Information in practice

Guidelines in general practice: the new Tower of Babel?

Arthur Hibble, David Kanka, David Pencheon, Fiona Pooles

Editorial by Muir Gray

General Practice Office, NHS Executive Anglia and Oxford, Fulbourn Hospital, Cambridge CB1 5RB
Arthur Hibble, *acting director general practice postgraduate education*
Fiona Pooles, *research nurse*

Cambridge and Huntingdon Health Authority, Fulbourn Hospital, Cambridge CB1 5EF
David Kanka, *consultant in public health medicine*

Institute of Public Health, University Forvie Site, Cambridge CB2 2SR
David Pencheon, *consultant in public health medicine*

Correspondence to: Dr Hibble ahibble@angliagp.org.uk

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There is anecdotal evidence that general practitioners are being flooded with guidelines. We set out to quantify this by conducting a survey of all guidelines retained in general practices in the Cambridge and Huntingdon Health Authority.

Methods and results

FP visited 22 urban and rural general practices, a sample of the 65 practices in the authority, and asked them to produce copies of all guidelines retained for use. Guidelines were defined as any written material used by a doctor or nurse in primary care to assist decision making in relation to health care,[1] excluding medical textbooks and electronic databases.

We found 855 different guidelines—a pile 68 cm high weighing 28 kg (see fig). There were 243 single page and 195 two page guidelines. There were, however, 160 guidelines that were more than 10 pages long, including 25 presented as booklets or large folders. About 60% of the guidelines had been produced locally, of which 50% had been produced by local trusts and 30% by general practitioners. The remaining 40% were produced nationally. The pharmaceutical industry and the local health authority produced only 31 (4%) and 32 (4%) of the guidelines respectively.

We found that 38% of all the guidelines collected were undated. The dated guidelines suggest an exponential rise in guideline production since 1989: eight guidelines were published in 1990, compared with 73 in 1995 and 138 in 1996. We identified 57 guidelines produced in the first third of 1997 alone.

Guidelines on clinical or disease management accounted for 75% of the total. Half of the remaining guidelines related to referral pathways. Guidelines produced in general practice were almost exclusively clinical, whereas nearly half of those produced by trusts described referral pathways.

Comment

General practitioners manage 90% of presenting problems without referral elsewhere,[2] and they require information to help manage difficult or complex decisions. The mass of paper we collected represents a large amount of information, but it is in an unmanageable form that does little to aid decision making. Information must not be hidden in a load of paper but should be readily accessible and easy to use.

Furthermore, our survey suggests that this unmanageable mass of paper is growing at an ever increasing rate. This exponential rise could be explained by efficient culling of older guidelines, but we consider this to be unlikely. An incidence survey to complement our prevalence survey would clarify this.

Guidelines have been shown to change clinical practice and improve patient outcome.[3] This achievement, however, relies on various factors including the scientific validity of the guidelines and a dissemination strategy that promotes compliance.[4] The issue of accrediting or “kite marking” guidelines for general practice for relevance, validity (evidence base), and usefulness is essential but potentially inefficient. It could be made much easier by requiring that guidelines state explicitly the evidence base from which they were drawn and their author, sponsor, date of production, and date for review. This would leave users free to draw their own conclusions.

The issue of making information easily accessible and usable at the point of clinical contact indicates an

Pile of 855 guidelines in general practices in the Cambridge and Huntingdon Health Authority electronic medium. This medium is well suited to being searched, updated, and copied. We are currently exploring this option locally.[5] Any electronic method of dissemination will require careful management and will in itself only be a further tool to aid decision making.

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1 Field MJ, Lohr KN, eds. *Guidelines for clinical practice. From development to use.* Washington, DC: Institute of Medicine, National Academy Press, 1992.
2 Fry J. *General practice: the facts.* Oxford: Radcliffe Medical Press, 1993.
3 Grimshaw J, Russell IT. Effect of clinical guidelines on medical practice: a systematic review of rigorous evaluations. *Lancet* 1993;342:1317-22.
4 Effective Health Care. *Implementing clinical practice guidelines: can guidelines be used to improve clinical practice?* Leeds: Nuffield Institute for Health, University of Leeds; College for Health Economics and the NHS Centre for Reviews and Dissemination, University of York; Research Unit, Royal College of Physicians, 1994. (Bulletin No 8.)
5 WAX home page. Medical Informatics Unit, University of Cambridge. URL: http://www.medinfo.cam.ac.uk/wax.

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Legibility of doctors' handwriting: quantitative comparative study

Ronan Lyons, Christopher Payne, Michael McCabe, Colin Fielder

Concern has been expressed that poor legibility of doctors' handwriting may lead to prescription errors[1] and problems with referral letters.[2] Using computer technology to assess handwriting in an objective manner, we compared doctors' handwriting with that of administrative staff and other healthcare professionals in a Welsh health district.

Subjects, methods, and results

We contacted the staff in three main settings—the health authority headquarters, an accident and emergency department, and various departments in another hospital—and asked them to complete a form that contained boxes for the respondent's name, the 26 letters of the alphabet, and the digits 0-9. They were told that examples of handwriting were needed to test computer software for optical character recognition and were asked to write as neatly as possible. All 92 staff present in the three settings were asked to participate, and none refused. We analysed their responses with Teleform, a software package that allows handwritten replies on standard forms to be scanned and translated into text for computer analysis.[3] Any unrecognised characters are highlighted, and an error score is generated.

For the analysis, the staff were divided into three groups: doctors, nurses plus other medical professions, and administrative staff. We collated the results with the SPSS statistical program. As the error scores were not normally distributed, we used median values when comparing each group and used the Kruskal-Wallis or Mann-Whitney U test to test any observed differences for significance. In order to control for possible confounding we examined the effects of sex, setting, and age separately.

The table shows the median legibility error score for each professional group. Numeric legibility was similar for all groups and not considered further. For letters there was a significant difference between the groups (P = 0.006). The doctors had a higher median score compared with the other two groups individually (P = 0.01 for nurses plus other medical professions, P = 0.005 for administrative staff) or combined (P = 0.001). Analysis of female respondents alone revealed a similar pattern, with the doctors having a higher median error score than the other two groups (P = 0.032 for nurses plus other medical professions, P = 0.09 for administrative staff, P = 0.036 for the groups combined).

The doctors had a slightly higher median age (37.5 years) than did the other two groups (33.0 years and 31.5 years respectively), but this difference was not significant (P = 0.78), nor was there any significant effect of age on legibility for all respondents or for doctors alone. The doctors in each of the three main settings—health authority headquarters, accident and emergency department, and departments in another hospital—had similar median error scores (7.0, 7.0, and 8.0 respectively, P = 0.51).

Comment

This study suggests that doctors, even when asked to be as neat as possible, produce handwriting that is worse than that of other professions. This provides supportive evidence for the commonly held belief that the legibility of doctors' handwriting is unusually poor. A small prospective study in the United States reported no difference between the legibility of doctors' handwriting and that of other healthcare professionals,[4] but this study used a subjective assessment of readability and the comparison group was confined to senior non-medical staff.

A surprising finding of our study is that the poor legibility was confined to letters of the alphabet rather than numbers. This may reflect the importance attached by doctors to the legibility of drug doses.

Median legibility error score of each occupational group

	Median error score (interquartile range)			Difference (P value)	
	Doctors	Nurses and other medical professions	Administrative staff	Overall	Doctors *v* rest
All subjects:	(n=38)	(n=32)	(n=22)		
Letters of alphabet*	7 (0-10)	3 (1-6)	4 (2-5)	0.006	0.001
Numerals†	1 (0-1)	1 (0-2)	0 (0-1)	0.15	0.60
Women only:	(n=13)	(n=28)	(n=16)		
Letters of alphabet*	6 (3-10)	3 (1-6)	3 (1-5)	0.10	0.036
Numerals†	1 (0-1)	1 (0-1)	0 (0-1)	0.29	0.82

*Maximum possible error score=26.
†Maximum possible error score=10.

Department of Public Health, Iechyd Morgannwg Health, Swansea SA1 1LT
Ronan Lyons, *consultant*
Christopher Payne, *specialist registrar*
Accident and Emergency Department, Morriston Hospital NHS Trust, Swansea SA6 6NL
Michael McCabe, *consultant*
Department of Otolaryngology, Swansea NHS Trust, Singleton Hospital, Swansea SA2 8QA
Colin Fielder, *consultant*
Correspondence to: Dr Payne chris_payne@compuserve.com

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