

## Research paper

# Copying hospital discharge summaries to practice pharmacists: does this help implement treatment plans?

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## ABSTRACT

**Background** Discharge letters were routinely sent to the patient's general practitioner (primary care physician, family physician) by a care of the elderly consultant. In the past (the 'old' system), copies were also sent to the patients, or their carer, as well as other healthcare professionals if necessary, but not routinely to pharmacists.

**Method** The consultant's practice changed in March 2005 to a 'new' system and the practice-based pharmacists received copies of discharge letters for patients discharged from the two community hospitals. The service change was audited before and after the consultant's change in practice. The pharmacists ( $n = 4$ ) and the consultant were interviewed to ascertain their views about the 'old' and 'new' systems, and potential barriers and enablers to their work.

**Results** Patients were more likely to get the treatment recommended by the consultant as a result of the change in practice: 83% (34/41) compared to 51% (23/45) of patients had treatment plans in their discharge letters implemented. Consultant recommendations were not fully implemented in 7% after

compared to 29% before the change in practice which gave a number needed to treat (NNT) for the intervention of four (95% confidence interval, 3–6).

All pharmacists and the consultant were very positive about the change, having found the 'old' system haphazard and unreliable. They also felt patients were more likely to get the treatment recommended by the consultant. This was supported by results from the audit. Pharmacists felt more integrated into their local healthcare team and that the change linked the discharge process in secondary care with the existing pharmacist medication review service in primary care. All felt there would be benefit to the patient and value in extending the scheme, without any adverse increase in workload.

**Conclusion** Sending discharge letters to pharmacists working in the practice as well as general practitioners can lead to improvements in co-ordination of care and implementation of consultant recommendations for treatment.

**Keywords:** communication, consultant, general practitioner, pharmacist, prescribing, therapy

## How this fits in with quality in primary care

### What do we know?

Improving communication on medication after discharge from hospital by involving community pharmacists has been shown to improve aspects of care but there are very few studies in the UK investigating ways of doing this and evaluating the outcomes.

### What does this paper add?

Sending hospital discharge letters to community pharmacists as well as general practitioners can lead to improvements in co-ordination of care, satisfaction of professionals and implementation of consultant recommendations for treatment.

## Introduction

The need for improved communication between primary and secondary care, especially in relation to prescribing has been recognised for some time.<sup>1</sup> Several studies have shown that there has historically been a lack of communication between hospital staff (both medical and pharmacy in secondary care), general practitioners (GPs; primary care physicians) and community or practice-based pharmacists in primary care regarding discharge medication.<sup>2-4</sup>

Munday *et al* investigated the opinions of community pharmacists and GPs in Glasgow on discharge summaries, via questionnaires.<sup>4</sup> They found that almost all the pharmacists and GPs who responded would have liked, and actively sought information on, reasons for drug changes. However, the majority of respondents did not routinely receive such information. Sexton *et al* (2000) also found that few hospital trusts involved community pharmacists in the discharge process.<sup>5</sup>

The Royal Pharmaceutical Society of Great Britain's guidance on discharge and transfer planning (2006) recommended providing community pharmacists (as well as patients and GPs) with information on discharge medication to prevent adverse effects and reduce re-admissions.<sup>6</sup> These recommendations are based on a few studies exploring different ways of improving communication and delivery of pharmaceutical care on discharge. They included a pharmaceutical domiciliary visit,<sup>7</sup> sending a pharmacy discharge letter to community pharmacists,<sup>8</sup> and a pharmacist-led discharge process, which informed community pharmacists as well as GPs and patients.<sup>9</sup>

A key study by Duggan *et al* showed that providing community pharmacists with a copy of a letter (given to them by the patient) detailing medication prescribed at discharge resulted in fewer unintentional discrepancies between hospital and community prescriptions (33.2% for the intervention group as compared to 52.7% for the comparison group).<sup>10</sup>

An Australian randomised single blind controlled trial assessed the impact of a hospital-based 'pharmacy

co-ordinator' in 110 patients transferred from hospital to long-term care for the first time.<sup>11</sup> Patients were randomised to an intervention group ( $n = 56$ ) that received the service of the co-ordinator, and a control group ( $n = 54$ ) with the usual discharge process. The pharmacy co-ordinator arranged a transfer summary, timely medication reviews from an accredited community pharmacist, and case conferences with GPs and pharmacists. The appropriateness of medicines was maintained in the intervention group, whereas it deteriorated in the control group. Pain control was also significantly better in the intervention group. There were no differences in the incidence of falls, worsening behaviour, mobility, or confusion.

In Canada, Bergeron *et al* illustrated how a pharmacy discharge plan could be used in clinical practice.<sup>12</sup> The discharge plan recorded details of diagnoses, admission and discharge medications, reasons for changes and any follow-up actions required. This was sent to the patient's GP and community pharmacist. The patient was provided with a copy to give to the nurse visiting them at home. The study found the reasons for drug changes were not usually documented in medical discharge summaries. In addition, community pharmacists did not have access to this information even though they were often the first to see the patient after discharge from hospital.

While there is a desire to improve communication on medication after discharge from hospital and involve community pharmacists in this process, there are very few studies in the UK investigating and testing ways of doing this.

More recently, improved communication and assuring medication accuracy at transitions in care have been the subject of an announcement by the World Health Organization.<sup>13</sup> This refers to the accuracy of information about medicines and medicines reconciliation. This was followed by publications by The National Institute for Health and Clinical Excellence, The National Patient Safety Agency and the National Prescribing Centre about medicines reconciliation and the importance of accurate information at the points where care is transferred.<sup>14,15</sup>

Anecdotal evidence from pharmacists and medical staff in primary and secondary care suggests changes in treatment recommended in discharge letters to the patients' GPs are not always implemented in primary care. Sometimes patients return to clinic with the recommendations made at discharge not implemented. Non-implementation of these proposed changes to treatment, apart from being inconvenient to the patient, could lead to deterioration of the patient's condition and the need for further treatment in secondary care. Consultants working in secondary care have benefited from the involvement of pharmacists on the inpatient care ward to deal with changes to medication, especially when there are complex diagnoses and drug regimes. Both medical and pharmacy staff within the hospital felt it would be useful to extend the sharing of information to the practice-based community pharmacists for patients on discharge. Communication between providers of health care is particularly important for elderly patients who might have several different diseases and multiple drug therapy regimes, and have health care provided by a number of different doctors.

This study aimed to investigate the effect of sharing information about patients' medication between the hospital and practice-based primary care pharmacists. It also sought to assess whether this led to improved implementation of treatment plans after discharge from hospital and could be integrated into the current workload of the practice-based pharmacists.

## Method

Prior to the study, discharge letters were sent to the patient's GP by the care of the elderly consultant working in the hospitals. Copies were also sent to the patients, or their carer, as well as other healthcare professionals if necessary, but not routinely to pharmacists. The practice-based pharmacists were routinely reviewing elderly patients' medicines as part of implementing the National Service Framework for Older People.<sup>16</sup>

The consultant's practice changed in March 2005 and the practice-based pharmacists started to receive copies of letters for patients discharged from the two community hospitals. The community pharmacists worked on a sessional basis, separately to their role as a provider of medicines. Approximately 6 weeks after the pharmacists received the letter, they reviewed the medicines-related aspects of the care plan to ensure that any recommendations that had not been implemented were appropriately dealt with.

The case study design used a mixture of quantitative and qualitative methods and focused on the impact of implementing the copying of hospital discharge letters

from the care of the elderly consultant to practice-based pharmacists in an area served by five community pharmacists in the UK. The duration of the study was four months. One of the five practice-based pharmacists opted out of the study.

For the analysis, patients were allocated to one of three groups: recommendations 'implemented', 'partially implemented' and 'not implemented'. Recommendations were considered to have been 'implemented' if there was a change documented in the notes shortly after the discharge letter was received. For the other two groups any discrepancies were documented on the form and followed up as necessary. 'Partially implemented' plans meant some of the recommendations were implemented (for example new drugs added but drugs to be discontinued not stopped). The 'not implemented' group were letters where none of the recommendations were implemented. Pre- and post-intervention groups were then compared.

The impact of the 'new' system was assessed qualitatively by interviewing the practice pharmacists and the care of the elderly consultant at their place of work. Qualitative semi-structured interviews were carried out in July 2005 (four months after the change in practice) by an independent university researcher. Interviews were taped with the interviewees' consent, and transcribed. The interviewer analysed the data drawing out common themes and patterns (following Patton<sup>17</sup>). Qualitative methods were chosen for this part of the research because they are appropriate for evaluating new programmes and where there has been little research on a topic. Open-ended questions allowed the researcher to understand and capture the perspective of participants without predetermining their perspective. The interviews provided additional depth and detail about the experience of the programme implementation. The topic areas in the interviews covered views about the previous system, benefits and disadvantages of the new system, the effect on workload, and suggestions for improvement.

## Results

### Audit

The audit results showed that the main advantage of the change in practice was that patients were more likely to get the treatment recommended by the consultant.

Before the change in practice, 23 out of the 45 patients had treatment plans in their discharge letters implemented (51%). Of the remaining 22, five (11%) were not implemented, eight (18%) were partially implemented, eight (18%) were lost to follow-up and one (2%) died.

After the change in practice, 34 out of the 41 patients had treatment plans in their discharge letters implemented (83%). Of the remaining seven, one (2%) was not implemented, two (5%) were partially implemented, two (5%) were lost to follow-up and two (5%) died.

Before the change in practice 29% of the recommendations were not fully implemented. Afterwards, only 7% of the consultant's recommendations were not fully implemented. This gives a number needed to treat (NNT) for the intervention of four, with a 95% confidence interval of 2–7.6 (using Graphpad software – [www.graphpad.com](http://www.graphpad.com)).

Under the 'old' system, 20 individual recommendations in 13 discharge letters were not implemented. The most frequent reason why the treatment plan was not implemented was the failure to add new drugs recommended by the consultant (11 occasions). Other reasons were treatments not discontinued (three), follow-up tests not done (three), doses not amended (two), and one patient had the wrong letter scanned onto their record. With the 'new' system the three recommendations not implemented were treatment not added, dose(s) not amended and follow-up tests not done.

## Examples of issues in each group which were not implemented

### *Before the change in practice*

- Liver function tests recommended but not done.
- Adcal D<sub>3</sub><sup>®</sup> not added to prescription.
- Patient not switched from pre-admission antidepressant to recommended post-discharge antidepressant.
- Dihydrocodeine and senna not added to prescription (on tramadol, diazepam and loperamide).
- Haloperidol stopped in hospital, no record of why restarted after discharge.
- Ramipril dose not reduced to 2.5 mg.

### *After the change in practice*

- Ferrous sulphate not reduced to 200 mg daily as recommended.
- Follow-up urea and electrolytes omitted.
- Regular senna recommended – not added to prescription.

## Interviews with participants

### *The 'old' system*

The old system had been 'completely haphazard' (pharmacist D) and the pharmacists had come across medicines that should have been changed (according to the discharge letter):

'It was just chance whether you stumbled upon a discharge letter or not. And of course it might be one or two

years afterwards [in medication reviews] that you discovered that it had never been done.' (pharmacist B)

Coming across changes in prescriptions that should have been made, sometimes two years later, meant that pharmacists were uninformed and felt they were not able to do a good job. It made it awkward for pharmacists to explain to patients why these changes were necessary: being out of the 'communication loop', as pharmacist B expressed it, led to feelings of exclusion. It was also felt that this affected patient care.

One pharmacist was concerned that not implementing the recommendations might have led to relapses:

'In a lot of cases general practitioners weren't acting on the consultant's recommendations and the therapy wasn't getting instigated that had been requested, and therefore possibly leading to relapses and readmissions.' (pharmacist A)

There was not any way of knowing whether this had happened although pharmacists did mention situations where, because medication had not been altered, patients had been put at risk. In addition, it seemed a 'waste' (pharmacist A) for GPs to request advice and then not act on the letters sent from consultants.

The consultant found it was useful to have the pharmacist involved, especially when there were complex diagnoses and drug regimes. Treating a patient could sometimes involve many diagnoses and up to ten drugs and thus it is useful for pharmacists on the ward to know about changes to medication. He felt that this should be extended to the community pharmacists.

The only advantage mentioned by pharmacist respondents about the 'old system' was that there was less work for individuals at the time when the patients were discharged from hospital – they did not need to do anything. However, this could perhaps lead to more work later.

### *The 'new' system*

In the 'new' system, the consultant sent out a copy of the existing letter to the practice-based pharmacists. The body of the letter was not altered to be specifically for pharmacists.

'... the letters have got to be suitable for all concerned. So anything I put in the letter is transparent so the patient can accept it, or the relatives can accept it, or any professional can accept it.' (consultant)

All the pharmacists put aside the letters to see whether changes had been made by the GP. This time lag allowed changes to be made and records updated by the GP, and this was checked by accessing patient records.

If there were changes recommended in the letter that had not been implemented, the pharmacists would

leave notes or contact the GP directly, or contact the medicines' manager at the practice, invite the patient for a review, or create a task on EMIS (a messaging system contacting the GP). The different approaches reflected the different systems in place at the surgeries. The use of a medicines' manager had been an innovation at one practice and this was the person the pharmacist contacted. One pharmacist felt it was better to contact GPs face-to-face, rather than using notes.

One pharmacist found it difficult to find time to talk to GPs because of restricted hours and, in one practice, there was no protected time to speak to GPs. Another favoured using the computerised patient record system because this left an audit trail. These two comments suggested the need for a formal system of recording that pharmacists had alerted GPs to discrepancies or changes needed to medication.

Pharmacist interviewees were asked two questions about how the change in the consultant's practice had affected their work: the first a broad question about benefits and disadvantages; the second specifically about workload. The aim of the first question was to bring out answers not necessarily concerned about workload. The new system had created some more work but mainly this had been 'slotted into' the existing work pattern (pharmacist B). For example, those patients who had changes in medication recommended that had not been done were invited for medicine reviews, and so necessarily took the place of others; or one pharmacist worked more on discharge medications than medication reviews. All the interviewees (including the consultant) said that the amount of additional work generated by the new system was small. The numbers of discharge letters needing action were estimated at 5–10 per month.

One pharmacist had enjoyed the variety of the work and also being of benefit to the patient. The advantages included helping to target the most appropriate patients for medication reviews and enabling planning:

'For one lady in particular, it allowed the review to be timed to be done at a specific point in her plan. So she was to come off her pain killers ... so she was invited in, in the middle of June which was exactly the right time to give her a plan for coming off the tablets.' (pharmacist C)

The disadvantages mentioned were concerned with the system. Two pharmacists mentioned the potential for duplication of effort. For example, it might lead to the patient being called in by the pharmacist and also the GP. Another disadvantage was the frustration of contacting the GPs.

Interviewees were asked if the new system changed anything for patients. All felt that it provided extra safety checks for patients and that the new system had improved patient care. All respondents agreed that patients were more likely to get the treatment recommended

by their consultant. Pharmacists thought the scheme provided a better service to the patient:

'It's got to be better. I just think I'm giving a better service to those patients if you like.' (pharmacist B)

Views varied about whether these changes were critical or not. One respondent thought the changes were not critical. However, in contrast, another pharmacist gave two examples where patients may have been placed at risk because medication had not been changed in accordance with the discharge letter and had left the patients with potentially increased risk of haemorrhages and fractures, respectively. Both these interventions were implemented.

There were a few practical problems, such as ensuring the letters reached the pharmacists, rather than just the GPs, and access to the patient notes. One pharmacist mentioned that managing the letters now called for planning ahead. This was a difference in role for the pharmacist, moving from reacting to patients who come in to a more proactive role planning care:

'So there's not only doing the review, there [are] some instances of revisiting it a month later.' (pharmacist C)

The consultant had only had one patient who had queried the fact that pharmacists were getting a copy of the letter. (Patients were as a matter of course informed which professionals receive a copy of the letter.) However, this patient was pleased with the explanation:

'One person asked why we had sent it, and in a sense one sensed rather disapprovingly but when I explained the reason why, she thought that was a very good idea.' (consultant)

The pharmacists were asked about how the new system had affected relationships with GPs. They thought it unlikely GPs would find any difference because they were used to pharmacists discussing medication after reviews. The relationship with the GPs was made easier by the pharmacists' attitudes which were not to find fault or be an advocate for the consultant but to check changes had not been missed. The pharmacists showed an appreciation of the GP's role and responsibilities and were not seeking to take over part of that role. However, one pharmacist did report isolated instances of defensive reactions from two GPs when querying why recommendations had not been implemented.

### *Improvements that could be made to the process*

When asked what could be done to improve the system, pharmacists made the following suggestions:

- a way of registering that the GP has seen the discharge letter. At present the system is not set up to let pharmacists know whether the GP has seen the discharge letter or not

- there should be routine checks to make sure recommendations have been acted upon
- community pharmacists, not just the practice-based pharmacists, should be involved as well
- responsibility for medicine changes should be formalised. It was suggested that one way of doing this was to have a routine medicines review when patients are discharged from hospital.

### *Should the scheme continue?*

All respondents were in favour of the scheme continuing. The consultant thought it was important to share information and that the scheme should be extended to all elderly patients. Pharmacists thought the scheme provided a better service to the patient by integrating them more into the healthcare system.

### *Extending the scheme*

The consultant thought it would be useful to extend the scheme to other non-elderly patients with complex drug regimes:

'You could make the same plan for cancer patients who have complex drug regimes and so on.'

Although this might seem intrusive, in practice, pharmacists involved in this study reviewed elderly patients' medicines as a matter of course and so have access to that information.

Pharmacists were similarly in favour of extending the scheme, although one thought that more information might be unmanageable. They also thought that letters on complex patients where patients needed a medical plan would be useful. What was important for the pharmacists was the quality of information in the letters, as they gave some medical history and details of medicines and dosages.

## Discussion

In this study, copying in pharmacists to the consultant's discharge letters from secondary care to primary care was used as a simple way to link practice-based pharmacists into the discharge process for all patients. This change in practice had been very simple and easy for the consultant, as the pharmacists received a copy of the same letter that was sent to other professionals, patients and carers. As a result, the pharmacists felt more integrated into their local healthcare team and it facilitated communication between consultant and pharmacists.

The main advantage was that many more patients were getting the treatment recommended by the consultant. The interventions the pharmacists made as a result of receiving the letters resulted in a significantly

lower level of missed medication changes, both in frequency and the clinical significance of the omissions.

Some of the omissions that were audited before the service was changed could have potentially had adverse implications for patients. For example, one patient did not have their antidepressant medicine changed to the recommended one after discharge from hospital. Other patients did not have new medicines started in hospital added to their regular GP prescription, such as antihypertensives, osteoporosis treatments and gastro-protection.

## Limitations

This was a pilot study and is therefore limited by the small number of subjects – four primary care pharmacists and one care of the elderly consultant physician. Only 86 discharge letters were assessed, 45 in the control group and 41 in the intervention group. Resources did not permit individual patients to be followed up, and implementation of treatment plans was done by assessing GP documentation. The methods did not account for 'undocumented' implementation of changes or poor documentation. The study sought to investigate some of the processes involved in the implementation of discharge recommendations, and therefore the significance of specific interventions was not explicitly assessed in this investigation.

The study was not resourced to measure the impact of the change in practice on morbidity and mortality. However, reducing the risk of omissions in treatment on discharge from hospital would be expected to reduce morbidity in primary care, and is an important clinical governance issue. There was also the potential to help patients cope with their discharge medication regime by completing a medication review shortly after discharge from hospital, and to reduce re-admissions to hospital, with the inherent cost implications.

In addition, patients' perception of the pharmacist's role may have evolved to that of a therapeutic advocate.

There is no reason to suggest that this group of pharmacists, the care of the elderly consultant, or this cohort of patients is different from others. If the rate of non-implementation of treatment plans seen in this study could be extrapolated to a similar population of 500 000 (the area covered by the primary and secondary care organisations involved geographically in this study), there could potentially be 220 patients per month not receiving the treatment recommended by their elderly consultant.

## Implications for further work

This was a small study and not designed to show statistical differences in outcome. Both the audit and

the qualitative findings indicate that further research in this area would be worthwhile. Targeting medication reviews in the manner described in this paper may be valuable and cost-effective when compared to unplanned readmissions to hospital.

## Conclusions

This study showed that the change in service was acceptable and achievable for the practice-based community pharmacists, with minimal additional workload, and improved communication with the multidisciplinary primary care team.

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## ETHICS

The study was approved by Northumberland Local Research Ethics Committee (reference number 05/Q0902/32).

## PEER REVIEW

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## CONFLICTS OF INTEREST

None.

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