

Strengths and weaknesses of electronic referral:

comparison of data content and clinical value of electronic and paper referrals in dermatology

Lindsay J Shaw and David AR de Berker

ABSTRACT

One hundred and thirty-one electronic referrals and 129 paper referrals were reviewed and their content analysed. Four items of demographic data were better recorded in the electronic referrals. Three items of clinical data were significantly better recorded in the paper referrals. The mean global clinical score for clinical relevance was greater for paper referrals than electronic referrals. This study illustrates the strength of electronic referrals for communicating demographic data and their weakness when revealing what is wrong with the patient.

Keywords

electronic referral; hospital referrals; informatics.

INTRODUCTION

The implementation of Choose and Book (<http://www.chooseandbook.nhs.uk>) for all hospital appointments and admissions is ongoing. Electronic booking was introduced to support this and the National Programme for Information Technology includes electronic booking as one of its key programmes.¹ Published data exists which examines the adequacy and appropriateness of GP referral letters,²⁻⁴ however, it does not address the clinical implications of this change. The Bristol Dermatology Centre receives a proportion of its referrals electronically and therefore, the aim of the study was to compare the quality of the content of electronic and paper referrals in terms of demographic data and clinical information.

METHOD

Each letter was read by one of two clinicians and scored according to a standard data set. The data set was piloted to confirm agreement between the two observers' scores. The observers reviewed the same mixture of electronic and paper referrals to the Bristol Dermatology Centre. The data set contained demographic details and details of the complaint. The lesion data set was made up of a list of items to be covered by an ideal referral letter (proposed diagnosis, medications, duration, symptoms, site, size, change in size, and a comment on possible malignancy). The non-lesion data set included the same demographic data but also included a search for comments on distribution, current treatment, treatment tried, and response to treatment. The number of referrals containing each of the data items was then calculated and expressed as a figure and as a percentage. In addition, a subjective global score was assigned to each letter reflecting its overall usefulness in facilitating triage (0 = no help, 1 = some detail but inadequate, 2 = poor detail but some priority attributable, 3 = fairly good/reasonable assessment possible, 4 = all relevant detail present and triage easy). Excel statistics package was used for analysis of the data set (χ^2 test) and the mean global score (Mann-Whitney test).

LJ Shaw, BSc, MRCP, MRCPH, dermatology specialist registrar; DAR de Berker, MRCP, consultant dermatologist and honorary senior lecturer, Bristol Dermatology centre, Bristol.

Address for correspondence

Dr Lindsay Shaw, Bristol Dermatology Centre, Bristol Royal Infirmary, Bristol, BS2 8HW.
E-mail: lindsay.shaw@ubht.swest.nhs.uk

Submitted: 23 May 2005; Editor's response: 3 December 2005; final acceptance: 4 July 2006.

©British Journal of General Practice 2007; 57: 223-224.

How this fits in

This study shows that electronic referral systems risk failing to communicate the clinical question and context when the GP is responsible for data entry. This may in turn lead to mistaken rejection of the referral through guidelines on managing service demand or inappropriate triage and delays for the patient.

RESULTS

One hundred and thirty-one electronic referrals and 129 paper referrals were made (141 females and 119 males, mean age = 47 years, range = 15–93 years) describing 97 lesions and 163 non-lesions. The percentage of data present in each category and mean global clinical score were calculated. The results of this and the statistical analysis are represented in Tables 1 and 2. There was no significant difference between electronic and paper referrals for basic demographic data (name, date of birth, and address). Electronic referrals were better at recording hospital or NHS number, a current prescription list, and the patient's phone number than the paper referrals. For

lesions, electronic and paper referrals performed similarly when communicating facts about the duration of the problem and site of the lesion, but paper referrals were significantly better at recording the lesion's size and whether or not there was concern about malignancy. Electronic referrals for non-lesions (mainly rashes) were significantly deficient with respect to details of symptoms, current treatment, past treatment, and a proposed diagnosis. The mean global clinical score enabling triage was greater for paper referrals than electronic referrals for rashes.

DISCUSSION

The government's *NHS plan* has a number of targets specific to booking including electronic pre-booking of all outpatient appointments and inpatient admissions.¹ There are potential benefits to electronic referral in terms of speed and incorporation of patient data held on GP computer systems. This small descriptive study suggests that there are differences between the letters that are generated in paper or electronic format. Elements of the referral that required the GP to actively communicate the patient's problem were sometimes poor in the electronic referrals. It may be that this reflects intrinsic differences between the GPs who chose to refer electronically and those who did not. There may be inherent problems with the referral proforma which discourage longer passages of text. The difference may also reflect who undertakes the clerical component of the referral. Many GPs perform the entire e-referral process themselves, whereas paper referrals are more likely to be dictated. There is pressure upon GPs to hasten the referral process with a looming stipulation that all referrals should be made within 24 hours of the GP consultation. This study highlights a risk that GPs will achieve the target of rapid referral at the cost of including a relevant and thoughtful assessment of the patient. Therefore, undue priority of the electronic process over the clinical one may compromise understanding of patients' problems and their management.

Competing interests

The authors have stated that there are none.

REFERENCES

1. NHS Modernisation Agency. *The NHS plan: a plan for investment. A plan for reform.* <http://www.nhsia.nhs.uk/nhsplan/> (accessed 31 Jan 2007).
2. Jiwa M, Burr J. GP letter writing in colorectal cancer: a qualitative study. *Curr Med Res Opin* 2002; **18**(6): 342–346.
3. Burbach FR, Harding S. GP referral letters to a community mental health team: an analysis of the quality and quantity of information. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 1997; **10**(2–3): 67–72.
4. Basarab T, Munn SE, Jones RR. Diagnostic accuracy and appropriateness of general practitioner referrals to a dermatology out-patient clinic. *Br J Dermatol* 1996; **135**(1): 70–73.

Table 1. Demographic data.

	Electronic n (%)	Paper n (%)	P-value
Date of birth	131 (100)	128 (99)	0.500
Address	131 (100)	125 (99)	0.059
Phone number	118 (90)	98 (76)	0.002
NHS/hospital number	129 (98)	111 (86)	<0.001
Medication	128 (97)	63 (49)	<0.001
Mean global score	2.63	2.82	0.002

Table 2. Clinical data.

	Electronic n (%)	Paper n (%)	P-value
Lesions			
Proposed diagnosis	28 (65)	39 (72)	0.452
Duration	22 (51)	34 (63)	0.234
Site	41 (95)	54 (100)	0.194
Size	7 (16)	21 (39)	0.015
Change in size	16 (37)	22 (41)	0.835
Symptoms	6 (14)	11 (20)	0.409
Benign/malignant	19 (44)	36 (67)	0.026
Mean global score	2.70	2.83	0.213
Non-lesions			
Proposed diagnosis	53 (60)	56 (75)	0.051
Duration	55 (63)	47 (63)	0.983
Distribution	74 (84)	65 (87)	0.644
Symptoms	38 (43)	47 (63)	0.013
Current treatment	34 (39)	51 (68)	<0.001
Treatment tried	45 (51)	50 (67)	0.045
Response to treatment	52 (59)	54 (72)	0.085
Mean global score	2.56	2.8	0.018