measuring Medication Discontinuation Using Electronic Data

Priority 1 (Research Category)

Research methodology and instrument development

Presenters

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Abstract

Context. Accurately identifying medication discontinuations in electronic health records (EHR) is important for developing evidence on deprescribing. Gaps in dispensing are often used as proxies for discontinuations but inaccurate estimates may bias study results. Objective. Describe reasons for 90-day gaps in dispensing for selected chronic medications to inform development of text strings to identify medication discontinuations. Study design and analysis. Retrospective cohort of adults age 65+ with 2+ chronic conditions who experienced a 90-day gap in dispensing of one of the following chronic medications: oral diabetes drugs, statins, proton pump inhibitors, drugs with anticholinergic properties, anticoagulants, antiplatelet drugs and antihypertensives. Clinical characteristics were identified from EHR data, and dispensings from pharmacy dispensing data. We intentionally sampled records so that approximately 50% had subsequent fills after the gap. Chart reviews covered the period from last dispensing through the 90-day gap plus an additional 120 days. Gaps were classified as true discontinuations (clinically intended) and non-discontinuations (no evidence of intent to discontinue). Reviewers recorded documentation to explain gaps (e.g., “stop [drug] due to side effects”). Documentation was used to develop a text string identification algorithm. Outcomes. Of N=1,922 records across medication groups, 1,147 (55%) reflected true discontinuations. These included provider intent to discontinue, provider substitutions, intentional stops and restarts, and agreeing with a colleague’s or patient’s decision to discontinue. Non-discontinuations reflected low adherence, and changes in dose, pharmacy formulary, and drug formulation. Medications that remained on the EHR medication list through the review period without any documented explanation were categorized as non-discontinuations. True discontinuations were more common when there were no further fills after the gap during the review period. Combining text strings with dispensing and EHR data produced 82-90% sensitivity and 75-80% specificity in identifying diabetes medication discontinuations. Approaches for other medication groups are under development. Conclusions. Using 90-day gaps in dispensing as a proxy measure may over-estimate medication discontinuation. Combining text string searching with EHR and dispensing data may improve accuracy in identifying medication discontinuations.