Scottish Government Health Directorates Chief Scientist Office

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# Effective Feedback To Improve Primary Care Prescribing Safety (EFIPPS): A Randomised Controlled Trial Using e-prescribing Data

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## Aim
The aim of this study was to develop and test the effectiveness in reducing high-risk prescribing of different forms of data feedback in General Practice.

## Project Outline/Methodology
In the first phase of the study, we worked with an NHS Advisory Group to design the intervention, ensuring that it was embedded in existing NHS systems. This involved defining the high-risk prescribing measures to be targeted, designing the postal educational material, designing the feedback and automating its creation and disssemination, and creating a health-psychology informed intervention intended to increase practices' response to feedback.

The main part of the study was a three arm cluster randomised trial in 262/278 (94%) of practices in three Health Boards. Practices in arm 1 (usual care) received the postal educational intervention only. Arm 2 (feedback only) practices received the same educational intervention plus five rounds of quarterly feedback of their high-risk prescribing rates compared to other practices. Arm 3 (feedback+psychology-informed intervention) received the same educational intervention and feedback, plus a one page psychology informed intervention which changed with each round of feedback. The primary analysis compared arms 2 and 3 to arm 1 for change in high-risk prescribing (an overall measure based on six individual high-risk prescribing measures). We additionally examined changes in prescribing trends in each of the three arms using a multilevel segmented regression analysis, and differences in duration of prescribing.

## Key Results
258/262 (98.5%) practices completed the trial. Before the intervention, practices in the three arms were well balanced in terms of the types of patient they cared for and their rates of high-risk prescribing. After 15 months, the rate of high-risk prescribing fell from 6.0% to 5.0% in arm 1 (usual care), from 6.0% to 4.5% in arm 2 (feedback only), and from 6.2% to 4.5% in arm 3 (feedback + psychology-informed intervention). In the primary analysis, arms 2 and 3 were significantly different from arm 1 (arm 2 vs arm 1 odds ratio for receipt of a high-risk prescription 0.88, 95%CI 0.80 to 0.96, p-0.007; arm 3 vs arm 1 OR 0.86, 95%CI 0.78 to 0.95, p=0.002).

The time trends analysis showed a falling trend in the targeted high-risk prescribing before the intervention. There was no evidence that this existing trend towards lower high-risk prescribing changed in arm 1 (usual care), consistent with the posted educational intervention having no effect. In the intervention arms 2 and 3, there was a statistically significant steepening in the rate of decline in high-risk prescribing. In the duration analysis, there was evidence that the intervention led to cessation of longer-term high-risk prescribing, but no evidence of a reduction in new high-risk prescribing in patients not already receiving it, consistent with the intervention prompting review and discontinuation.

## Conclusions
The study showed that feedback interventions embedded in existing NHS Scotland systems led to a 12% reduction in the odds of the targeted high-risk prescribing compared to a simple educational intervention. There was no additional large benefit to the psychology-informed intervention implemented.

## What does this study add to the field?
This is the first large-scale study to show that feedback of data can improve primary care prescribing safety.

## Implications for Practice or Policy
We are working with NHS Scotland to implement this kind of approach across Scotland, and several Health Boards have already started work in this area.

## Where to next?
We will compare the findings from this trial to findings from other more intensive interventions, and in 2015 will examine what happens in the year that the feedback was turned off.

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