

Evaluation of a computer-generated discharge summary for patients with acute coronary syndromes

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SUMMARY

The discharge summary from hospital to community physician contributes importantly to patient management, but deficiencies in its preparation are well documented. We sought to determine the preferences of general practitioners for standard dictated or computer-generated discharge summaries for patients with acute coronary syndromes. The majority (68.5%) of GPs preferred the computerized summary and particularly liked its comprehensive content, concise style, ease of access to relevant information, clarity and ease of reading. Most (66.9%) thought the computer-generated summary provided the clearer management plan and 70.8% recommended its use for other specialities. In addition, its speed of generation enables GPs to receive a summary within seven days of patient discharge.

Keywords: computerized records; discharge from hospital; coronary disease.

Introduction

THE discharge summary from hospital doctor to general practitioner (GP) contributes importantly to continuity of patient care in the community, yet it is usually delegated to junior staff with little training in its preparation.¹ Completion rates may be low, quality of information variable,^{2,3} and delays in preparation prolonged. Recognition of these deficiencies (and pressure from purchasers) led to the design of a structured, computer-generated summary integrated with the coronary care database for patients with myocardial infarction and unstable angina (Figure 1). Primary care physicians in the United States have expressed a preference for computer-generated over dictated summaries for neonates in paediatric intensive care.⁴ However, application of this technology to acute coronary syndromes has not been reported and preferences among primary care physicians in this country remain unclear.

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Method

One hundred and forty-seven GPs were sent a six-point questionnaire, together with twinned examples of computer-generated and dictated discharge summaries. The GPs worked in 66 local surgeries and the most recent secretarial list showed that they made up the total number of GPs referring to the hospital. The computer-generated summaries were actual summaries (personal details altered to preserve anonymity) selected at random, while the dictated summaries were prepared by a medical senior house officer blinded to the purpose of the study.

Results

A total of 127 questionnaires were returned (response rate 86.4%). Differences were compared using chi-square analysis.

Which discharge summary do you prefer? Eighty-seven responders (68.5%) preferred the computer-generated summary and 36 (28.3%) the dictated summary ($P < 0.001$). Four expressed no preference.

What do you like most about each format? Features of the computer-generated summary identified by 13 or more (>10%) responders were: contains all relevant details ($n = 23$); concise ($n = 22$); relevant information easily found under subheadings ($n = 20$); clear ($n = 16$); quick to read ($n = 14$); easy to read ($n = 13$). Features of the dictated summary were: more personal ($n = 26$); easy to read ($n = 18$).

What do you like least about each format? Features of the computer-generated summary identified by 13 or more (>10%) responders were: impersonal ($n = 15$). Features of the dictated summary were: less information ($n = 20$); need to extract information ($n = 17$); long time to read ($n = 14$).

Which format provides a clearer management plan? Eighty-five responders (66.9%) found in favour of the computer-generated summary and 36 (28.3%) in favour of the dictated summary ($P < 0.001$). Six expressed no preference.

Would you recommend a computer-generated format for other specialities? Ninety responders (70.8%) answered yes and 29 (22.8%) answered no.

What is an acceptable delay for receiving discharge summaries? One hundred and twelve responders (88.2%) answered ≤ 7 days, and all but one of the remainder ≤ 14 days.

Discussion

The high response rate (86.4%) reduced the potential for bias in the preferences expressed by the local GPs. We deliberately posed simple, 'open' questions, which mostly required free-text responses in a further attempt to avoid bias. The simple questions evoked clear opinions from the GPs, the majority preferring the computer-generated summaries, although several volunteered that the dictated summaries were of a higher than usual standard. Features of the computer-generated summary particularly liked

Newtown General Hospital	
Tel: 0181 123 4567 Fax: 0181 123 7890	
CCU DISCHARGE SUMMARY	
Dr Salim Ohri 123 Practitioner St East Ham London E13 5RT	
Oct 24, 1997	
Cardiac Diagnosis: Acute Anterior Wall Myocardial Infarction	
ECG: regional ST elevation; Serum CK: (1) 23 (2) 1232 (3) 23	
Dear Dr Ohri	
Mr John Smith DoB: 3/7/49	Hospital No: 951753
19 Patient St West Ham London E6 1AB	
Date of Admission: 17/10/97	Date of Discharge: 23/10/97 Admitting Physician: Dr. Timmis
This 48 year old man was admitted to the CCU with chest pain of less than 2 hours standing.	
<ul style="list-style-type: none"> ● Cardiac History: myocardial infarction: none PTCA: none unstable angina: none CABG: 1990 	<ul style="list-style-type: none"> ● Risk Factors: smoker; nondiabetic; no hypertension family history +ve Cholesterol: 7.0 (needs simvastatin, dietary advice and OP review)
<ul style="list-style-type: none"> ● Emergency Treatment: aspirin thrombolysed with SK (lysis time < 6 hours) (hospital lysis time < 2 hours) 	<ul style="list-style-type: none"> ● Complications: important complications included: VF CHB (pnced)
<ul style="list-style-type: none"> ● Further Investigation: further cardiac investigation included: exercise ECG cardiac catheter (+ve for ischaemia) (waiting list) 	<ul style="list-style-type: none"> ● Additional Clinical Events: additional clinical events included: GI bleed
<ul style="list-style-type: none"> ● Secondary Prevention: aspirin: given; continue indefinitely. beta blockers: given; continue indefinitely. ACE inhibition: not given. statin: no LVF during admission. given; continue indefinitely repeat cholesterol at 3 ms rehab course: life-style advice given, enrolled on rehab course. 	<ul style="list-style-type: none"> ● Discharge and Follow-Up: he was discharged after 6 days in hospital. An OP appointment has been made for 4 weeks. Discharge drugs: ASPIRIN 75MG DAILY ATENOLOL 50MG DAILY SIMVASTATIN 20MG DAILY CIMETIDINE 400MG BD
Dr Adam Timmis MD FRCP	
<small>This is a computer-generated summary from Cardiobase Systems ©</small>	

Figure 1. A fictitious example of a computer-generated discharge summary for a patient with myocardial infarction.

where its comprehensive content, concise style, ease of access to relevant information, clarity, and ease of reading, although some commented unfavourably on its impersonal flavour. Importantly, most responders thought the computer-generated summary provided a clearer management plan.

Our questionnaire indicated that most GPs want discharge summaries within a week of discharge, a target we can meet in most cases. Thus, in 1996 computer-generated summaries were dispatched for 405 (90%) of 449 eligible patients; 337 (83%) of these summaries were received within a week. Data entry takes about 10 minutes and the potential for facsimile transmission direct from computer screen to practice office may lead to further reductions in transfer time.

Acute coronary syndromes lend themselves well to electronic data storage because modes of presentation, complications, and management strategies are well defined. These data can be used for audit and research as well as discharge summaries. Many responders recommended computer-generated summaries for other specialties and, although not all may be suitable, their introduction has already been reported in intensive care and some surgical specialties.^{4,5}

In conclusion, computer-generated discharge summaries in patients with acute coronary syndromes can be rapidly generated with a high completion rate, reducing the 'unseen' workload of junior and secretarial staff. Moreover, they are preferred to conventionally prepared discharge summaries by most GPs.

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