Are general practitioners satisfied with electronic discharge summaries?

Melanie Alderton and Joanne Callen

Abstract
The aim of this study was to assess general practitioners’ (GPs’) satisfaction with the quality of information in electronic discharge summaries and the timeliness of their receipt of the summaries. The study was conducted in a 75-bed Australian public metropolitan hospital which uses an electronic discharge summary which is mailed to the patients’ nominated GP. Eighty-five GPs were surveyed regarding their satisfaction with the content of the electronic discharge summary and the timeliness of receipt. The majority of respondents indicated that they had received the electronic discharge summary within two weeks of the patients’ discharge from hospital. The majority also indicated that they were satisfied with all eight documentation data elements. Some GPs indicated that they would prefer to receive the electronic discharge summary electronically by email rather than by conventional mail, and that they would like more information in the “follow-up and recommendations” content areas of the summary.

It was concluded that the majority of GPs agreed that the electronic discharge summary was an improvement over the manual discharge summary. Further developments in the safe and secure electronic transfer of discharge summary information needs to be addressed to meet the information needs of GPs.

Keywords (MeSH):
Computerised Patient Records; General Practice; Patient Discharge; Electronic Mail; Computerised Medical Record Systems

Introduction
The discharge summary document is an essential vehicle for communication between general practitioners (GPs) and hospitals as it provides clinical and administrative information necessary for continuity of care (Bolton et al. 1998; Bolton 2001; Wilson et al. 2001). Traditionally, discharge summaries were completed manually by the clinician responsible for the care of the patient whilst in hospital and mailed to the GP upon or soon after discharge. Discharge summaries record information regarding the patient’s course in hospital including significant test findings, procedures performed, the patient’s response to treatment and condition on discharge, including medications and follow-up care (Abdelhak et al. 2001; Huffman 1991).

Studies have shown that two key issues for GPs in relation to discharge summaries relate to the quality of information in the discharge summary and timeliness of receipt (Bolton et al. 1998; Castelden et al. 1992). The items of information to be included in the discharge summary which GPs have identified as being of greatest importance are:
- treatment whilst in hospital
- a list of diagnoses
- follow-up treatment
- management and outcomes
- discharge medications
- dates of admission and discharge (Castelden et al. 1992).

Interestingly, as early as the 1990s Castelden and colleagues (1992) also found that most GPs surveyed indicated that they would prefer a computer generated discharge summary to a manual one.
A recent study on GPs’ attitudes regarding the value of discharge summaries and the timeliness of receipt found that 67% of GPs reported that the discharge summary was either useful or very useful; however, timeliness of receipt was still an issue, with less than half receiving discharge summaries within two weeks of the patient’s discharge date (Middleton et al. 2004). Other studies have shown similar results in relation to timeliness of receipt (Schabetsberger et al. 2005; Wilson et al. 2001). One study showed that in 2001 communication between hospitals and GPs was at an unacceptably low level, with only 27% of GPs ever receiving a discharge summary, two thirds of whom reporting that they received it in a timely manner (Wilson et al. 2001).

Information technology could facilitate the discharge summary process as well as the seamless sharing of information between hospitals and primary care providers (Mann 2005). The patient’s electronic discharge summary could be part of the clinical information system which draws information from other systems and is sent electronically to the patients’ local medical officer. Electronic preparation and transfer of discharge summaries has been suggested as one way of solving timeliness of receipt (Wilson et al. 2001) and improving the quality of information in the discharge summary (Pagliari, Gilmour & Sullivan 2004).

The National E-Health Transition Authority (NEHTA), which was established in 2005 as a collaborative enterprise between the Australian national and state/territory governments, is developing standards for the secure exchange of clinical information (National E-Health Transition Authority n.d.). Hospital discharge summaries and referrals will in future use standardised data formats and terminologies. In July 2001 NSW Health released a document titled “Shared responsibility for patient care between hospitals and the community – an effective discharge policy” (NSW Health 2001). The policy emphasises the importance of continuity of care and communication on discharge between patients’ carers, service providers and GPs. It reports that a major contributing factor to adverse events was poor communication between acute and primary care health professionals. The discharge summary is the key communication between the GP and the hospital and an electronic discharge summary could facilitate this communication and hence needs to be studied in depth.

The electronic discharge summary was introduced in the study hospital in October 2004. Although the summaries are produced electronically, they are manually transferred to GPs; the electronic discharge summary is printed and then mailed to the GP. The current study sought to evaluate the electronic production and manual transfer of the discharge summary in terms of GPs satisfaction with the quality of information and timeliness of receipt.

Method

Design, study site and population
The study utilised a survey design and was conducted in a Sydney metropolitan, 75-bed public hospital which provides general medicine, geriatric and rehabilitation services to the local and wider community. The population consisted of all GPs of patients who were discharged from the hospital for a seven week period between July and August 2005. The total number of GPs satisfying the criteria for the audit period was eighty-nine; however four had invalid phone or fax numbers and these were not verified (n=85).

Data collection
Surveys were sent to the 85 GPs of patients who were discharged from the hospital for the period of interest, whose length of stay was greater than two days and who had an electronic discharge summary completed and available for printing from the clinical information system. Patients who had died whilst an inpatient or who had no GP listed were excluded. After one week the non-respondent GPs were followed up with a phone call. This procedure was repeated for the following six weeks. In the first week the surveys were mailed to the GPs whilst in subsequent weeks they were faxed to facilitate prompt delivery. GPs were not sent more than one survey, even if they had multiple patients discharged within that period.

GP satisfaction survey and analysis of results
The GP satisfaction survey was based on previous surveys (Middleton et al. 2004; Schabetsberger et
al. 2005; Wilson et al. 2001) and modified to suit the study site. An area of particular interest to the study hospital was the adequacy of information contained in the electronic discharge summary if the patient had been transferred from another hospital without a completed discharge summary. A question to capture that information was added to the survey. The survey consisted of six questions. The question asking GPs to rate their satisfaction with the quality of information in the electronic discharge summary included eight data elements: amount of information; accuracy of information; summary of progress; treatment; follow-up and ongoing management; results; medication, and layout of the discharge summary. One free text question asked for suggestions for improvement. The data were entered into the Statistical Package for Social Sciences (SPSS) version 11.0 (Coakes & Stead 2003) and analysed using descriptive statistics.

Discharge summary production at the study site
The electronic discharge summary can be commenced early in a patients’ admission and is accessed by the treating doctor with a secure login via a computer terminal through the hospital clinical information system. Some data elements such as patient demographics and name and contact details of the patients’ general practitioner are sourced from the existing patient administration system and automatically populate the document. Pathology and diagnostic results can be also pulled across from the clinical hospital information system. Discharge information is entered via free text in the relevant sections. Extra information can be added or modified prior to completing and signing off the document. At the time of this study, the discharge medications were handwritten onto a pharmacy script, and then transcribed again into the medication field on the electronic discharge summary. It should also be noted that while the generation of the discharge summary is electronic, the means of communication from the hospital to the general practitioner is still manual with the electronic summary either, posted, faxed, or sent with the patient. It is not emailed.

Results

Profile of the study population
A total of 85 surveys were either mailed or faxed to GPs. The number of completed surveys returned was 54, giving a response rate of 64%.

Overall satisfaction and timeliness of receipt
The majority of GPs surveyed agreed (93%) that the electronic discharge summary was an overall improvement on the manual discharge summary (Table 1).

Table 1: Number of GPs who agreed that the electronic discharge summary was an improvement on the manual discharge summary

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>n</th>
<th>%</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>50</td>
<td>92.6</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: % to one decimal point as n = 54

When asked if they had received a discharge summary for their recently discharged patients, the responses indicated that the majority (83%) of GPs had, and it had been received within two weeks of the date of discharge (Table 2).

Table 2: Receipt and timeliness of receipt of the electronic discharge summary

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>45</td>
<td>83.3</td>
<td>9</td>
</tr>
</tbody>
</table>

Did you receive an electronic discharge summary for your patient?
Did you receive the electronic discharge summary within 2 weeks of discharge?

Note 1: % to one decimal point as n = 54
Note 2: One missing response was added to n/a.
Adequacy of information for patients who were transferred
The study hospital frequently admits patients who are transferring from a nearby large acute care facility. If the patient was transferred from this facility, respondents were asked:

a) Did they receive a discharge summary from the transferring hospital?

b) If they did not – did the electronic discharge summary from the study hospital adequately cover their treatment at the previous hospital?

The total number of patients transferred was 42 out of 54 (78%). Two thirds of these patients’ GPs did not receive a discharge summary from the transferring hospital (Table 3). However, if a discharge summary from the transferring hospital was not received, then in most cases (76%) the GP responded that the electronic discharge summary from the study hospital adequately covered the patients’ prior treatment at the transferring hospital.

Satisfaction rating of the quality and quantity of information in the electronic discharge summary
It can be seen that the majority of GPs were either satisfied or very satisfied with the electronic discharge summary in all eight of the documentation data elements (Table 4).

Free text feedback from the GP
The responses to the free text question, Do you have any comments or suggestions regarding the electronic discharge summary? are grouped into positive feedback and suggestions for improvement. Five respondents said they would like more information regarding follow up and recommendations for ongoing care; four responded that they would like to receive the electronic discharge summary electronically (Table 5). Other suggestions by the GPs included:
- would like a phone call on discharge;
- explanation of medications;
- too many blood results;
- too long with poor layout
- no discharge date

Table 3: Receipt of discharge summary from the transferring hospital, and adequacy of the electronic discharge summary to cover previous treatment

<table>
<thead>
<tr>
<th>Did you receive a D/S from transferring hospital?</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>n %</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>If not, does the electronic discharge summary adequately cover prior treatment?</td>
<td>25</td>
<td>76</td>
</tr>
</tbody>
</table>

Note 1: Missing and n/a responses not included

Table 4: GPs satisfaction with the quality and quantity of documentation in the electronic discharge summary

<table>
<thead>
<tr>
<th>DOCUMENTATION DATA ELEMENTS</th>
<th>UNSATISFIED OR VERY UNSATISFIED</th>
<th>NEUTRAL</th>
<th>SATISFIED OR VERY SATISFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>Amount of information</td>
<td>5 9.3</td>
<td>5 9.3</td>
<td>44 81.5</td>
</tr>
<tr>
<td>Accuracy of information</td>
<td>1 1.9</td>
<td>5 9.3</td>
<td>48 88.9</td>
</tr>
<tr>
<td>Summary of patient progress</td>
<td>4 7.4</td>
<td>10 18.5</td>
<td>40 74.0</td>
</tr>
<tr>
<td>Intervention/Treatment</td>
<td>2 3.7</td>
<td>11 20.4</td>
<td>41 75.9</td>
</tr>
<tr>
<td>Follow-up and ongoing management</td>
<td>6 11.1</td>
<td>7 13.0</td>
<td>41 75.9</td>
</tr>
<tr>
<td>Results section</td>
<td>6 11.1</td>
<td>4 7.4</td>
<td>44 81.4</td>
</tr>
<tr>
<td>Medication section</td>
<td>5 9.3</td>
<td>4 7.4</td>
<td>45 76.3</td>
</tr>
<tr>
<td>Layout of the document</td>
<td>5 9.3</td>
<td>11 20.4</td>
<td>38 70.3</td>
</tr>
</tbody>
</table>

Note 1: % to one decimal point as n = 54
Table 5: GPs free text comments on the electronic discharge summary

<table>
<thead>
<tr>
<th>Comment</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>More information on follow-up/recommendations – management plan, more detail</td>
<td>5</td>
</tr>
<tr>
<td>Would like to see electronic transfer as well</td>
<td>4</td>
</tr>
<tr>
<td>Would like a phone call also on discharge</td>
<td>2</td>
</tr>
<tr>
<td>Explanation of medications</td>
<td>2</td>
</tr>
<tr>
<td>Too many blood results</td>
<td>2</td>
</tr>
<tr>
<td>Too long, layout poor, hard to find the information</td>
<td>1</td>
</tr>
<tr>
<td>No discharge date</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
</tr>
</tbody>
</table>

POSITIVE FEEDBACK
The electronic discharge summary is readable and informative | 2
Happy – sped up the management of patient | 1
Good layout | 1
A big improvement | 2
Total | 6

Note 1: In August 2005 the format of the electronic discharge summary was updated based on user feedback, the changes were - only recent blood results included and an easier to read format.

Discussion

GP satisfaction with electronic discharge summaries
Results from our study showed that GPs were satisfied with electronic discharge summaries in terms of timeliness of receipt and quality of information. The literature reviewed identified three items that were most important to GPs in relation to discharge summaries:
- treatment provided in hospital
- instructions for follow-up

Our study showed that although three quarters of GPs reported they were ‘satisfied/very satisfied’ with the two data elements, intervention/treatment and follow-up/ongoing management, there were a number who responded that they were ‘neutral’ or ‘unsatisfied/very unsatisfied’. These key documentation data elements require further follow-up studies to ascertain reasons for dissatisfaction by the GPs.

Conclusion
A key recommendation from the study was that education be provided to doctors, especially junior doctors, regarding the importance of documenting clear instructions for the GP, in order to assist with the ongoing management of the patient following discharge from hospital.
In particular, attention should be paid to follow-up instructions and the summary of a patients’ treatment in hospital. It is also recommended that the date of discharge should automatically populate the electronic discharge summary. Documentation of drug allergies and medication errors should be further investigated.

The quality of information in the electronic health record (EHR) is only as good as the quality of all the individual components that feed into it. As the discharge summary is one of the foundation building blocks for the EHR, it is essential that monitoring of quality and accuracy of discharge summary information takes place on a regular basis. This is particularly the case when there is implementation of any new system or updating of an existing system. Electronic transfer of information to GPs as opposed to faxing or mailing should also be explored.

References

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