An investigation of hospital generated pharmaceutical care when patients are discharged home from hospital

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Aims To investigate how seamless pharmaceutical care could be delivered.

Methods Elderly patients discharged from hospital, to their own home, were randomized into control and study groups. Control and study group patients received the normal discharge information. The study group were also counselled about their medicines and informed about their pharmaceutical care plan. Copies of the plan were given to the study patients. All patients received a domiciliary visit between 7 and 10 days after discharge. Their current medication was compared with that on discharge and contact was made with the General Practitioner as appropriate.

Results Twenty-eight study and 25 control patients with a mean (s.d.) age of 77.5 (7.3) and 77.6 (6.1) years completed the study. A pharmaceutical domiciliary visit was necessary for 21 (75%) and 24 (96%) of the study and control patients respectively. Compliance was better ($P<0.01$) in the study group. Unintentional changes to the medication of 31 (14 study and 17 control) patients were found during the visit and after contact with the prescriber all but one prescription was restored to that on discharge.

Conclusions At present it is difficult to ensure seamless pharmaceutical care. A pharmaceutical domiciliary visit may be useful to ensure seamless therapeutic care and thus avoid unnecessary healthcare events and costs after a patient is discharged home.

Keywords: discharge medication, domiciliary visit, seamless pharmaceutical care

Introduction

Seamless care is about helping patients move across the divide between primary and secondary healthcare sectors without experiencing a gap in the standard of their health management. Pharmaceutical care is a philosophy of directing pharmaceutical input to the needs of the individual patient with the aim of improving the patient’s quality of life [1]. At present this is practised in hospitals through clinical pharmacy services but these must be transferred to/implemented in the community to prevent a waste of resources because of either unnecessary visits to the general practitioner or readmission to hospital.

Historically, there has been little formal contact between hospital and community pharmacists about individual patients. The need for such links was emphasised with the implementation of the Community Care Act [2]. In 1992 a policy statement on the pharmaceutical aspects of community care recommended that, prior to the discharge of patients with identified needs, hospital pharmacists should establish links with their community colleagues [3]. The document also advocated the development and use of patient-held information relevant to their in-patient treatment and discharge. This study has been carried out to evaluate how a patient’s therapeutic management plan could be maintained across the secondary and primary interface.

Methods

The study was approved by the Ethical and Research Committee at the Royal Oldham Hospital. Elderly patients, aged 65 years or over, who were to be discharged to their own homes and who were likely to experience difficulties with their medicines (according to clinical pharmacist assessment from a checklist, e.g. appropriate use, understanding of their medicine, mental impairment or medical problems) were referred for possible entry to the study. Patients unable to read or open containers were excluded. From the referrals received, patients were randomly selected and asked to participate. Those giving written informed consent were randomly assigned to a study or control group. Prior to discharge patients in the control and study groups received the usual pharmaceutical care provided by the Royal Oldham Hospital. They were given a medicine record card [4] containing a summary of when to take their medicines together with a copy (coloured blue) of their discharge prescription which contained written instructions to give the form to their doctor before they ran out of their discharge medicines.

Study group patients were verbally counselled by one of the two project pharmacists on why their medication had been prescribed, when to take their medicines, the correct
use of their medication, side effects (and what to do if they occur), the importance of compliance (and what to do if a dose is missed) and how to arrange a new supply. These were included in a written pharmaceutical care plan and given to the patient with instructions to show these plans to their doctor and pharmacist. The patients in this group were also given details of a telephone helpline to contact should they require help or advice during the first 7 days after discharge. A log-book to record the telephone calls and advice given was kept. For all patients the standard discharge letter from the hospital to the general practitioner was sent as normal.

On discharge all patients were given sufficient medication, in bottles with non child resistant closures (CRCs), to last for 7 days and informed that they would receive a home visit, by one of the study pharmacists, 7 to 10 days after discharge. Each patient was visited by a different project pharmacist who counselled them prior to discharge. Visitors were unaware to which group each patient belonged. During this visit an assessment was made on how they were taking/using their medication. Their level of compliance was assessed by direct questions on which medicines they were currently taking/using and from which container, together with a tablet count and a record of their home medicine stocks. Their current medication was compared with that of discharge and if there were any discrepancies then their general practitioner was contacted. For these interventions the patient’s full clinical (including the reason for admission) and therapeutic history from the day prior to admission to the domiciliary visit, was made available to an independent clinical panel (one doctor and two clinical pharmacists) who decided what the outcome may have been without the intervention. These outcomes were classified as (A) of information use only. (B) restored the efficacy of the discharged medication, (C) prevented patient harm (i.e. side effects) and (D) as above but prevented a possible readmission to hospital.

Results

Thirty-four patients were recruited into the study group. In the period between discharge and the domiciliary visit (by the project pharmacist) six of these patients were withdrawn (one patient died, two were re-admitted to hospital, one went into residential care and two decided they did not want the visit). Of the 32 patients recruited into the control group seven patients were withdrawn prior to the domiciliary visit, (four died, one was readmitted and two went into residential care). The mean (s.d.) age of the 28 study and 25 control group patients was 77.5 (7.3) and 77.6 (6.1) years, respectively, and they were prescribed 5.2 (2.2) and 5.3 (2.2) medicines on discharge. Statistical analysis (Mann–Whitney) revealed no difference between their age and the number of prescribed items. Only one patient (study patients only) contacted the helpline and this was to change the appointment of the domiciliary visit.

All patients had contacted their general practitioner to obtain another prescription prior to each domiciliary visit. During the domiciliary visit it was assessed that for 24 (96.0%) control and 21 (75.0%) study patients, the therapeutic management had not been maintained after discharge. Figure 1 shows that, in their own homes, study patients were coping with their medicines better than the control patients. Statistical analysis (Chi-square) demonstrated significantly better ($P<0.05$) compliance levels and significantly less ($P<0.01$) counselling required to the study group. There was no difference in the altered medication between the two groups. On discharge, two patients in each group had been issued with Medidos compliance aids. A further six study group patients and 12 control group patients were issued with Medidos compliance aids following a contact with the patient’s general practitioner during the domiciliary visit. In-patient assessment by the ward clinical pharmacist had revealed that eight study and 10 control patients could not manage CRCs on their medicine bottles. During the visit it was found that three (of these eight) study and three (of these 10) control patients had been supplied CRCs with their first prescription supply. Two of these patients in each of the groups (four in total) were managing to take their medication by leaving the CRCs off the bottle while the others had tipped their medication into old containers which did not have CRCs. One patient also had difficulty pressing tablets out of foil.

Contact was made with each general practitioner responsible for the healthcare of the 31 (14 study and 17 control) patients whose medication, during the domiciliary visit, was found to be different from that of discharge (altered medication category in Figure 1). The medication of all patients except one study patient was restored to that on discharge. Table 1 shows the clinical panel’s speculative assessment of the likely outcome if the 30 successful interventions had not been made. This panel also decided
that for the one study patient whose general practitioner had deliberately altered the medication the change was of no clinical significance (information only). For each of the prevented hospital admissions the clinical panel decided that the average length of stay would have been 5 days. Thus at local trust prices of £275 per night the cost of each admission, to the primary healthcare budget, would have been £1375.

Discussion

Failure to take medication as intended may be due to forgetting, a lack of understanding or deliberate non-compliance. All patients were prescribed multiple drug regimens and it has been identified that complex drug regimes are associated with non-compliance after hospital discharge [5]. Of the patients in the control group 60% demonstrated faulty compliance during the domiciliary visit compared with 18% in the study group. Although the method of assessment was mainly subjective it was the same in both groups. Many elderly patients do have reduced powers of recall during hospitalisation [5] and thus reinforce ment of the counselling during a domiciliary visit is necessary. Patients in the study group did not use the telephone helpline although it was assessed that for 75.0% the domiciliary visit was important. This may be due to either the patient being unaware that there was a problem with their therapeutic management or the lack of familiarity with a new (non-standard) service.

The medication of the 30 (13 study and 17 control) patients was different from that on discharge because the 'old' repeat prescriptions had been issued rather than appropriate discharge medication. Special attention was focused on patients' understanding that they should show their discharge prescription to doctors and pharmacists. The incidence of the unintentional differences between the discharge medication and that 1–2 weeks later was less than that previously reported [4, 6]. It was assessed that the domiciliary visit and prescriber contacted interventions prevented a possible hospital admission in 14% of the study patients and 12% of the controls. Although the assessments by the clinical panel are subjective opinions and cannot be fully validated, reference was made to the patient’s medical notes and the reason for admission. On all occasions for prevented admission the prescribed therapy during the domiciliary visit was the same as that of the admission, and medical admission notes had indicated that the therapy was not suitable for the patient (e.g. inadequate diuretic therapy). Similarly many of the ‘prevented harm’ assessments were consistent with the admission data (e.g. phenytoin toxicity).

The present system of written information passed between the primary and secondary healthcare sectors which relies heavily on the discharge letter from the patient’s hospital consultant to their general practitioner does not ensure seamless care. Recently some trust hospitals have started to use a Medication and Discharge Summary which is sent to the patient’s general practitioner, nurse (if appropriate) and carer (if appropriate). Our study indicates that the patient’s general practitioner should receive this in advance of the usual discharge letter from the consultant. A copy of this form is also given to the patient to show to their doctor and/or community pharmacist. Our study has shown that this back up channel cannot be relied upon. Medication to cover only 7 days may have been a major contributory factor for the discrepancies in medication. This may be overcome if an appointment for the patient to see their general practitioner was made prior to discharge and sufficient medication to cover this period was dispensed.

Eventually, interactive computerised technology should improve the transfer of information but will require major capital investment. Patients could receive their next medication via an automatically arranged visit. Although the electronic transfer of information may help to ensure the supply of medication is seamless, all other aspects are the patient’s responsibility and personal contact via a pharmaceutical domiciliary visit may still be necessary.

References


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