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The electronic immediate discharge document: experience from the South West of Scotland

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ABSTRACT

Background Communication and transfer of information between healthcare professionals are essential to a seamless healthcare process, and are vital for ensuring that there is smooth transition of care for patients. Throughout the National Health Service (NHS) Scotland, there is a wide variability in the quality and quantity of information provided in the immediate discharge document (IDD).

Aims To analyse general practitioner (GP) attitudes and responses on the quality and efficacy of an electronic IDD (e-IDD).

Setting All GPs in Dumfries and Galloway.

Methods GPs communicating electronically with the hospital were sent a survey questionnaire at the end of an 18-month pilot. An amended questionnaire surveying potential interest was sent to the remaining GPs in the region.

Results The overall response rate was 70%. Eighty-one percent of practices connected received the e-IDD regularly, but the majority still used it in conjunction with its postal equivalent. Seventy percent complained of inadequacies in content relating to medication and follow-up information. Eighty percent agreed that it was faster and 68% felt significant cost savings could be made. Eighty-eight percent wanted a multidisciplinary input. Concerns were raised about funding, need for adequate training and back-up systems. Ninety-six percent were optimistic that in future other forms of clinical communications could be sent electronically.

Conclusion Discharge content is more important than delivery method. Emphasis should be placed on ensuring standards are met on the quality and quantity of current e-discharge documents. Further clarification is required on patient confidentiality issues and legal validity of electronic patient records. E-health is to play a larger and ever-increasing role in the NHS in Scotland.

Keywords: communication, discharge documents, electronic

Background

Effective communication between primary and secondary care is vital to ensure the smooth transition of care for patients when they leave hospital. Currently when a patient leaves hospital, a handwritten document is produced by the medical staff, detailing relevant information necessary for the general practitioner (GP) to be able to continue the patient's care: the 'immediate discharge document' (IDD). This is followed subsequently by a more detailed, usually typewritten letter: the 'final discharge document'.[1]

Throughout the National Health Service (NHS) in Scotland, there is a wide variety in the quality and quantity of information provided by the IDD.[1,2] The Scottish Intercollegiate Guidelines Network (SIGN) circulated a minimum dataset recommended for use in

Scotland.[3] This guideline was intended to address deficiencies in content, structure and production of the IDD. Since the original SIGN directive, there has been a major initiative intended to improve documentation within and communication between primary and secondary care in the NHS in Scotland: a second refined SIGN guideline has been available since January 2003.[2]

The Electronic Clinical Communication Implementation (ECCI) is a programme to ensure that relevant NHS Scotland staff share appropriate information about patients electronically under certain safeguards.[4] The ECCI aims to break down traditional barriers between GP and hospital services by enabling patient information to flow between different healthcare sectors and ensuring patients receive seamless treatment and care, regardless of where it is provided. The use of electronic patient discharge letters after a hospital appointment or stay is one of the areas of focus of ECCI.[2,4]

Dumfries and Galloway in southwest Scotland is predominately rural, covering some 2500 square miles, with a population of approximately 147 000. The Royal Infirmary, based at Dumfries, is the main district general hospital with 350 beds. The hospital has a high patient turnover, with an excess of 16 000 admissions and discharges annually. The majority of the population lives in scattered towns and villages, and healthcare provision is heavily dependent on 136 GPs working out of 35 practices. This large distributed rural population poses unique difficulties in fast and effective patient data transfer from the hospital to the GPs.

With the objective of providing adequate information on the day of discharge in order to effectively hand over patient care from the hospital back to the GP and primary healthcare team, Dumfries and Galloway Royal Infirmary piloted an electronic immediate discharge document (e-IDD) scheme. The project aims to amalgamate recommendations of the SIGN guidelines in providing an adequate, standardised discharge document, with the benefits of rapid and efficient data transfer envisaged by the ECCI.[2–6]

We present the results of a survey of GPs in southwest Scotland, carried out to audit their views on the efficiency of the e-IDD, and to analyse the impact it has had on their practice. We wished to gain valuable feedback from the GPs on the advantages and disadvantages of this form of electronic patient communication.

Materials and methods

The e-IDD project has been operational in Dumfries and Galloway Royal Infirmary since July 2002. All practices in the region are connected to NHSnet, a secure managed national network developed exclusively for the NHS.[7]

Forty GPs in nine practices were selected for an 18-month pilot project to receive the e-IDD. They were all using GPASS (General Practice Administration System for Scotland), and were already communicating electronically with the hospital for various purposes.[8] GPASS is a Windows™-based clinical system developed by the NHS from software originally designed by Dr David Ferguson, a Glasgow GP, for use in primary care in Scotland. The e-IDDs were initially sent out using X-400, a secure mail server that allows message traceability between two X-400 enabled points on the NHSnet (X-400 International Telecommunications Union Standard Protocol).[7] From 11 April 2003, new connections on the NHSnet used SMTP (Simple Mail Transfer Protocol). The X-400 service was phased out on 7 November 2003, and all existing X-400 connections migrated to e-SMTP. The e-SMTP is an enhanced SMTP messaging environment that offers a store-and-forward service to carry interpersonal messaging between sites with autonomous messaging systems.[7] The e-SMTP provides higher levels of security via server authentication, IP look-up and other processes. No special information technology (IT) training or induction was given to the selected practices, other than general guidance on its operation. As a back-up to the e-IDD, the document was printed out and sent by post to the practices.

The discharge documents were prepared by the junior house officers on a structured Microsoft Access™ template. Four identical copies of the IDD are generated: one for the GP, one for hospital records, one for pharmacy and one for the patient. The GP copy is automatically emailed to the practice as the system identifies the practice code entered on patient admission. An example of the e-IDD format is presented in Appendix 1.

A postal survey questionnaire (see Box 1) was sent out to the 40 GPs who were using the e-IDD at the end of the 18-month pilot. A modified form of the same questionnaire (see Box 2) was mailed to the remaining 96 GPs, who were connected to the NHSnet but not yet receiving e-IDD, to ascertain their views on using such a service, before being recruited into the project. The GPs were asked to return their replies anonymously.

Data obtained from both the surveys were analysed separately. The GPs were also asked to give further suggestions on how to make the project more effective and to raise any other concerns they might have had about it.

Box 1 Questionnaire to GPs receiving electronic discharge documents and percentage positive response (28 out of 40 participants responded – 70%)

1	Is your practice aware that patient discharge summaries can be received by email?	89.2%
2	Does your practice regularly receive discharge summaries by email?	81.4%
If yes to above		
3	Does your practice use email discharge summaries alone?	30.7%
4	Does your practice use email discharge summary in conjunction with mailed immediate discharge summary?	69.2%
5	Does your practice use email discharge summary in conjunction with follow-on discharge letter?	100%
6	Are you concerned about confidentiality of patient information sent by email?	48%
7	Do you feel that emailed discharge letters are faster and more reliable than post?	80.7%
8	Do you feel that an induction programme or IT training session would be necessary to access and fully utilise an email discharge system?	48.1%
9	Do you regard the information provided by email discharge sufficient?	31.8%
If no to above, why?		
10	Contains too much jargon.	21%
11	Contains insufficient information regarding discharge medications.	50%
12	Contains insufficient information regarding patient follow-up.	73%
13	Do you feel that the email discharge letter could replace the formal mailed discharge letter?	42%
14	Would you benefit from multidisciplinary team input on the email discharge letter?	88%
15	Could significant cost savings be made by emailing patient discharge information?	68%
16	Do you think in future other forms of clinical correspondence could be sent by email?	96.1%

Box 2 Questionnaire to GPs not receiving electronic discharge documents and percentage positive response (67 out of 96 responded – 70%)

1	Is your practice aware that patient discharge summaries can be received by email?	38.2%
2	Would you be concerned about confidentiality of patient information sent by email?	52.8%
3	Do you think that email discharges would be faster or more reliable than a postal version?	67.3%
4	Do you feel that an induction programme or IT training would be beneficial to access and to fully utilise an electronic discharge system?	62.5%
5	Do you feel that emailed discharge letters could replace the postal discharge letters?	78.2%
6	Would you benefit from multidisciplinary team input into an emailed discharge letter?	89.2%
7	Do you think there will be significant cost savings made by emailing discharge information?	71.7%
8	Do you think in future other forms of clinical correspondence could be sent by email?	93.3%

Results

The response to the first phase of the survey was encouraging: 70% (28/40) of GPs taking part in the pilot responded. Although 89.2% of the respondents were aware of the e-IDD, only 81.4% felt that their practices actually received e-discharges on a regular basis. Only 30.8% of the respondents used the e-IDD alone; the remaining 69.2% chose to use the electronic format of the document along with the mailed copy of the same. All practices were unanimous in that they still attached a great deal of importance to the final discharge letter.

Forty-eight percent of GPs receiving the e-IDD were concerned about confidentiality and security of patient information on the internet. Eighty percent of the respondents using the service agreed that the electronic format was faster than the postal version. Almost half (48.1%) felt that some form of formal IT training or induction programme would be beneficial to optimise use of the service. It is of significance that only 30% of the respondents felt that information currently included on the e-IDD was sufficient. Of the

remaining 70%, half (50%) felt that the document provided insufficient data on discharge medications. Approximately three-quarters (73%) suggested that there was little or no information provided on patient follow-up. An overwhelming 88% felt there would be benefits from having multidisciplinary team input into the e-IDD.

Although 68% felt that significant financial savings could be made from reducing the use of paper, only 42% agreed that the e-IDD in its current format could replace the formal mailed final discharge document. However, it is of interest that 96% of the respondents were optimistic that in future other forms of correspondence from the hospital, such as clinic letters and investigation results, could be replaced by their electronic equivalents.

The response rate to the second phase of the survey, involving GPs with access to NHSnet but not yet receiving the e-IDD, was also 70%. In contrast to the practices already using the e-IDD service, only 38.3% of the respondents were aware that discharge documents could be received in electronic format. Fifty-two percent of the respondents were concerned about patient confidentiality with such a service, and 62% felt that they would benefit from IT training before implementing such a system. Over two-thirds (67.5%) felt that an emailed equivalent of the IDD could be faster and more reliable than the current postal format; 71.7% thought significant savings could be made from this form of electronic communication; 89.2% wanted multidisciplinary input into the creation of such a document and 93.3% felt that in the future other forms of correspondence from secondary to primary care could be in an electronic format.

Discussion

Interest in electronic patient records (EPRs) is growing in general practice. The perceived advantages of an EPR over paper include recall and reminders; greater efficiency, accuracy and quality in patient care; multi-user simultaneous access; rapid search and retrieval of information; and reduced need for filing and copying. It also allows quality improvement and integration with other applications such as patient education software.[9–11]

A study of community family physicians in Canada, by Strasburg *et al*, reported that over 95% of practitioners wanted hospital discharge summaries to be sent to their EPR.[9] The majority of GPs preferred a structured discharge document over a narrative format. The reasons for this are its completeness, readability, conciseness and ease of locating key and vital information.[2]

Data from the current survey provides important feedback from GPs in southwest Scotland already using an e-IDD, and valuable information on the concerns and aspirations of the rest of the region's GPs who are soon to be included in the scheme. Interestingly, the survey reveals that of the practices connected and receiving the e-IDD over the past 18 months, approximately 10% are not even aware of the scheme. Of the remaining 90%, 18% are choosing not to use the emailed documents on a regular basis. Among GPs not yet receiving the e-IDD, only 40% were aware of the existence of the scheme. These statistics highlight the need for increasing awareness of the existence and potential benefits of the scheme, among both those in the pilot and others, in order to make the scheme more widely accepted and successful.

The advantages of an e-IDD from a patient's perspective are that continuity of care is maintained throughout the process of admission and discharge from a hospital, ensuring transfer of relevant, up-to-date information to the primary carers without delay, and also to community health services, of the potential needs of a patient at or before discharge. The benefit to the GP is that a standardised discharge document within the recommendations of the SIGN guideline is available to the practice without any delay. For the hospital it enables collation of all relevant information, improved and faster communication with primary care, and better bed management as overall efficiency of patient care is improved.[12–14] Such a form of electronic communication, integrated into the EPR, would lead to financial efficiencies, such as savings on stationery costs, filing and storage expenditure, postal charges and secretarial and transcription costs, to both the trusts and the practices, as well as enhanced completeness, accuracy and availability of data at the point of care.

Paper has many disadvantages, not the least of which is the difficulty of transferring data from paper to any other medium without considerable effort. It is not interactive, and filing can use up large amounts of space. For all its flaws, however, paper and other manual systems are familiar to practice staff and GPs. It is easier to adapt paper systems to varying staffing levels such as holiday or illness, part-time clinicians, and so on. The foibles of handling paper documents are usually well known: for example, there are many possible locations for a missing laboratory result sheet. In contrast, clinical messaging, emails and computer files remain unfamiliar, especially in a networked environment. A number of processes associated with paper handling may be difficult to convert to electronic equivalent.[6,13,14] Forty-eight percent of the GPs currently using the e-IDD and 62% of the rest felt that formal IT training or an induction programme would be beneficial. These figures clearly indicate the need to establish some form of introductory training to

introduce GPs to electronic clinical communications, and to enable them to fully explore its benefits. Such training should allay many of the fears GPs have about the security and reliability of electronic communications.

A statistic of significant concern is that only 30% of respondents among GPs using e-IDD felt that in its current format the document provided adequate information. Only 42% felt that it could replace the final discharge letter. This emphasises the need for an urgent review of the current e-IDD. Further work is required to ensure that sufficient and complete information is provided on both discharge medications and details of any changes to medication during hospitalisation. It would be useful to involve the hospital pharmacist for this work. Details of patient follow-up, including dates of clinic appointments, need to be clarified. There should also be an emphasis on adequate training of the junior medical staff in completing the discharge details, to ensure that the IDD is up to standard, whether electronic or paper: the SIGN guidelines recommend that senior medical staff should approve the content of every IDD.[1,2] The reluctance on the part of those GPs receiving the e-IDD but not using it could be explained by the fact that they feel the document contains insufficient data, and offers no advantage. It is clear from the survey that GPs overwhelmingly support the involvement of a multidisciplinary team in the formulation of the IDD.[15] Input from paramedical and allied staff would make the IDD a more comprehensive, useful and popular document. SIGN guidelines also recommend that the IDD should be the final discharge document wherever possible.[2] Standardised implementation of this could improve the quality of patient information recorded.

Forty-eight percent of GPs currently using the e-IDD, and 52% of the remaining practitioners, expressed concerns over patient confidentiality, consent and security of patient information on the internet. Movement of clinical information over the internet, intranet and extranet raises concern; the further from the original source, the greater the risk. There can be little effective control over data on computer networks.[16,17] The e-IDD contains personal data and is subject to the Data Protection Act 1998.[2] The SIGN guidelines recommend that access to clinical data and patient records within the NHS should be restricted to a need-to-know basis.[2]

Other issues raised included the reliability of IT systems and the loss of patient data if the system broke down. Many GPs commented on previous bad experiences with NHS IT, which make some reluctant to embrace the new technology fully. Concerns were also raised about the reliability of software and hardware at the practice end of the chain. It is felt that emphasis needs to be placed on updating and maintaining systems, not only at the hospital but also at the local practices. Some smaller practices felt they would not have trained staff to man the computers if the NHS were to move towards a fully networked environment. Some were resentful about the potential transfer of stationery costs from the hospital to the practice. There are many misconceptions about the use of computers and IT in medicine. However, there is overwhelming evidence from other sectors to demonstrate that, if applied effectively, IT not only brings about savings but changes the way in which people work. The key is not the technology itself but the management of the process.

Some GPs had doubts about the need to have typewritten, signed copies of documents for legal reasons. This issue could be addressed to some extent by using electronic signatures where required. Typewritten, signed copies could easily be made available for specific cases as necessary, since all patient details would always be available in the hospital system.

It is encouraging that 80% of the GPs using the e-IDD felt that it was faster than its mailed counterpart. Most were of the opinion that significant cost savings could be made. Ninety percent of GPs were open to the concept that in coming years, more forms of correspondence between them and the hospital could be in an electronic format. This suggests a growing interest in, and acceptance of, EPR and electronic clinical communication among the region's GPs.

Modernisation of services requires a multidisciplinary, multi-organisational approach to planning improvements that benefits patients rather than merely the organisation or the clinical staff. Information flows to support the provision of integrated care should be seen as fundamental to the process of change, and should be factored into service reconfigurations at the earliest opportunity. Data from this study will be used to streamline the electronic discharge service from the hospital as the rest of the region's general practices are recruited into the project over the coming months.

Conclusions

The results of these surveys suggest that content is more important than delivery method. There is definite room for improvement to the current form of the e-IDD. Emphasis should be on ensuring that standards are met both in the quality and quantity of its content. Efforts are required in training of both the medical staff concerned in preparation of the document and also the GPs in using the technology. Confidence-building measures are required to convince GPs about the reliability of NHS IT systems. Issues such as patient confidentiality, security of patient information in computer networks and legal

validity of electronic records and communications need further clarification. Investment and equipment are pointless without ensuring that those using NHS IT are fully involved in its development and are appropriately trained and supported to use it.

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CONFLICTS OF INTEREST

None.

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Appendix 1

NHS Dumfries & Galloway

Pharmacy Copy

DUMFRIES AND GALLOWAY ROYAL INFIRMARY
DISCHARGE/TRANSFER SUMMARY

Page 1

GP	**Surname**	**Patient Reg. No.**			
	Forename	**Consultant**			
Referral No.	**Date of Birth**	**Admission Date**	15/02/2004	**Admission Ward**	
GP Address	**Address**	**Admission Type**			
		Reason for Admission/Transfer			
		Discharge Date	24/02/2004	Time	Ward
					7
	CHI No.	**Discharge To**			

A further discharge communication will not follow this document

Drug & Type of Preparation	Route of Admission	Dose	Frequency	Days recommended	Quantity Supplied
UNIPHYLLIN	PO	400MG	BD	7	
VENTOLIN	NEBS	5MG	QDS	7	
FRUDEMIDE	PO	40MG	MANE	7	
PULMICORT TURBOHALER	INH	1 PUFF	BD	7	
IPRATROPIUM	NEBS	500 micrograms	QDS	7	
PREDNISOLONE	PO	10MG	MANE	7	

Number of days supply **Pharmacist's initials** **Date**

Allergies NONE KNOWN

Principal Diagnosis	**Code**
ACUTE INFECTIVE EXACERBATION OF COPD. MILDLY CONFUSED ON ADMISSION	
Other Diagnosis Text	Other Diagnosis Code
PREVIOUS ADMISSIONS FOR COPD - SEEN IN OUT PATIENT CHEST CLINIC	
PREVIOUSLY VENTILATED ON ITU FOR SIMILAR EXACERBATION - 3/11/03	
PREVIOUSLY MRSA POSITIVE FROM TRACHEOSTOMY SITE.	

Principal Operation	**Operation Date**	**Operation Code**	**Operating Consultant**
MANAGED WITH REGULAR NEBULISERS, REDUCING DOSE STEROIDS AND ANTIBIOTICS			
Operation Text	Operation Date	Operation Code	Operating Consultant
PHYSIO INPUT WHILE IN PATIENT ON WARD 7.			

Further investigation including complications
NIL

Explanation given to patient
FULL

Doctor's name	DR. S THOMAS	**Doctor's Signature**
Doctor's grade	PRHO	
Read/Approved by		
Date	24/01/2004	

Named Nurse	**Discharge Officer's Signature**	**Patient's Signature**
Ward phone no		
Patient's weight Kg		

Special instructions
TO CONTINUE WITH 10MG ORAL STEROIDS FOR 7 DAYS ONLY AND THEN STOP.

Follow Up
WELL ON DISCHARGE. KEEN FOR HOME