

## SHORT REPORT

# Communication with general practitioners after accident and emergency attendance: computer generated letters are often deficient

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**Objectives:** Accident and emergency departments see large numbers of patients, and computerised administration systems are a useful tool for producing discharge communication. The purpose of this study was to determine the quality of such correspondence.

**Methods:** Retrospective review of 300 discharge letters and case notes.

**Results:** 29% of all computer generated discharge information was incomplete or misleading. Twenty five per cent of all correspondence was lacking or unacceptable overall. The principal reasons for substandard correspondence were inaccurate coding of diagnoses and procedures, and failure to include specific information relevant to patients' follow up.

**Conclusions:** Computer generated discharge communication is often deficient. Staff using such systems should be made aware of the importance of accurate coding, and use added explanatory text to clarify diagnoses, management, and follow up as required.

General practitioners require prompt and accurate information when their patients attend accident and emergency (A&E) departments, particularly where they are asked to continue care.<sup>1-3</sup> Writing discharge letters is time consuming, and the concept of using computerised administration systems to generate discharge communication automatically is attractive.<sup>1</sup> Although efficient, very little is known about the quality of letters produced in this manner. The aim of this study was to determine the accuracy and comprehensiveness of such correspondence.

### METHODS

Derriford Hospital, Plymouth, is a large district general hospital and the main tertiary referral centre for the far south west of England. The A&E department is attended by about 78 000 patients per annum. All discharge communication in our department is produced using Hospital Administration Software Solutions' "Emergency Department Information System" (EDIS, Version 10.02.000, HAS Solutions Ltd, 4–10 Bridge Street, Pymble, NSW 2073, Australia). This system generates letters from data entered by receptionists, nurses, and doctors, and relies on a combination of mandatory information (diagnosis, investigations ordered, procedures performed) as well as an optional amount of explanatory text. Explanatory text can be used to clarify problems that may arise with the coding of diagnoses or procedures, and to draw the general practitioner's attention to specific issues requiring action.

Relevant previously published reports were identified through a Medline based literature search (textwords used: accident and emergency, discharge letter, correspondence, general practitioner, communication) and manual cross referencing. A total of 300 randomly selected discharge letters and

case notes were then reviewed retrospectively. All patients had attended the A&E department during the month of September 2001. A "gold standard" letter was defined as containing the following information:

- Accurate primary diagnosis
- Relevant secondary diagnoses
- Concise summary of patient's management (including details of minor operative procedures if relevant to follow up)
- Hospital follow up arrangements
- Any issues (including social) requiring follow up or action by the general practitioner

Discharge letters were then assessed against this standard. In all cases, the letter was examined before reviewing the patient's clinical notes. The content of the computer generated part of the letter was then graded as sufficient, misleading, or incomplete. The information contained in any additional text, if entered, was graded helpful or unnecessary, and the overall quality of the letter was judged satisfactory, lacking, or unacceptable. (The definitions of these terms are summarised in table 1.) The overall standard of clinical record keeping was high: case notes were legible and provided sufficient information for comparison with discharge letters.

**Table 1** Definitions

| Criterion                         | Rating       | Definition  |
|-----------------------------------|--------------|---|
| Computer generated information    | Sufficient   | All necessary information included  |
|                                   | Incomplete   | Failure to mention relevant secondary diagnosis<br>Failure to mention aspects of management essential to patient's further care |
|                                   | Misleading   | Inaccurately coded diagnoses<br>Wrongly coded diagnoses   |
| Additional text                   | Helpful      | Useful information clarifying diagnosis, management, or follow up   |
|                                   | Unnecessary  | No useful information in addition to computer generated part of letter  |
| Overall quality of correspondence | Satisfactory | All necessary information relevant to patient's further care included   |
|                                   | Lacking      | Inaccurate diagnosis<br>Missing detail regarding management or follow up  |
|                                   | Unacceptable | Wrong diagnosis<br>Dangerously misleading content   |

**Table 2** Breakdown of most common causes of substandard (lacking or unacceptable) correspondence (percentage of substandard letters, n=76)

|   | %  |
|---|----|
| Inaccurate or wrong diagnosis                             | 46 |
| Failure to include specific issues important to follow up | 22 |
| No removal of sutures date                                | 21 |
| Secondary diagnosis missing                               | 7  |

Some letters were deficient in more than one area, and only the four most common causes are included, percentages therefore do not add up to 100

**RESULTS**

Twenty nine per cent of all computer generated discharge information was found to be either incomplete or misleading (fig 1). Twenty five per cent of all correspondence was lacking or unacceptable overall (fig 2), the main reasons being: inaccurately or wrongly coded diagnoses (46%), failure to mention specific issues relevant to GP's follow up of patient (22%), failure to mention date for removal of sutures (21%), and failure to include important secondary diagnoses (7%) (table 2). Additional text had been added to only 8% of letters, but was considered helpful in 96% of these.

**DISCUSSION**

Effective communication between A&E departments and general practitioners improves continuity of care and outcome, and poor communication is the most common source of dissatisfaction among GPs.<sup>1-4,6</sup> Increasing numbers of patients presenting to A&E departments, combined with a requirement to participate in regular audit, the desire to minimise time spent on administrative tasks, and the falling cost and increased availability of computers, is likely to result in much greater use of computerised administration systems than before. Heavy reliance is placed on these systems to produce not only accurate correspondence but also accurate information for management, research, and audit.

In this study, almost one third of computer generated discharge information, and a quarter of all correspondence, was found to be deficient. The principal reasons were inaccurate coding of diagnoses and procedures, and insufficient use of explanatory text. Inaccurate coding is ultimately always

attributable to user error, but this may be intentional or inadvertent. An unskilled user may inadvertently select an inappropriate code for a given diagnosis. This type of mistake can be minimised by training, and should also be amenable to some software manipulation to offer more user friendly coding systems. A trained user may intentionally code inaccurately if the diagnosis or procedure they are trying to enter is not offered by the database. This type of error is therefore imposed by system limitations, which can only be resolved when recognised. We believe that we have revealed a flaw in our system in respect of diagnostic coding that must be corrected, but have not found significant inaccuracies in other coding practices.

Using computerised administration systems to generate discharge correspondence from previously captured data is efficient,<sup>1</sup> but the quality of these letters on our system is poor. We obviously cannot comment on other systems available, but have no reason to believe that ours is significantly worse than others. We were surprised by the degree of inaccuracy revealed by this audit and fear that a false sense of security may be generated by using automatically generated letters. The manufacturers of our system were equally surprised and are investigating software fixes that may help to reduce some of the inaccuracy.

At present, our administration system is not capable of consistently producing discharge letters that meet our gold standard from coded information alone, and adding free explanatory text is therefore essential. Furthermore, it seems unlikely that any system will ever be able to independently generate letters that meet all the very varied requirements of A&E departments unless a huge amount of data are captured (for example, regarding patients' social circumstances), which will be redundant in most cases.

Accurate coding of diagnoses and procedures is important for audit, research, and management, but free text is crucial for providing individualised care to individual patients. Staff using computerised administration systems should be made aware of the importance of accurate coding, check the content of computer generated correspondence, and add explanatory text where necessary.

**Contributors**

Jon Jansen initiated the study, formulated the hypothesis, designed the protocol, collected, analysed and interpreted the data, and wrote the paper. Iain Grant participated in the formulation of the hypothesis, the interpretation of the findings and edited the paper. Guarantors: Jon Jansen and Iain Grant

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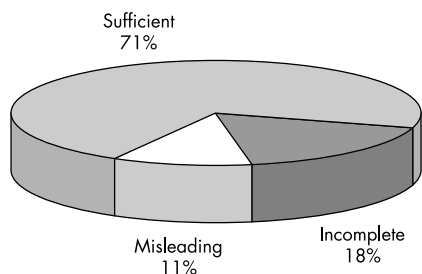
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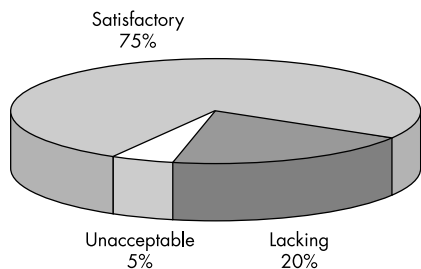
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**Figure 1** Content of computer generated discharge information (percentage of total, n=300).



**Figure 2** Overall quality of correspondence (percentage of total, n=300).