Patients' Knowledge of New Medicines after Discharge from Hospital: What are the effects of hospital-based discharge counselling and community-based Medicines Use Reviews (MURs)?

Elson R, Cook H, Blenkinsopp A.
School of Pharmacy, University of Bradford, Bradford BD7 1DP, UK
Corresponding author: Rachel Elson

Highlights

Hospital and community pharmacists have an important role in supporting patients' medicines use after discharge from hospital. However little research has studied how this resource might be targeted.

In this study, patients were surveyed after discharge from hospital to determine their knowledge and understanding of newly-prescribed medication. Patients received either usual care (nurse counselling at discharge) or pharmacist counselling.

The patients who received pharmacist counselling knew more about their new medicines.

The study findings could help to more effectively target hospital pharmacist resource. Community pharmacist input was under-utilised and the study provides insights into the reasons for this.

Abstract

Aim
To determine the effects of targeted hospital pharmacist counselling on discharge or targeted community pharmacy medicines reviews post-discharge on patients' knowledge of newly started medication.

Method
Controlled trial of targeted medicines discharge counselling provided by hospital pharmacists or follow-up post-discharge medicines review provided by community pharmacists compared with usual care (nurse counselling). Outcomes measured using a

structured telephone survey conducted at two and four weeks after patients were discharged from hospital.

Results

Patients who received hospital pharmacist counselling were significantly more likely to report being told the purpose of their new medicine and how to take it than those receiving usual care. Fewer than half of the patients who were allocated to receive a community pharmacy medicines review did receive one.

Conclusion

The study results indicate that patient knowledge of medicines newly prescribed in hospital is increased by targeted counselling by hospital pharmacists. The findings also suggest the need to improve the consistency of the information covered when providing counselling, perhaps by the implementation of a counselling checklist for use by all disciplines of staff involved in patient counselling. The potential of community pharmacy follow-up medicines reviews is currently undermined by several barriers to uptake.

Introduction

Patients who are discharged from hospital often have new medicines prescribed and medicines-related problems at care transitions are a global problem for which solutions have long been sought. Discontinuity of care, multiple changes to medication either intentional or unintentional, and inadequate patient information can lead to adverse drug events. A systematic review of interventions to reduce medicines discontinuity at transitions found patient education and counseling at discharge and reinforced after discharge to be effective.[1] However few studies linked hospital-based counselling with onward referral for community pharmacy based follow-up to support patients' medicines use. Furthermore it may not be possible to provide pharmacist counselling in hospitals for all patients due to limitations on pharmacist resources and typically much counselling is provided by nurses. Little attention has been paid in previous research to how best to target pharmacist and nurse discharge medicines counselling. The current study set out to investigate the effects of targeted hospital pharmacist counselling and, where patients cannot be counselled by a hospital pharmacist on discharge, whether there might be a benefit in referral to their community pharmacist. In the UK community pharmacies in England are funded by the National Health Service to provide post-discharge medicines use reviews (MURs), thus offering the opportunity to study the effects of a more systematic linkage between hospital and handover to community.

Aim

To determine the effects of targeted hospital pharmacist counselling on discharge or targeted community pharmacy medicines reviews post-discharge on patients' knowledge of newly started medication.

Methods

A telephone survey at 2 and 4 weeks following discharge was selected as the study method. A postal survey was considered but not chosen because of potentially lower response rates due to the requirement for completion on two occasions. The questions, which were piloted prior to the study, covered knowledge of: what the new medicine was for, how to take it, side-effects, tests and monitoring. Likert-type scales were used to assess patients' knowledge of their new medicines. Open questions were included to enquire about patients' opinions on the discharge medicines service provided and the information they had received.

Patients from 11 medical wards in one NHS hospital in England who were discharged on one or more new medicines during a five month period in 2013 were invited to take part. Patients who did not manage their own medication or those who did not have capacity to provide informed consent were excluded. New medication was identified by ward pharmacists from prescriptions and medical notes or from the discharge letter (local policy required that changes to medication during admission should be documented in the discharge letter).

Patients were allocated sequentially to one of four groups;
1) Hospital pharmacist counselling
2) Usual care (nurse or doctor counselling) + community pharmacy MUR
3) Hospital pharmacist counselling + community pharmacy MUR
4) Usual care

Usual care: the hospital's written policy on discharge medicines stated that the prescriber was responsible during the inpatient stay for communicating with the patient about any newly started, stopped or changed medication and ensuring medicines information needs were met, referring as necessary to a pharmacist. On discharge it was the nurse's

responsibility to give the patient their copy of the discharge letter containing the list of discharge medicines, and to ensure the patient understood how to take their medicines and arrangements for obtaining a further supply. Pharmacy staff were responsible for counselling patients referred by their medical and nursing colleagues and patients identified during their stay as having specific counselling needs e.g. if the cause of their admission was related to poor adherence or they were prescribed certain 'high risk' medicines.

Following granting of ethical and research governance approvals patients were approached by the lead researcher and given a participant information sheet with the details of the research together with a consent form and a MUR information leaflet explaining how their local community pharmacy could help after discharge. The documents were left with the patient for a minimum of 24 hours to enable the patient to read and ask questions prior to deciding whether to take part and, for those participating, to sign the consent form. The consent form requested permission to share discharge medicines information with the patient's community pharmacy and GP (by providing them with a copy of the discharge letter). Patients who agreed to take part were asked for their contact details, including telephone number, and also whether they had a 'regular' community pharmacy. If they did, they were asked for the name and address of the pharmacy and that pharmacy was informed of the patients discharge and request for a MUR. If the patient was unable to provide details of a community pharmacy or the community pharmacy contacted was not accredited to carry out MURs they were allocated to groups 1 or 4.

Participating patients were telephoned by the researcher approximately two weeks after discharge and asked to complete the survey. Patients allocated to groups 2 or 3 were also asked to arrange and attend a MUR at the community pharmacy which usually dispensed their prescriptions, and to give the researcher a suggested date for calling back for the follow-up survey. If they were unable to arrange a MUR or no longer wanted to have one they were reallocated to groups 1 or 4. Patients in groups 2 and 3 were contacted again to complete the telephone survey after their MUR. The actual follow-up period for completing the telephone survey was dependent on the group to which patients were allocated. Patients could ask to be called back at a more convenient time and some did so.

The Fisher's exact test was used to compare the hospital pharmacist intervention groups with usual care. This was an exploratory study and there was no information on which to

base an estimate of possible effect size, therefore a formal sample size calculation was not undertaken.

Results and Discussion

One hundred and one patients were recruited to the study and allocated sequentially to the four groups. The numbers in each group were not evenly distributed (Table 1) for the following reasons: i) hospital policy required patients newly prescribed high-risk medicines to be allocated to group 1 or 3; ii) the patient was unable to obtain a MUR (due to their not having a regular community pharmacy; their regular community pharmacy not being accredited to provide MURs; the patient being unable to travel to the pharmacy for an MUR; or at follow-up the patient no longer wanted to have a MUR) so were reallocated to groups 1 or 4. At follow-up, 18 patients were reallocated from groups 2 and 3.

Eighty four patients (83.2% of those recruited) completed the study. Of the seventeen lost to follow-up; eight withdrew; four died; two had provided incorrect contact details; two were transferred to rehabilitation (not managing their own medicines); and one had their new medication stopped prior to discharge.

Age, gender and number of new medicines were similar across the groups (Table 1).

A total of 154 new medicines were prescribed. Patients were able to recall the name of 130 (84.4%) 95% CI [76.6%, 92.2%] of these and could state what 127 (82.5%) 95% CI [74.4%, 90.6%] were for.

Due to the small number of patients completing the study in groups 2 and 3 (Table 1), and following statistical advice, data were combined for the hospital pharmacist counselling in groups 1 and 3 (A) and compared to standard discharge counselling by a healthcare professional and/or MUR in groups 2 and 4 (B) (Table 2). The four patient responses in group 3 after having a MUR were excluded due to the limitations of such a small sample size.

Patients reported that 93.8% of medicines in group A were provided with an explanation of how to take them compared to 51.4% in group B ($p<0.05$). Similarly 82.5% of medicines in group A were provided with an explanation of their purpose compared to 52.7% in group B

(p<0.05). There was no statistically significant difference between groups A and B in the receipt of an explanation for how long it would take for the medication to act or what should be done if experiencing unwanted side-effects. A greater proportion of patients in group B compared to group A were not provided with information on how long they would need to be on the medication (77.0% vs. 52.5%) p= 0.001, tests or monitoring (68.9% vs. 35.0%) p=0.000 or what to do if they forgot to take a dose (79.7% vs. 43.8%) p=0.000. After hospital pharmacist counselling only three patients stated they had not received as much information as they wanted compared with twelve patients in group B.

Counselling patients in the intervention groups significantly improved patients' knowledge of their medicines compared with usual care. Providing counselling has been shown to improve medication adherence and decrease readmission rates.[2] The recall of information will vary and the possible effects of this on the study results is not known. Patients in groups 2 and 3 had to arrange a MUR with their community pharmacy and would state a period of time of when they would be able to visit their pharmacy and when it would be convenient for the researcher to call them back. This meant the period of time between the two telephone survey calls was longer. The information patients retain may also be linked to its perceived importance. In the study carried out by Berry et al, (1997)[3] interactions with medication was ranked lower in importance by patients than by health professionals. This may partly explain the lower percentages of patients in both groups A and B agreeing (18.8% vs. 8.1%) when asked if an explanation was given about whether the medicine interferes with other medicines.

The study had a number of limitations. The study hospital did not have a standard operating procedure (SOP) for specific medicines information items to be provided at discharge and it is therefore not possible to determine why items were omitted (possible reasons might be time constraints or that certain items are not usually covered by some staff). The results are also potentially limited by patient recall and the point of hospital discharge being a potentially stressful time when patients are waiting to be allowed to go home and therefore not ideal for information provision.

The medicines counselling provided by staff prior to, or upon discharge was generally seen positively by patients. Cooper & Garrett (2014)[4] studied inpatients' experiences and preferences of receiving medicines information and education. In that study over one-third of patients indicated that they would have liked more time to talk about their medications

either in hospital or following discharge, of these 19% said they would have preferred a hospital pharmacist and 14% a community pharmacist. Some patients in the current study chose not to have a MUR with their community pharmacists but we do not know their reasons for this decision.

A recent systematic review concluded that intervention by community pharmacists post discharge reduces medicines-related problems.[5] Despite this potential post-discharge MURs were under-utilised in the current study, received by fewer than half of the patients for whom it was recommended in study group allocation. A common reason for this was that patients who had their medication delivered to their home and thus did not usually visit their community pharmacy could not be allocated to receive a MUR. The usual method of MUR delivery is face to face in the pharmacy with telephone delivery currently only possible if the community pharmacist requests prior permission on an individual patient basis. Possible strategies to address the study findings include providing telephone MURs to improve access, identifying patients' MUR access and preferences while they are in hospital and targeting hospital pharmacist counselling more effectively, and providing feedback to service commissioners about how discharge medicines information services can be enhanced. An international review of regional and national initiatives relating to medicines at care transitions identified the importance of local implementation strategies in ensuring regional and national initiatives and policies work effectively.[6] This study has provided insights into how local policies can be refined.

Conclusion

The results of this exploratory study indicate that patient knowledge of medicines newly prescribed in hospital is increased by targeted counselling by hospital pharmacists. The findings also suggest the need to improve the consistency of the information covered when providing counselling, perhaps by the implementation of a counselling checklist for use by all disciplines of staff involved in patient counselling. The potential of community pharmacy follow-up medicines reviews is currently undermined by several barriers including difficulties in access and patient reluctance to participate in a community pharmacy medicines review.

References

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Table 1: Patient data

	Group 1	Group 2	Group 3	Group 4
Number of patients (initial group allocation)	32	18	21	30
Number of patients completing the study	39	10	4	31
Number of new medicines	76	23	4	51
Average age (years)	68	67	45	64
Number of male patients	21	3	3	13
Number of female patients	18	7	1	18

Table 2: Comparison of patient responses (Groups A and B)

Group 1 and 3 (A) patient responses for hospital pharmacist counselling (43 patient responses with 80 new medicines) compared to the group 2 and 4 (B) patient responses for standard discharge counselling by a healthcare professional and MUR community pharmacist counselling (41 patient responses with 74 new medicines)

Did the pharmacist/ healthcare professional...	Yes, definitely		Yes, to some extent		No		I did not need an explanation		Not applicable		p value
	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B	
...explain to you how to take the new medication(s)?	75 (93.8%)	38 (51.4%)	1 (1.2%)	0 (0.0%)	4 (5.0%)	36 (48.6%)	0 (0.0%)	0 (0.0%)	-	-	0.000
...explain the purpose of the medication(s) you were to take home in a way you could understand?	66 (82.5%)	39 (52.7%)	3 (3.8%)	2 (2.7%)	11 (13.8%)	33 (44.6%)	0 (0.0%)	0 (0.0%)	-	-	0.000
...explain the reason for the change to your medication in a way that you could understand?	59 (73.8%)	38 (51.4%)	3 (3.8%)	0 (0.0%)	18 (22.5%)	36 (48.6%)	0 (0.0%)	0 (0.0%)	-	-	0.001
...explain how long you will need to be on your new medication?	33 (41.2%)	11 (14.9%)	4 (5.0%)	6 (8.1%)	42 (52.5%)	57 (77.0%)	1 (1.2%)	0 (0.0%)	-	-	0.001
...explain about any tests or monitoring?	32 (40.0%)	12 (16.2%)	9 (11.2%)	2 (2.7%)	28 (35.0%)	51 (68.9%)	0 (0.0%)	4 (5.4%)	11 (13.8%)	5 (6.8%)	0.000
...explain how you can tell if your new medication is working?	8 (10.0%)	13 (17.6%)	3 (3.8%)	0 (0.0%)	63 (78.8%)	61 (82.4%)	6 (7.5%)	0 (0.0%)	-	-	0.011
...explain how long it will take for your new medication to act?	14 (17.5%)	8 (10.8%)	4 (5.0%)	4 (5.4%)	62 (77.5%)	62 (83.8%)	0 (0.0%)	0 (0.0%)	-	-	0.508
...tell you about medication side-effects to watch for?	27 (33.8%)	14 (18.9%)	2 (2.5%)	8 (10.8%)	51 (63.8%)	51 (68.9%)	0 (0.0%)	1 (1.4%)	-	-	0.024
...explain what you should do if you experience unwanted side-effects?	34 (42.5%)	25 (33.8%)	1 (1.2%)	0 (0.0%)	45 (56.2%)	49 (66.2%)	0 (0.0%)	0 (0.0%)	-	-	0.248
...explain whether the medicine interferes with other medicines?	15 (18.8%)	6 (8.1%)	2 (2.5%)	0 (0.0%)	42 (52.5%)	58 (78.4%)	0 (0.0%)	0 (0.0%)	21 (26.2%)	10 (13.5%)	0.005
...explain what you should do if you forget to take a dose?	42 (52.5%)	9 (12.2%)	0 (0.0%)	0 (0.0%)	35 (43.8%)	59 (79.7%)	3 (3.8%)	6 (8.1%)	-	-	0.000
Have you experienced any difficulty taking your new medication?	3 (3.8%)	1 (1.4%)	1 (1.2%)	9 (12.2%)	76 (95.0%)	64 (86.5%)	0 (0.0%)	0 (0.0%)	-	-	0.008