

	Newspapers			Consent forms			p Value
	Range	Mean	95% Confidence interval	Range	Mean	95% Confidence interval	
Words	128-928	447	311 to 638	163-1124	386	336 to 436	NS
Characters	592-4616	2288	1453 to 3123	719-5302	1796	1562 to 2029	NS
Paragraphs	4-21	12	8.5 to 16	2-19	6	5.1 to 7.02	0.004
Sentences	10-48	28	20 to 36	6-51	17	15.5 to 20	0.019
Sentences per paragraph	1.1-7.5	2.8	1.8 to 4.3	1.1-11	3.5	2.9 to 4.1	NS
Words per sentence	11.4-20.8	16.5	14.3 to 18.6	14-28	21.9	21 to 22	<0.0001
Characters per word	4.3-5.1	4.8	4.6 to 4.9	4.1-5.1	4.6	4.5 to 4.7	NS
Flesch reading ease*	39.6-71	57.5	51 to 64	30-72	52.2	49.6 to 54.8	NS
Flesch-Kincaid index†	6.5-11.8	9.27	8.2 to 10.4	8.1-15.3	11.21	10.7 to 11.7	0.003
Gunning fog index†	9.2-14.3	11.9	10.7 to 13.1	10-17.6	13.7	13.1 to 14.2	0.008

*Lower score indicates harder to read. †Higher score indicates harder to read.

(table). There was no significant difference in the numbers of words and characters between the consent forms and the newspaper editorials. Consent forms, however, had significantly fewer paragraphs and sentences. This was reflected in the readability scores. Consent forms were significantly more difficult to read than newspaper editorials when assessed by the Flesch-Kincaid and Gunning fog indices.

Compared with the mean values for the three most widely read newspapers, 46 consent forms had more sentences per paragraph and all the consent forms had longer sentences. The number of characters per word in the consent forms was similar to the mean for the three newspapers. Forty eight consent forms were

more difficult to read than the three newspapers (as shown by the mean value) according to the Flesch-Kincaid index, 45 according to the the Gunning fog index, and 37 according to the Flesch reading ease.

Comment

Good clinical practice requires that a patient's informed consent is obtained before that person is entered into a clinical trial.³ This demands clear oral and written communication between the doctor and patient. Consent forms in this study were more difficult to read than newspaper editorials. Poor readability was caused by the use of long paragraphs and long sentences, not by the excessive use of long words. This study supports the first of Gunning's 10 principles of clear writing—"Keep sentences short."¹ If we are to fulfil our obligations the readability of consent forms must be improved. These data suggest that shorter sentences would help make consent forms easier to read.

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- 1 Gunning R. *The technique of clear writing*. Rev ed. New York: McGraw-Hill, 1971.
- 2 Joint Industry Committee for National Readership Surveys. *National readership survey; July-Dec 1991*. London: JICNRS, 1992.
- 3 Committee of Proprietary Medicinal Products. Working Party on the Efficacy of Medicinal Products. *Good clinical practice for trials on medicinal products in the European Community*. Brussels: CPMP, 1991. (111/3976/88-EN.)

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Should general practitioners have access to paediatric cardiologists?

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Source of referrals to paediatric cardiology clinic

Source	No
Community: General practitioner	129
Community medical officer	17
Paediatrician	38
Total	184

The prevalence of congenital heart disease in the population approaches 1%, but many children are found to have innocent heart murmurs.¹ We sought to establish the reasons for referral to a paediatric cardiology outpatient clinic and whether there was a case for general practitioners to continue to have direct access to the service.

Patients, methods, and results

The case notes of all new patients attending a paediatric cardiology outpatient clinic were reviewed. The clinic was not at a tertiary referral centre. General practitioners who referred patients worked mainly in inner city and suburban practices in Leeds. Chest radiography, electrocardiography, and echocardiography with Doppler studies were available in the clinic.

New patients made up 54% of all patients seen over the 13 months of the study. The table shows the source of these referrals. Of the 184 new patients, 167 were referred with an asymptomatic murmur, 15 were referred to exclude familial cardiac disease or cardiac manifestations of systemic disease, and only two were referred with symptoms (tachycardia). Altogether 142 patients were found to have either an innocent murmur or a normal heart on examination. Fourteen had a ventricular septal defect, nine pulmonary stenosis, four ductus arteriosus, two arrhythmia, and 13 more complex congenital heart disease.

Of the 129 referrals from general practitioners, 126

were made because of an asymptomatic murmur and the remainder because of an irregular heart rate. Fourteen patients (11%) were found to have a structural abnormality or an important arrhythmia. Seven had a ventricular septal defect: one aortic stenosis, one atrial septal defect, one ductus arteriosus, two mitral valve prolapse, and two supraventricular tachycardia. The general practitioners offered a diagnosis in 43 cases (33%) and were correct in 36 (84%). When the diagnosis was incorrect there were no serious implications. An innocent murmur had been diagnosed in three patients, who were found to have a ventricular septal defect, a mitral valve prolapse, and an aortic stenosis. Four patients referred with possible structural abnormalities were found to have innocent murmurs.

Referrals from paediatricians made up 21% of new patients seen. All these patients were referred with murmurs. Twenty (53%) had a structural cardiac abnormality. A diagnosis was offered in 27 (71%) of the 38 cases and was correct in 12 (44%). Again, incorrect diagnosis had no serious implications.

One third of all new patients attending the clinic had an investigation. Chest radiography and electrocardiography were performed in 55 patients and echocardiography in 72. For all new patients referred the median interval between referral and consultation was 27 (range 0-76) days. For referrals from general practitioners the median interval was 29 (7-64) days. This delay is acceptable for non-urgent referrals and compares favourably with waiting lists for medical and surgical paediatric outpatient clinics in this hospital during the study.

Comment

The pathological yield of 11% among referrals made by general practitioners seems to support the case for general practitioners having direct access to a paediatric cardiology service. Although the general practitioners made a tentative diagnosis for only one third of their referrals, it was correct in 84% of cases. These findings

suggest that general practitioners are more capable of discriminating mild disease from normality than they admit to in a referral letter.

Only one third of the children had an investigation. This is contrary to suggestions that investigation of every heart murmur is mandatory. In fact, the diagnosis of quiet asymptomatic murmurs is unlikely to be greatly helped by chest radiography or electrocardiography, and echocardiography without Doppler

studies is not sensitive in discriminating mild disease from normal anatomy.²

- 1 Newburger JW, Rosenthal A, Williams RG, Fellows K, Miettinen OS. Non invasive tests in the initial evaluation of heart murmurs in children. *N Engl J Med* 1983;308:61-4.
- 2 Wilson N. The use of doppler echocardiography in congenital heart disease. In: David TJ, ed. *Recent advances in paediatrics*. Vol 8. Edinburgh: Churchill Livingstone, 1986:87-101.

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Driving and diabetes mellitus

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People with diabetes mellitus are obliged under the Road Traffic Act 1974 to report their diabetes to the licensing authority and, if eligible, are issued a driving licence valid for up to three years. Although one study in Oklahoma found the accident rate for male diabetic drivers to be slightly higher than that for the general population,¹ another in Western Australia found no overall difference in the rates of admission to hospital after road accidents between those with diabetes and the general population.² Studies in Edinburgh in the early 1980s showed that just over half of people with insulin dependent diabetes and about a quarter of people with non-insulin dependent diabetes reported having informed the licensing authority or their motor insurers of their diabetes.^{3,4} I attempted to find whether the situation had changed since 1982.

Subjects, methods, and results

In autumn 1991 I sent a standardised postal questionnaire to the total known diabetic population of four randomly selected general practices in one health district in Yorkshire (312 people). Among other questions the people were asked whether they drove a motor vehicle, whether they had informed the Driver and Vehicle Licensing Agency or their motor insurers of their diabetes, and the renewal date of their driving licence. A total of 287 completed questionnaires (92%) were returned by 155 men and 132 women (median age 67 (interquartile range 57-77)), of whom 70 reported receiving insulin. The respondents' age, sex, insulin status, and duration of diabetes were not significantly different from those found in a previous survey.⁵

Drivers who reported having notified licensing authority and motor insurers of diabetes by age group and renewal date of licence. Figures are numbers (percentages)

Whether notification given	Age < 67 (n=92)		All drivers*	Age ≥ 67 (n=39)	All ages (n=131)
	Renewal date of licence				
	< 3 Years (n=51)	> 3 Years (n=30)			
To licensing authority:					
Yes	48 (94)	13 (43)	68 (74)	32 (82)	100 (76)
No	3 (6)	15 (50)	22 (24)	6 (15)	28 (21)
Don't know		2 (7)	2 (2)	1 (3)	3 (2)
To motor insurers:					
Yes	46 (90)	17 (57)	69 (75)	32 (82)	101 (77)
No	3 (6)	12 (40)	20 (22)	6 (15)	26 (20)
Don't know	2 (4)	1 (3)	3 (3)	1 (3)	4 (3)

*Includes 11 drivers aged < 67 who did not give renewal date of licence.

Of the 131 respondents who reported driving, 100 claimed to have informed the licensing authority of their diabetes (table). Of the 92 drivers aged under 67, 11 did not give renewal dates for their licences but answered all the other questions; only 51 of the remaining 81 gave renewal dates for their licences that were within three years. Drivers receiving insulin were significantly more likely to report having informed the licensing authority of their diabetes than drivers not receiving insulin ($\chi^2=5.37$, $p=0.0205$). One hundred and one drivers reported having informed their motor insurers of their diabetes. Again, drivers receiving insulin were significantly more likely to report having informed their insurers than other diabetic drivers ($\chi^2=9.14$, $p=0.0025$).

Comment

I have no reason to believe that the people I surveyed differed greatly from the general diabetic population of the United Kingdom. I found that about a fifth of all diabetic drivers reported not informing the Driver and Vehicle Licensing Agency or their motor insurers of their diabetes. Of the drivers aged below 67 who claimed to have informed the licensing authority, a fifth gave renewal dates for their licences that were more than three years in the future and hence incompatible with them having done so. The reasons why many diabetic drivers fail to notify the licensing authority or their motor insurers are unclear, but ignorance of the legal requirements and fear of having their driving licence taken away may be possible explanations. Evidence supporting legal discrimination against drivers with diabetes mellitus is unclear; this possibly explains the apparent lack of official concern about underreporting of diabetes mellitus by non-vocational drivers.

Better evidence is required to determine what additional risk diabetic drivers pose compared with other drivers. Meanwhile those caring for people with diabetes should ensure that diabetic drivers are aware of the possible consequences of not informing the licensing authority and motor insurers of their diabetes.

- 1 Davis TG, Wehling EH, Carpenter RE. Oklahoma's medically restricted drivers—a study of selected medical conditions. *Oklahoma State Medical Association Journal* 1973;66:322-7.
- 2 DeKlerk NH, Armstrong BK. Admission to hospital for road trauma in patients with diabetes mellitus. *J Epidemiol Community Health* 1983;37:232-7.
- 3 Frier BM, Steel JM, Matthews DM, Duncan LJP. Driving and insulin-dependent diabetes. *Lancet* 1980;i:1232-4.
- 4 Steel JM, Young RJ, Frier BM, Duncan LJP. Driving and insulin-independent diabetes. *Lancet* 1981;ii:354-6.
- 5 Williams DDR, Munroe C, Hospedales CJ, Greenwood RH. A three-year evaluation of the quality of diabetes care in the Norwich community care scheme. *Diabetic Med* 1990;7:74-9.

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