Improving information transfer from hospital to primary care

Anthony Young, MRPharmS, MSc

When patients are discharged from hospital, medicines-related information is often not effectively communicated to general practitioners. This article describes how a pharmacy-generated electronic discharge letter could help alleviate this problem, thereby reducing risk to patients.

Generating the letter

A program has been set up to generate a drugs-related discharge letter automatically from the entries in the pharmacy computer system (Ascribe).

Once a patient's discharge prescription reaches the pharmacy department, the patient's records are accessed on the computer system. These include details of the drugs that have been dispensed for them during their stay. The program then prompts pharmacy staff to select the drugs that are included in the discharge prescription. New drugs can be added to the prescription (and therefore the letter) as appropriate. There are also prompts to input the other information to be included in the discharge letter, including:

- Survey end-users, using a questionnaire that included a question about risk perception
- Compare the incidences of medicines errors in the GP prescriptions for patients whose discharge was accompanied by an electronic letter (study group), with those whose discharge was not (control group)
- Compare readmissions in the study and control groups

Details of any drugs that have been started or stopped during a patient's stay in hospital and the reasons for such changes
- Details of any dose changes
- Information about the patient's self-medication status and any reasons why they do not self-medicate (eg, because the patient has a carer who manages their medicines)
- Information about whether the patient uses a compliance aid and who fills it (eg, staff at a particular community pharmacy or a carer)
- Details of any drug allergies

The software is designed so that once the discharge letter is finalised, the dispensing labels for the drugs are printed, as well the discharge letter. Three copies of the letter are printed — one for the patient's GP, one for the case notes and one to be retained in the pharmacy department. The letter (see Figure 1, p254) is sent to the GP along with the standard "doctors discharge letter".

It is important to note that, in order to provide the information needed for the pharmacy discharge letters, changes had to be made to some of the procedures in place at the Jubilee wing. For example, a
pharmacist and pharmacy technician now visit patients early in their stay. The pharmacist carries out a medicines review, using the patient’s notes and test results, as well as by talking to the patient and his or her relatives or carers, if available. Drug histories and allergies, together with information about any compliance aids used and the date they are delivered, are obtained from the patient’s GP.

The medicines management technician assesses whether a patient is able and willing to self-medicate during their hospital stay. To do this they use a tool developed by pharmacy staff. If self-medication is considered to be appropriate, medicine reminder charts are drawn up. One-stop dispensing has also been introduced to the Jubilee ward, so that patients who are self-medicating can familiarise themselves with their new regimen and have all their medicines correctly labelled for discharge.

Our team also links into the Single Assessment Process by which a member of the health care team can refer a patient to the pharmacy team if they think that a specialist assessment is required. This occurs both within the Jubilee wing and within the medical directorate at the Queen Elizabeth Hospital.

**Survey**

Once the new pharmacy-generated electronic letter system had been in place for a year, a survey to establish whether end-users thought it had improved the discharge process and reduced risk to patients was carried out.

Questionnaires were drawn up and passed on to the prescribing adviser at Gateshead Primary Care Trust, who distributed them to staff at GP practices within the area and encouraged recipients to complete them. A sample electronic letter was distributed with the questionnaires, so that practice staff who had not yet received such a letter could respond to part of the survey, potentially providing useful opinions.

An indication of the questions that recipients were asked, together with the responses received, are set out in Panel 1 (p255). A total of 74 responses were received — 50 from GPs (representing 40 per cent of all GPs registered with Gateshead PCT), 11 from receptionists, three from prescription clerks, four from practice pharmacists, two from nurse practitioners and four from practice administrators or managers.

**Medicines-related errors**

In order to determine whether the electronic pharmacy discharge letter reduces the risk of medicines-related errors occurring across the primary and secondary care interface, the following study was carried out.

Prescriptions of patients who were discharged from hospital during the two-month study period were selected at random for inclusion in the study, providing the patient met the following criteria:

- Was at least 65 years old
- Had been prescribed at least four medicines on discharge
- Had at least one change made to their prescribed medicines during their stay

(This was assessed by contacting the patient’s GP early in the patient’s stay, and comparing these drugs with those prescribed at discharge)

Four to six weeks after discharge, a further medication history was obtained from the patient’s GP. This was compared with that provided at discharge in order to assess:

- The number of medicines prescribed in hospital but not continued by a patient’s GP post-discharge
- The number of medicines stopped in hospital, but still prescribed by a patient’s GP post-discharge

The number of medicines falling into these categories in the prescriptions of patients who had been discharged from the Jubilee ward (the study group) was compared with the number of medicines falling into these categories in the prescriptions of patients who had been discharged from surgical wards (the control group). The medicines-related information that accompanied patients discharged from the Jubilee wing was one of the pharmacy-generated electronic letters whereas, for those discharged from the medical and surgical wards, it was the standard carbon-copied “flimsy” sheet of a discharge prescription. (All discharges were accompanied by a doctor’s discharge letter.)

There were 116 medication changes in the control group (on the prescriptions of 29 patients) and 147 in the study group (on the prescriptions of 27 patients). The number of medicines prescribed in hospitals but not carried on by a patient’s GP was fewer (but not statistically so) in the study group than in the control group (14 compared with 22). The number of medicines that were stopped while the patient was in hospital but carried...
on by his or her GP was eight in the study group and 30 in the control group, which was a statistically significant reduction (two-sample proportion test, z value = 7.607, P=0.034). An example of a medicine change that was missed in the control group occurred in a patient admitted with epigastric pain. The patient’s aspirin prescription was stopped in hospital, because a duodenal ulcer was diagnosed, but after discharge the drug was continued by the patient’s GP.

When data are combined, the total number

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Panel 1: Indication of survey questions and responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question: Was the content of the discharge letter(s) you received appropriate and useful?</td>
<td>“Not at all useful and appropriate”</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>“Partly useful and appropriate”</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>“Useful and appropriate”</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>“Most useful and appropriate”</td>
<td>63</td>
</tr>
<tr>
<td>Question: Was the information contained in the letter(s) you received clear and concise enough to be practical?</td>
<td>“Not clear/concise”</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>“Some parts clear/concise”</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>“Mostly clear/concise”</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>“Excellent clarity”</td>
<td>67</td>
</tr>
<tr>
<td>Question: Was all of the information about discharge medicines included in the discharge letter(s) you received?</td>
<td>“Little information”</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>“Some missing”</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>“Most drugs covered”</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>“All drugs covered”</td>
<td>60</td>
</tr>
<tr>
<td>Question: Do you consider that the format of the (sample) letter eases the transfer of information between secondary and primary care?</td>
<td>“Yes”</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>“No”</td>
<td>1 (and 1 non-responder)</td>
</tr>
<tr>
<td>Question: Could the (sample) letter could be improved?</td>
<td>“Yes”</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>“No”</td>
<td>32</td>
</tr>
<tr>
<td>Question: Do you think the (sample) letter has the potential to reduce risk?</td>
<td>“Yes”</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>“No”</td>
<td>2</td>
</tr>
<tr>
<td>Question: Would like to see this style of letter accompany all discharges from the hospital</td>
<td>“Yes”</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>“No”</td>
<td>1</td>
</tr>
</tbody>
</table>

*Comments included: “Format is perfect, especially as it outlines the discontinuation of medicines” and “Will stop one ringing . . . the hospital regarding confusions.” *Suggestions were mainly to combine the pharmacy letter with the doctor’s discharge letter.
of changes not actioned in the primary care setting was 52 (44 per cent) in the control group, compared with 22 (15 per cent) in the study group — representing a 29 per cent potential risk-reduction.

Readmissions were also fewer in the study group — eight compared with 13 in the control group.

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**Benefits**

The research carried out strongly suggests that there are benefits in sending pharmacy-generated electronic letters on discharge. In general, GPs and their staff welcomed the development and its use was associated with a reduction in the number of post-discharge medicines-related errors, potentially reducing risk to patients.

It is difficult to say for certain that the decrease in the number of medicine changes missed in the study group was a direct result of the use of pharmacy-generated discharge letters. Although care was taken to match patients in terms of age and medicine changes, differences in the nature of the Jubilee wing — a rehabilitation ward to which patients are often referred from other wards and stay for some time — compared with the surgical and medical ward meant that factors such as length of stay were markedly different between the study and control groups. Other changes in procedure on the Jubilee wing, such as the focus on self-medication, might also have prevented errors by, for example, making it more likely that a patient would alert his or her GP to discrepancies that had been resolved before the post-discharge audit took place. Some “discrepancies” might also have been deliberate prescribing decisions on the part of a GP.

The study also suggests that introducing the pharmacy-generated electronic discharge letter may reduce readmissions. However, reasons for patient readmissions are notoriously complex and the sample size and study design were not such that any real conclusions on this subject could be drawn.

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**References**


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**Another elderly discharge scheme**

Last month’s “Focus on technicians” article, (2006;13:226–8) outlined a scheme in place at Darlington Memorial Hospital and Darlington Primary Care Trust to improve care on the discharge of older patients to an intermediate care facility. Available at PJ Online (www.pjonline.com/links/hp)