A pilot study to investigate the use of instalment dispensing as a method of reducing drug wastage owing to adverse drug reactions

John Millar, Wendy MacKinnon, Mary V Struthers and Catherine Vass

SUMMARY
A new method of dispensing prescribed medicines that are to be taken for longer than two weeks was investigated. It was found to reduce drug wastage and produce savings in the drugs bill. The scheme was generally well liked by patients, doctors, and pharmacists.
Keywords: *prescribing; instalment dispensing; drugs costs.*

J Millar, DPhil, MRCGP, general practitioner and honorary clinical research fellow, Dingwall, and the Highland and Islands Health Research Institute, Inverness; W MacKinnon, RGN, research nurse, Dingwall. M V Struthers, BSc, MRPharms, Dip Presc Sci, pharmacy prescribing adviser; C Vass, BSc, MRPharms, prescribing support pharmacist, Primary Care NHS Trust, Inverness.

Address for correspondence

Dr John Millar, The Health Centre, Dingwall, Ross-shire IV15 9QS.

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Introduction

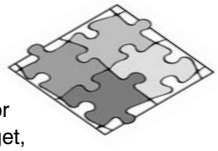
ABOUT 10% of the National Health Service (NHS) budget is accounted for by general practice prescribing.[1] Unfortunately, anecdotal evidence from doctors and pharmacists suggests that a significant proportion of prescribed drugs are wasted. There are no formal studies on the amount of drugs wasted, but drug amnesty schemes, in which patients are invited to dispose of unused medicines at their local pharmacists, have demonstrated that up to 20% of medicines returned are unopened. Furthermore, it has been suggested that if prescription supplies for all returned medicines were limited to 28 days' supply, then wastage would be reduced by one-third.[2] 'Brown bag analysis' (i.e., where patients are invited to bring the medication they have at home for review) carried out by community pharmacists offers indirect evidence of wasted medicines in the community and highlights the role of the community pharmacist in educating patients about their medicines.[3]

Adverse drug reactions are a frequent reason for patients consulting their doctor, and in the majority of cases the offending drug is stopped.[4] Thus, adverse drug reactions, non-compliance, perceived lack of benefit, and the drug being no longer required, are all factors that cause patients not to use their prescribed medicines.

Instalment dispensing is a method that allows partial dispensing of the prescription item over a set time period. For example, the instructions for prescribing an eight-week course of tablets could include 'supply in two-weekly amounts', or 'supply 14 days and balance if tolerated'. If the patient does not collect all the instalments, only the medicines dispensed are charged to the NHS and the balance remains in the pharmacists' stock. Therefore, if adverse reactions lead to the patient discontinuing the medication before completing the prescribed treatment, the use of instalment dispensing could reduce drug wastage and NHS drug costs. During the study period, community pharmacists in Scotland were paid 94.5p per item dispensed, and 65p for the second and subsequent items dispensed on an instalment prescription. However, the patient pays a single prescription charge with instalment dispensing. In England, instalment dispensing fees are only available for controlled drugs.

Instalment dispensing has been shown to produce savings in the general practice drugs bill when applied to repeat prescribing monitored by community pharmacists.[5] This pilot study investigates whether instalment dispensing of newly prescribed drugs has the potential to reduce drug wastage.

HOW THIS FITS IN



What do we know?

The general practice drugs bill is a major part of the National Health Service budget, but indirect evidence suggests that a significant proportion of prescribed drugs are wasted.

What does this paper add?

This pilot study suggests that instalment dispensing reduces wastage.

Method

Dingwall Medical Group is a rural general practice in the Scottish Highlands with a practice population of 11 148. At the time of the study there were nine partners in the practice, who all took part. It is known from the Information and Statistics Division of the Common Services Agency (Edinburgh) that more than 90% of the prescriptions issued by this practice are dispensed by four local pharmacists. During the four-month study period, every patient attending the surgery was given an information leaflet with details of the study. Doctors in the practice were asked to consider issuing an instalment prescription for any newly prescribed drug to be taken for longer than two weeks. Six groups of drugs were targeted: antidepressants, anti-infective agents, and anti-inflammatory drugs, because previous work has shown that these three groups of drugs cause a disproportionate number of adverse reactions;[4] and proton pump inhibitors (PPIs), statins, and ACE-inhibitors, because these are commonly prescribed and relatively expensive drugs, for which the greatest savings were anticipated. Sixty-three per cent of drugs issued during the study period came from the above groups. Local pharmacists kept a record of all instalment prescriptions that were completely dispensed and all instalment prescriptions that were not completely dispensed. Adverse reactions were identified by the doctors and pharmacists participating in the study. Although no formal qualitative assessment was made, telephone enquiries were made at the end of the study by an experienced research nurse to rate patient satisfaction with the scheme. Patients were asked to rate their satisfaction on a scale of 0 to 5, and for any additional comments. This study was approved by the Highlands Ethics Committee.

Results

Two hundred and three instalment prescriptions were written, representing 0.5% of the total prescriptions issued by the practice during the study period. Ninety-three males and 110 females were recruited. One patient refused to participate. The average patient age was 57 years. General practitioners (GPs) recorded 46 (22.6%) adverse drug reactions and stopped treatment on 42 (20.6%) occasions. During follow-up by telephone an additional 12 patients reported adverse drug reactions, but did not consult their GP. Pharmacists advised 10 patients to stop their medication on account of adverse drug reactions. Over half the patients in the study received advice from their local pharmacist about their medicines.

In total, 192 (94.6%) instalment prescriptions were successfully tracked throughout the study period. Forty-six patients left instalments in the pharmacy. Figure 1 illustrates the average savings per prescription for each drug group during the four-month study period. Both antidepressants and anti-inflammatory drugs were commonly stopped because of adverse reactions. Few anti-infective agents were prescribed for longer than two weeks. Only small savings were made in the other three targeted groups of drugs. The final category represents all other drugs outside the targeted groups and is largely accounted for by cardiovascular drugs.

One hundred and twenty-five (61.5%) patients were contacted by telephone at the end of the study and asked about their satisfaction with the scheme. Almost all of them described themselves as happy or very happy with this method of prescribing, and only two patients reported being unhappy with the scheme. It was not possible to contact 78 of the patients. Although there are no demographic details, more than half of these patients were males, with an average age of 51 years, suggesting they could have been at work when the telephone survey was carried out. Unfortunately, 24 of the 46 patients who left undispensed prescriptions were among those who could not be contacted. Of the 22 who were contacted, only one expressed dissatisfaction with the scheme. No significant problems were reported by the participating doctors and pharmacists.

In total, £475.90 worth of drugs were undispensed and therefore available to the pharmacists for future use. The extra cost of instalment dispensing during the study period was £153.40. In addition, pharmacists received a single payment from the Local Health Care Co-operative (LHCC) prescribing support fund of £5.00 per completed pharmacy report for the extra work involved in the study.

Discussion

This pilot study has shown that the use of instalment dispensing for newly prescribed medicines to be taken for more than two weeks could be a useful method of reducing drug wastage, thereby reducing the overall general practice drugs bill. The high number of prescriptions successfully tracked throughout the study period is probably owing to the close working relations enjoyed between GPs and local pharmacists in a rural setting. In an expanded study it is envisaged that prescriptions would be coded and tracked centrally with the help of the Prescription Pricing Division.

Only 0.5% of total prescriptions written by the practice during the study period were issued by instalment. This is because the vast majority of general practice prescriptions — between 70 and 80% — are repeat prescriptions.[6] In addition, doctors were only asked to consider an instalment prescription for certain targeted groups of drugs that were to be given for longer than two weeks. Bond *et al*[5] have already demonstrated that the introduction of an instalment dispensing method to general practice repeat prescribing produces savings to the drugs bill. A proper economic evaluation of this new system in the context of newly prescribed medicines needs to be carried out, but extrapolation of the small savings made in this pilot study would suggest that it

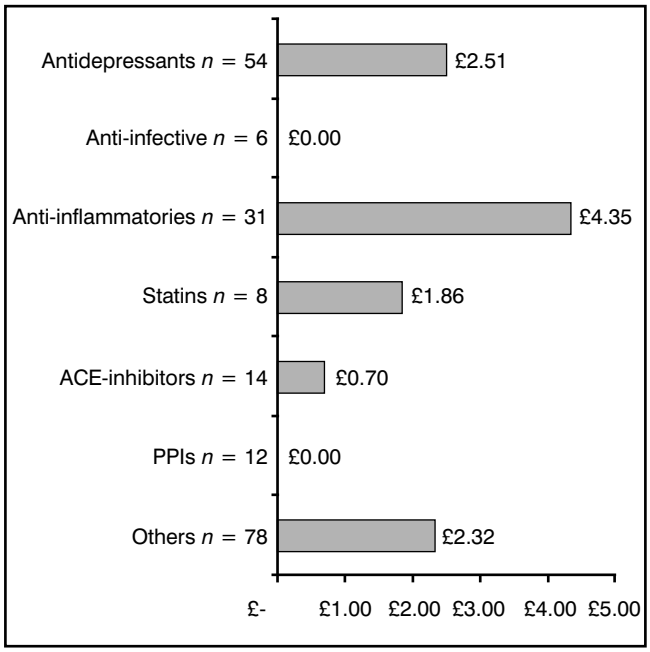


Figure 1. Average savings per prescription in each drug group during the four-month study period, excluding the additional cost of instalment dispensing.

may be possible to make significant reductions in the general practice drugs bill. Figure 1 shows how savings are likely to be made if instalment dispensing is used for most new prescriptions for medicines to be taken for longer than two weeks.

Recruitment of patients was not randomised. Doctors may have unwittingly avoided recruiting elderly patients, for example, or those living a distance from a pharmacy, which would have skewed the results. Likewise, patient and professional satisfaction with the scheme was only crudely measured by a short telephone enquiry. However, given these limitations, this study suggests that patients and professionals find instalment prescriptions to be an acceptable method of dispensing newly prescribed medicines to be taken for longer than two weeks. However, if no savings are made in a particular class of drug, then the extra cost of instalment dispensing would result in a financial loss for that class.

As has previously been shown,[4] adverse drug reactions are a common reason for patients' medicines being stopped. In this study, about 20% of drugs were stopped because of adverse reactions. Wastage was almost certainly reduced as a result of the extra visits to the pharmacist this scheme requires, and by pharmacists giving advice to over half the recruited patients about minor adverse drug reactions. Instalment dispensing offers an opportunity to expand the role of the community pharmacist in counselling patients about minor adverse drug reactions, while at the same time remaining vigilant about serious adverse reactions. Patients with minor problems should, therefore, be saved a visit to the general practice, and more serious reactions can be correctly directed to the GP.

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