

# Work patterns of general practitioners before and after the introduction of the 1990 contract

RUTH CHAMBERS

JOHN BELCHER

**SUMMARY.** A questionnaire survey was undertaken to examine the work patterns of general practitioners before and after the introduction of the 1990 contract. A total of 408 and 697 general practitioners responded to the questionnaire in 1989 and 1991, respectively (response rates of 47% and 82%). In 1991 general practitioners reported spending significantly more evenings on paperwork than in 1989 and significantly more reported being exhausted or stressed at the end of five or more working days. General practitioners were significantly less likely to work four or more sessions per week outside the practice in 1991 than in 1989. There was no difference between 1989 and 1991 in the number of surgeries carried out per week or the number of nights spent on call in a month. In 1991 there was no correlation between the Jarman index allocated to a practice principal and the numbers of surgeries per week, sessions worked outside the practice per week, nights on call per month, weekdays exhausted or stressed, or evenings each week spent on paperwork. Older doctors in 1991 were significantly more likely to work 12 or more nights on call per month, to spend more time doing paperwork in the evenings and more likely to report exhaustion than younger doctors. Women doctors in 1991 were significantly more likely to report doing 10 or more surgeries per week than their men colleagues.

It has become more common for general practitioners to complete paperwork at home and report exhaustion or stress since the introduction of the 1990 contract.

**Keywords:** patterns of work; workload; conditions of service.

## Introduction

THE National Health Service and community care act, 1990 ratified the introduction of a new contract for general practitioners. The new regulations created systems of payment based on achievement. They also promoted additional general practice clinics and services, which involved time and resource costs to set up and run, together with associated paperwork. Prescribing budgets were established, as were contracts for the hospital care of practice patients. Practices seeking fundholding status had to determine their running costs and prepare for the change. Computerization of general practices continued to be actively encouraged and medical audit became compulsory for all practices in April 1992. Management bodies such as district health authorities and family health services authorities increasingly sought general practitioners' advice and opinions.

These changes were widely expected to create extra pressure on the time and resources of general practitioners. The General

R Chambers, FRCGP, research fellow, Centre for Primary Health Care, University of Keele. J Belcher, BSc, MPhil, lecturer in statistics, Department of Mathematics, University of Keele.

Submitted: 24 April 1992; accepted: 25 November 1992.

© British Journal of General Practice, 1993, 43, 410-412.

Medical Services Committee commissioned a postal survey in summer 1990 to determine workload and levels of stress experienced by general practitioners working under the new contract.<sup>1</sup> Unfortunately the response rate to the survey was low.

Bain has studied the reactions of six practices throughout the United Kingdom to the new contract regulations and explored the opportunities and problems that have arisen.<sup>2</sup> He has described considerable upheavals as the practices have striven to accommodate an increased workload and changing emphasis from patient care to population-based care and more efficient management procedures. Hannay and colleagues have demonstrated an increase in general practitioner workload since the introduction of the new contract owing to more patients being seen in clinics with no reduction in time spent per patient.<sup>3</sup>

The study reported here examined work patterns reported by a group of general practitioners in 1991, 12 months after the introduction of the new contract, and compared these results with the answers to the same questions completed by respondents in 1989. The aim of the study was to determine whether the new regulations had changed the amount of time spent on work outside the practice, on call or on paperwork at home and whether general practitioners were more likely to report feeling exhausted or stressed.

The Jarman index<sup>4</sup> is used as a deprivation indicator to ensure that general practitioners receive payment for increased workload in locally deprived areas, although its use is controversial.<sup>5</sup> The index includes measures of the local population's unemployment, overcrowding, mobility, young children, elderly people, single parents and ethnicity. This study also examined whether there was any association between the Jarman index allocated to practice principals and their work patterns in 1991.

## Method

An anonymous questionnaire asking about health, lifestyle, sickness absence, health care and work patterns was sent to all 850 general practitioners registered with Staffordshire Family Practitioner Committee in mid-1989. Reminders were sent to non-respondents six weeks later. The age and sex characteristics of non-respondents were calculated by subtracting the details of respondents from the initial register of 850 doctors.

A second questionnaire containing a range of questions selected from the initial questionnaire was sent to all of the 855 general practitioners registered with Staffordshire Family Health Services Authority in mid-1991. The 855 doctors excluded the 94 general practitioners who had retired from general practice or died in the intervening two year period and included the 99 new general practitioner principals. Doctors who retired during the two-year study period were not followed up as regards work pattern as the questions were inapplicable. In addition to the questions about work pattern included in 1989, the 1991 respondents were asked about the size of their partnership and whether they had responded to the 1989 questionnaire. The 1991 questionnaires were anonymous but had removable code numbers so that where the code number was not removed respondents could be identified and non-respondents and anonymous respondents sent two reminders. The code numbers were also used to establish the Jarman index for the practices of those respondents whose main family health services authority was Staffordshire.

The answers of respondents in 1989 and 1991 were compared,

as were those of general practitioners who replied in both 1989 and 1991 and those who had responded in 1991 only. Responses to questions not concerning work patterns have been reported elsewhere.<sup>6</sup>

An NCSS statistical package was used to determine significance, which was taken as  $P < 0.05$ . Categorical values were analysed using a chi square test and the hypothesis test was used to consider two proportions from independent groups. Spearman's non-parametric test was used to calculate correlations between Jarman indices and work patterns. The Armitage test on proportions was used to identify significant trends.<sup>7</sup>

## Results

A total of 408 doctors returned their questionnaire in 1989; 403 responded to questions about their working practices (response rate 47.4%). The age and sex characteristics of non-respondents were not significantly different from those of the respondents. In 1991, 704 doctors returned their completed questionnaire; 697 responded to questions about their working practices (response rate 81.5%). Of the respondents in 1991 319 reported that they had completed a similar questionnaire in 1989 while 246 were unsure. There were no significant differences in the age and sex characteristics of the respondents in 1989 and 1991 — mean age of all 408 respondents in 1989 43.4 years (standard deviation (SD) 9.9 years, range 28–73 years) and of all 704 respondents in 1991 43.5 years (SD 11.0 years, range 29–70 years); in 1989 80.6% of 407 respondents were men as were 81.2% of 693 in 1991. There were also no significant differences between those respondents who had answered questionnaires in both 1989 and 1991 and those who had only replied in 1991 in terms of age and sex, and the five areas of working practice studied.

The reported working practices of respondents in 1989 and 1991 are shown in Table 1. The reported number of evenings spent on paperwork in 1991 was significantly higher than in 1989, with 16.2% of doctors reporting at least one hour's paperwork on five or more evenings each week. In 1991 significantly more general practitioners reported feeling exhausted or stressed at the end of a working day on five or more weekdays. Significantly fewer general practitioners were working for four or more sessions outside the practice in 1991 than in 1989. There was a significant association between the number of evenings spent doing paperwork and feeling exhausted or stressed ( $\chi^2 = 108.3$ , 15 degrees of freedom,  $P < 0.001$ ).

Of 370 respondents in 1991 registered with Staffordshire as their main family health services authority, nine (2.4%) were allocated a Jarman index of  $-29.9$  to  $-20.0$  (highest deprivation score of respondents), 32.4%  $-19.9$  to  $0.0$ , 50.8%  $+0.1$  to  $+20.0$ , 11.9%  $+20.1$  to  $+30.0$  and 2.4%  $+30.1$  or more (most practices will be represented more than once as the values are for individual respondents). There was no correlation between Jarman indices and the number of surgeries per week (Spearman's non-parametric test ( $Sp$ ) = 0.0587), number of sessions worked outside the practice per week ( $Sp$  = 0.0650), number of nights on call per month ( $Sp$  = 0.0068), number of weekdays exhausted or stressed ( $Sp$  = 0.0484) or number of evenings each week spent on paperwork ( $Sp$  = 0.0524).

In 1991 older general practitioners were significantly more likely to spend more time doing paperwork in the evenings, report more exhaustion, work more than 12 nights on call per month and work in single-handed partnerships (Table 2). There were no significant differences between women and men general practitioners in 1991 except that women doctors were significantly more likely to report doing 10 or more surgeries per week — 90.8% of 109 women reported doing 10 or more surgeries versus 13.5% of 586 men ( $\chi^2$  with continuity correction factor = 284.5,  $P < 0.001$ ).

**Table 1.** Reported working practices of general practitioners in 1989 and 1991.

	% of respondents	
	1989	1991
<b>Number of surgeries per week</b>	(n = 402)	(n = 697)
≤5	5.2	3.9
6–9	66.4	70.3
10+	28.4	25.8
<b>Number of sessions outside practice per week</b>	(n = 403)	(n = 689)
0	44.7	48.9
1	20.8	21.5
2	16.4	17.0
3	6.9	6.0
4+	11.2	6.7*
<b>Number of evenings spent on paperwork per week<sup>a</sup></b>	(n = 397)	(n = 687)
0	9.1	8.2
1	21.4	16.2
2	27.2	30.0
3	18.9	16.9
4	10.6	12.7
5+	12.8	16.2***
<b>Number of weekdays exhausted or stressed at end of working day</b>	(n = 400)	(n = 686)
0	5.8	5.7
1	15.3	11.8
2	25.0	21.9
3	26.0	24.5
4	14.5	16.8
5	13.5	19.4*
<b>Number of nights on call per month</b>	(n = 402)	(n = 691)
0	11.9	9.4
1–4	17.2	16.1
5–12	58.0	59.2
13+	12.9	15.3

n = total number of respondents. <sup>a</sup>At least one hour of professional paperwork. \* $P < 0.05$  (hypothesis test for two proportions from independent groups). \*\*\* $\chi^2 = 54.0$ , 5 degrees of freedom,  $P < 0.001$ .

## Discussion

The questions on work patterns described here were part of a wide ranging questionnaire which also looked at health issues and so the questions concerning work were necessarily brief. The results of this study are thus less informative than the comprehensive report on general medical practitioners' workload<sup>8</sup> but provide an interesting progression of aspects of work patterns from 12 months before to 12 months after the introduction of the new contract regulations for general practitioners.

Despite the different response rates in 1989 and 1991 it seems valid to compare the two groups of respondents as the age and sex characteristics of the two groups were similar and general practitioners who responded to both questionnaires showed no significant differences from those who had only answered the 1991 questionnaire for age or sex or any of the five areas of working practice reported here.

The finding that significantly fewer general practitioners were working for four or more sessions outside the practice in 1991 than in 1989 may have been because of their increasing time commitment within the practice, or because the amount of part time work available to general practitioners in hospitals and with other agencies is diminishing. Despite there being no change

**Table 2.** Work patterns of general practitioners in 1991 by age.

	% of respondents aged:		
	25-39 years	40-49 years	50+ years
<b>Number of evenings spent on paperwork per week</b>	(n = 243)	(n = 227)	(n = 206)
≤2	58.0	55.1	49.5
3+	42.0	44.9	50.5*
<b>Number of weekdays exhausted</b>	(n = 244)	(n = 230)	(n = 201)
≤2	48.0	31.3	38.8
3+	52.0	68.7	61.2*
<b>Number of nights on call per month</b>	(n = 246)	(n = 228)	(n = 204)
0	9.8	5.3	13.7
1-4	17.9	16.2	14.2
5-12	63.4	58.3	53.9
13+	8.9	20.2	18.1***
<b>Number of practice partners</b>	(n = 245)	(n = 234)	(n = 204)
1	5.7	16.2	17.2**b
2	10.6	16.2	17.6
3	21.6	16.7	19.1
4	23.3	19.7	20.1
5+	38.8	31.2	26.0

n = total number of respondents. \*P<0.05 (Armitage test for increasing trend). \*\*P<0.01;  $\chi^2=21.66$ , 6 degrees of freedom;  $\chi^2=29.20$ , 12 df.

between 1989 and 1991 in the number of nights spent on call per month and the number of surgeries per week, and a reduction in outside sessions per week in the two year period, significantly more doctors reported exhaustion or stress at the end of five or more weekdays in 1991 than in 1989. This may be partly explained by the significant association between exhaustion or stress and the number of evenings spent on paperwork after the new contract was introduced. The increased reporting of exhaustion or stress and extra paperwork in 1991 suggest that future health problems are more likely. Standard mortality rates<sup>9</sup> are already high for doctors for suicide and alcohol related liver disease, and further pressures from work may contribute to maintaining these high figures.

The Jarman index for a practice principal showed no relation to any of the aspects of work measured in this study. A fuller workload survey would have included number of patient consultations in the surgery and at home, average consultation time and the sharing of work with ancillary and attached staff. Further detailed studies of workload might support the extra incentive payments established by the new contract regulations for general practitioners working in deprived areas according to their Jarman index score, but this study showed no evidence that general practitioner workload varied with degree of deprivation.

More doctors in the older age groups tended to practise as single-handed general practitioners and this may explain why a greater number of older doctors reported spending more nights on call and more evenings doing paperwork. The tendency of younger doctors to work in larger practices would result in a reduction in on-call commitment.

It was interesting to find that significantly more women general practitioners reported doing 10 or more surgeries per week than their male counterparts, while they reported the same number of sessions worked outside the practice and evenings spent on paperwork. The increased number of surgeries may be a result

of women general practitioners carrying out extra clinics more often than men. These are often held in the afternoons between morning and evening surgeries and respondents may be assumed to have interpreted the enquiry about frequency of surgeries to have included 'clinics' such as antenatal and child health sessions.

This study appears to support the popular belief that the new contract regulations for general practitioners have resulted in more paperwork and taken an increased toll on some general practitioners in terms of their self-reported feelings of stress or exhaustion.

## References

1. General Medical Services Committee. *National survey of workload and stress in general practitioners*. London: British Medical Association, 1990.
2. Bain J. General practices and the new contract. I. Reactions and impact. *BMJ* 1991; **302**: 1183-1186.
3. Hannay D, Usherwood T, Platts M. Workload of general practitioners before and after the new contract. *BMJ* 1992; **304**: 615-618.
4. Jarman B. Underprivileged areas: validation and distribution of scores. *BMJ* 1984; **289**: 1587-1592.
5. Campbell DA, Radford JM, Burton P. Unemployment rates: an alternative to the Jarman index? *BMJ* 1991; **303**: 705-755.
6. Chambers R, Belcher J. Comparison of the health and lifestyle of general practitioners and teachers. *Br J Gen Pract* 1993; **43**: 378-382.
7. Armitage P, Berry G. Components of chi square. In: *Statistical methods in medical research*. Edinburgh: Blackwell, 1985.
8. Department of Health and Social Security. *General medical practitioners' workload 1985/86*. London: HMSO, 1987.
9. Office of Population Censuses and Surveys. *Occupational mortality decennial supplement Great Britain 1979-80, 1982-83*. London: HMSO, 1986.

## Acknowledgements

R C would like to thank the North Staffordshire Medical Institute who have supported this project and West Midlands Regional Health Authority who have funded her research fellowship.

## Address for correspondence

Dr R Chambers, Ivy Cottage, The Outlanes, Stone, Staffordshire ST15 8UU.

## RCGP Publications PATIENTS AND DOCTORS

### Patients and their Doctors (Occasional Paper 8)

Cartwright and Anderson follow up their classic work on patients' views of their doctors. A useful source document on patient opinion. £3.00

### Doctors Talking to Patients

Byrne and Long's well known book was the first to illustrate the potential for using modern recording methods to analyse the problems of doctor-patient communication. £10.50

### To Heal or to Harm - The Prevention of Somatic Fixation in General Practice

Describes not only the theory of somatic fixation and how doctors, patients and others contribute to this, but also practical ways in which it can be prevented. £12.50

### The Longest Art

There have been few books about continuity of care in general practice but one of the first to describe it, not simply over years but over generations, was Dr Kenneth Lane. The College republishes it today in order to keep an important text in print, enabling this delightful story to be made available to GPs and trainees. £15.00

All the above can be obtained from the Sales Office, Royal College of General Practitioners, 14 Princes Gate, London SW7 1PU (Enquiries, Tel: 071-823 9698).