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Improving primary care prescribing safety using routine data for intervention and evaluation: four trials in 500+ practices

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Objectives

High-risk prescribing in primary care is common and causes considerable harm, with for example, 6% of emergency hospital admissions caused by adverse drug effects. Our aim is to rigorously develop and evaluate complex interventions to improve primary care prescribing safety using routine clinical and administrative data.

Approach

Co-design of interventions by joint academic and clinical teams with implementation embedded in NHS Scotland information and contractual systems. Routine data from general practice electronic medical records (EMRs) or from the NHS Scotland prescribing payment system are used to both underpin the interventions and allow evaluation. Two cluster-randomised trials in 295 general practices have been completed (EFIPPS and DQIP), and two trials in 298 practices are in progress (EPIPP and POEMS), involving 55% of Scottish general practices in total. The completed EFIPPS trial was a three-arm cluster randomised trial of a routine data feedback intervention +/- a theory-informed behaviour intervention involving 262 (95%) of practices in three health boards. The completed DQIP trial was a stepped-wedge cluster randomised trial in 33 (50%) practices in one Health Board, the intervention comprising a web-based informatics tool to identify patients needing review from practice EMRs and to facilitate and structure review, an educational outreach visit, and financial incentives to review patients. EPIPP is evaluating a more complex feedback intervention, where both arms receive an active intervention on a different topic, involving all 242 practices in one Health Board. POEMS is evaluating an 'enhanced medication summary' to support contractually required polypharmacy reviews in older people taking 10 or more regular medications, involving all 56 practices in one Health Board.

Results

The simpler EFIPPS intervention reduced high-risk prescribing by 12% by 15 months after feedback started. We are currently examining what happened in the year after feedback ceased. The more intensive DQIP intervention reduced high-risk prescribing by 37% at 12 months. This effect was sustained in the 12 months after the financial incentives ceased because the intervention reduced new high-risk prescribing. The DQIP intervention also led to large reductions in related emergency hospital admissions with gastrointestinal bleeding, acute kidney injury and heart failure.

Conclusion

We have shown that informatics-based interventions using routine data and co-designed with clinicians and managers are effective in improving primary care prescribing safety. The presentation will describe our approach to intervention development and implementation, show examples of the interventions, and present outcomes and process evaluation data from the two completed trials.

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