A comparison of workload and morbidity recording by partners in a group practice

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SUMMARY. A survey was carried out of one year's workload and morbidity recording by three partners in a semi-rural teaching practice. Despite an equal workload of patient contacts there were shown to be statistically significant differences between the partners in the number of return consultations, the sex and age of the patients seen, and in nine diagnostic groups. The statistically significant differences in the latter groups appear to have been caused by variations in policy for recalling patients and the different sex and age groups of the patients consulting the partners, not by diagnostic preferences. A lack of previous experience affected one group. The partners did not find the discussion of these differences to be threatening.

Introduction

THE workload of individual general practitioners has been studied on many occasions. However, lack of comprehensive knowledge about it has been emphasized by the Seventh Report of the Review Body (1977), and the medico-political importance of the subject has been discussed fully by Ball (1978).

Fry (1972, 1975, 1978) and Marsh and Kaim-Caudle (1976) have shown falling workload and called for a radical review of medical manpower, although they acknowledge the great differences between countries, areas, and even practices in the same area.

Buchan and Richardson (1973) and Richardson and colleagues (1973) examined the consultation and the various factors that influence it, such as the patient's sex, the doctor's age, and the morbidity recorded. Buchan and Richardson found a degree of homogeneity within practice groups but did not explore the intra-practice characteristics.

The morbidity of general practice has been examined nationally (OPCS *et al.*, 1974) and individually (Morrell, 1971), and many of these papers also give information about workload.

The Second National Morbidity Survey (OPCS *et al.*, 1974) analysed the morbidity of self-selected practices and found differences in many factors between practices, such as home visiting, but did not look at the differences in individual recording, although this information was provided to the participating practices (Curtis Jenkins, 1977).

Morrell (1971), in a survey of his own three-man practice, found differences in the morbidity recorded in patient-initiated and doctor-initiated consultations, and described two contrasting groups of diseases presented to general practice:

1. Diseases for which a large number of consultations were initiated by a large number of patients demanding an episodic type of medical care with a high diagnostic content.
2. Diseases for which a relatively small number of patients consulted with a high frequency, many of these consultations being initiated by the doctor.

Valentine (1975) comments on the great variations within certain disease groups in many morbidity surveys. He found a variation in the respiratory group from 32·6 per cent (Last and White, 1969) to 9·7 per cent in his own.

It is clear that variations in workload and morbidity recording are influenced by many factors: list size (Bridgstock, 1976), patient's sex (Moorhead, 1975), doctor's age (Richardson *et al.*, 1973; OPCS *et al.*, 1974), country of practice (Berber, 1974; Valentine, 1975; Gibson, 1977; Colditz and Elliott, 1978), areas of the same country (OPCS *et al.*, 1974; Fry, 1978), differing areas of the same practice (Hardman, 1965); but, what of partners in the same practice covering the same area?

Only Gibson (1977) seems even to have attempted to look at partner differences and Curtis Jenkins (1977) has called for more information on this topic because he feels that it is so threatening to the partners concerned. Only by open discussion of the differing workload and the factors that influence it can we learn to cope with this threat.

Aims

The aims of this study were to examine the workload and morbidity recording in our three-partner practice, to explore any differences between partners, and to see if they were correlated with the sex or age of the patient, a preferred diagnosis, or our previous clinical experience.

Method

The practice

The practice, founded in 1869, is a three-man partnership in a market town in rural Northumberland. It has been associated with the Northumbria (Newcastle) Vocational Training Scheme since it began in 1969 and has taken trainees regularly since. The total list size at the mid-point of the study was 7,216 (males 46·6 per cent and females 53·4 per cent). It has an elderly population, 18·4 per cent being over 65, and has an average social class distribution. Twenty per cent of the patients live over three miles from the practice in a rural area covering 200 square miles.

The partnership

The present partnership was formed in 1973. The senior partner (Dr A) holds a three-session appointment as Regional Adviser (Postgraduate Tutor) in General Practice at the University of Newcastle, and has a special interest in medical education. The middle partner (Dr B) has three clinical assistant sessions in geriatric medicine and a special interest in paediatrics. The junior partner (Dr C), formerly Dr A's trainee, is now an approved trainer with a special interest in family planning.

The three partners had a degree of experience before becoming principals which ranged from military service and formal assistantship to self-selected hospital posts and a formal three-year vocational training programme.

Practice management

The practice employs a practice manager/secretary, two full-time and three part-time receptionists, and has an attached district sister, a nurse midwife and a health visitor.

A full appointment system operates for all surgeries, antenatal clinic, cervical smear clinic, well baby clinic and family planning clinic, the last two clinics being started by Drs B and C three months before the survey. Surgeries for all partners are booked at a rate of three patients per 20 minutes and last for one and a half hours. Dr A provides 10 hours' surgery time per week, Drs B and C 11¼ hours per week.

New home visits are selected by patient request. All follow-up visits are done by the doctor concerned unless the patient was seen as an emergency for another partner and, similarly, with all the chronic visiting.

Although the partners do not keep individual lists, it is practice policy that patients should always see one doctor, but that does not need to be the doctor with whom they are registered. They are encouraged to see the same doctor through any single episode of illness. They are further encouraged in a new illness, if their own doctor is not available, to see one of the other partners or the trainee in the practice.

The survey

The survey was carried out during the year 1 March 1975 to 29 February 1976. The partners recorded every face-to-face patient contact (excluding telephone consultations and repeat prescriptions) by full name, date of birth, and diagnosis using the classification of morbidity recommended by the Second National Morbidity Survey (OPCS *et al.*, 1974). The partners discussed the use of this classification before the survey, after a pilot survey, and regularly from then on.

At each contact it was possible to record no diagnosis or multiple diagnoses.

An 'E' book provided by the Birmingham Research Unit of the Royal College of General Practitioners (Eimerl and Laidlaw, 1969) was used to record the diagnoses.

Each partner's workload figures were kept for new (patient-initiated) and return (doctor-initiated) surgery and home contacts by the practice secretary.

The survey was undertaken in order to examine trainee/principal differences (Carney, 1979), to provide essential morbidity data for educational purposes, as an aid to practice management planning, and as a basis for future research. This paper is another outcome.

Results

The results were analysed using a two-by-three contingency table for each group. With 18 differing groups it is possible that each of us would have one group with results significant at the $p < 0·05$ level, so only those categories which give $p < 0·01$ are considered.

Workload

The results for the practice as a whole show a nominal list size for each partner of 2,405. The total consultation rate was 3·8 patients per year: 2·7 at the surgery; 1·1 for domiciliary visits, including 0·45 for patient-initiated home visits.

The total workload figures for surgery and home consultations show the virtual equality of the partners' work (Table 1). However, these figures start to show differences when they are analysed.

The new/return ratio of house calls for each partner is similar but the same ratio applied to the surgery consultations shows that one partner (Dr B) asks only half as many patients to return for review, and that he sees more new patients in total than either of his partners.

Table 1. Comparison of consultations and home visits.

	Doctor	New	Return	New/return ratio	Total	Percentage
Consultations	A	3,415	1,464	1:0.4	4,879	*31.1*
	B	4,480	794	1:0.2*	5,274	*33.5*
	C	4,037	1,533	1:0.4	5,570	*35.4*
Total		11,932	3,791	1:0.3	15,723	*100*
Home visits	A	922	1,467	1:1.6	2,389	*33.0*
	B	902	1,534	1:1.7	2,436	*33.5*
	C	974	1,458	1:1.5	2,432	*33.5*
Total		2,798	4,459	1:1.6	7,257	*100*

*Significant difference $p < 0.001$.

Sex of patients

Dr B saw 46 per cent males, Dr A 38 per cent and Dr C 36 per cent ($p < 0{\cdot}001$) (Table 2).

If these are divided into diagnostic categories, Dr B sees fewer females in the endocrine, nervous system, and musculo-skeletal groups, and more males in the mental, circulatory, respiratory, digestive, skin, and accident groups.

Table 2. Comparison of total consultations by patient's sex.

Doctor	Male	Female	Total	Percentage Males	Females
A	2,206	3,659	5,865	*38*	*62*
B	2,723	3,181	5,904	*46**	*54*
C	2,041	3,685	5,726	*36*	*64*

*Significant difference $p < 0.001$.

Age of patients

The results of a quarter sample of the survey for the age groups under 15 and over 65 are shown in Table 3. Dr A sees significantly fewer under 15s and Dr B significantly more in this age group. However, both these figures are strongly influenced by the respiratory and accident groups.

There were no significant differences in the figures for the over 65s. However, Dr A saw fewer over 65s in the psychiatric category and Dr C saw more elderly in the musculo-skeletal group.

Table 3. Comparison of total consultations by patient's age.

Age	Dr A	Dr B	Dr C	Total
Under 15	198*	349*	230	777
Over 65	256	273	238	767

*Statistically significant $p < 0.001$.

Morbidity

There are nine diagnostic groups in which a partner recorded a significantly different number of consultations (Tables 4 and 5). Dr A recorded less psychiatric illness and more diseases of the nervous system.

Psychiatric. He recorded fewer female patients and fewer return consultations. No differences were shown for psychotic illnesses either in the sex of the patients or by the three partners. However, Dr A recorded only half the number of consultations, new and return, of female patients in the diagnostic categories anxiety/neurosis and depressive neurosis than either of his partners.

Nervous system. In contrast, Dr A recorded more female consultations, both new and return, than his partners in this disease group. It was not diseases of the cerebro-vascular system but diseases of eye (cataracts/glaucoma), ear (Menière's disease/deafness), and trigeminal neuralgia and brachial neuritis that showed

Table 4. Comparison of percentage distribution of consultations.

Classification of morbidity	Dr A	Dr B	Dr C	Total practice	Statistical significance
1. Infective	4.0	3.7	4.8	4.1	NS
2. Neoplasms	1.5	1.4	0.6*	1.0	$p<0.001$
3. Endocrine	5.7	2.9*	5.3	4.1	$p<0.001$
4. Blood	1.7	1.3	1.4	1.4	NS
5. Mental	11.0*	14.7*	15.3	12.9	$p<0.001$
6. Nervous system	12.3*	9.3	9.1	10.7	$p<0.001$
7. Circulatory	10.8	10.1	9.9	9.6	NS
8. Respiratory	13.1	16.8*	13.7	15.6	$p<0.001$
9. Digestive	4.9	6.3*	4.8	5.5	$p<0.001$
10. Genito-urinary	5.5	5.1	4.6	5.3	NS
11. Pregnancy	1.4	1.3	1.1	1.2	NS
12. Skin	6.4	7.3	4.8*	6.6	$p<0.001$
13. Musculo-skeletal	10.8	8.4	13.5*	10.0	$p<0.001$
14. Congenital	0.1	0.1	0.0	0.1	NS
15. Perinatal	0	0	0	0	NS
16. Ill defined	0.0	0	0.9	0.3	NS
17. Accident	4.9	6.3*	4.7	5.9	$p<0.001$
18. Prophylactic	6.4	5.2	5.5	5.6	NS

*$p<0.001$ for χ^2 is 13.8. NS = Not significant.

Table 5. Factors influencing the diagnostic groups.

Diagnostic groups	Partner with significantly different recording	All consultations	Single consultation episodes	Return consultations	Male patients	Female patients	Disease categories
Mental	A	—	0	—	0	—	Psychotic equal <Neurotic diagnoses
Nervous system	A	+	0	+	0	+	
Endocrine/allergic	B	—	0	—	0	—	Allergic equal <Endocrine
Respiratory	B	+	+	0	+	+	>>Upper respiratory infection
Digestive	B	+	+	0	+	0	>Peptic ulcer >Diarrhoea and vomiting
Accidents	B	+	+	0	+	0	>Sprains and strains
Skin	C	—	0	0	—	—	>>Unspecified diagnoses <All specific diagnoses
Neoplasms	C	—	0	0	—	—	<Episodes <Terminal care
Musculo-skeletal	C	+	0	+	0	+	>>Osteo-arthrosis

marked differences between partners.

Dr B recorded less endocrine disease and more diseases of the respiratory system, digestive system, and accidents.

Endocrine and allergic. The hay fever, asthma, and allergy consultations were equal for all partners. However, only a small group of patients consulted Dr B for diabetes, thyroid disease, or gout, resulting in far fewer female and return consultations in this group for this partner.

Respiratory system. In this group Dr B recorded more patients, males and females equally, the increase being wholly attributable to upper respiratory tract infections. The under 15 age group significantly affects this group. He recorded less bronchitis and sinusitis.

Digestive system. For Dr B the digestive group shows a strong predominance of males both with peptic ulceration and with acute diarrhoea and vomiting. The number of females is the same as his partners' but again acute diarrhoea and vomiting feature as a common diagnosis. This diagnosis caused a high number of single consultations.

Accidents. Similarly, Dr B recorded far more male consultations in this group and many single consultations, especially for sprains, strains and superficial injuries.

Dr C recorded less dermatological and neoplastic disease and more musculo-skeletal disease.

Dermatological diseases. In diseases of the skin Dr C recorded fewer consultations for male and female patients and made fewer diagnoses. He used the imprecisely diagnosed category twice as often as his partners and made fewer diagnoses in all the defined diagnostic labels in this group.

Neoplastic disease. Dr C recorded fewer episodes (13) compared with Dr A (43) and Dr B (28). Dr C had four terminally ill patients who died at home compared with eight recorded by both his partners.

Musculo-skeletal diseases. Dr C recorded far more arthritic diseases, especially osteoarthritis, but also cervical spondylosis and rheumatoid arthritis. He recorded far more female and return consultations.

The age and sex of the patient, single consultations, and return consultations are all identifiable factors which influence these morbidity differences.

Finally, Dr C recorded more contacts for oral contraception and smears, and Dr B more routine developmental checks. This reflected their special clinics. The figures were not statistically different.

Discussion

The gross workload within the practice is distributed remarkably equally between the partners for both surgery and home consultations. Indeed the data have been available for the past nine years and have altered little despite outside commitments as regional adviser, clinical assistant, and trainer. Richardson and colleagues (1973) make the point that a harmonious partnership depends on an equitable sharing of work; they also found workload to be related to list size, high consulting rates, and a high proportion of return visits.

Our list size of 2,405 patients per partner is slightly larger than the 1976 national average of 2,351 (DHSS 1977).

The gross consultation rate of 3·8 per registered patient per year falls between the many reported figures: Morrell (1971)—4·7; Fry (1972)—2·1; Second Morbidity Survey (OPCS, 1974)—3·0 to 7·0; Marsh and Kaim-Caudle (1976)—2·3.

The return rate for all consultations was 36 per cent compared with a mean of 56 per cent quoted by Richardson and colleagues (1973) and 47 per cent for Morrell (1971). Similarly, home visiting comprised 28 per cent of our workload compared with Richardson's (1973) mean figure of 39 per cent. Fry (1978) comments on the fact that Scottish practices and those in the North of England have higher home consultation rates.

Fry's (1972) home visiting rate of 0·1 per registered patient per year, which is the lowest that has been reported in England, and Marsh's (1976) of 0·3 per patient per year contrast with the figure for our practice which is 1·1 per year. However, the Second National Morbidity Survey (OPCS, 1974) showed a variation of between 0·1 and 1·5. Our higher rate is influenced by a high return visiting rate of 0·65 per patient per year which may be due to the semi-rural setting and the elderly population.

As Richardson and colleagues (1973) and Berber (1974) comment, first consultations are the product of a complex set of factors, but return consultations are controlled mainly by the doctor, who therefore determines his own workload. This is shown by Dr B, whose return rate is quite different from that of Drs A and C. This may reflect training differences. Dr B's much lower return consultation rate clearly causes less advance booking of surgery time and he is therefore more available for new acute patient-initiated consultations. The well baby clinic and the family planning clinic were both so new that the return rates they engendered were very small and not significant for either Drs B or C.

Morrell (1971) has shown that patient-initiated consultations are biased towards diagnostic categories of eye, ear, skin, digestive tract, and accidents and Dr B's figures show a higher rate for skin (not significantly), digestive tract, and accidents. The higher recorded level of respiratory illness is caused almost entirely by upper respiratory tract infection which is manifestly an acute presentation. Thus Dr B sees more of Morrell's first category and Drs A and C more of his second category.

It appears that males attend more often for patient-initiated consultations, as the groups of males seen more often by Dr B (mental, circulatory, respiratory, digestive tract, skin, and accidents) are similar to those of Morrell's patient-initiated group.

Each doctor influences his own workload and morbidity classification by the way in which he recalls female patients. Dr A had a very low rate in the neurosis group, Dr B a low level in the chronic illness group, (endocrine and arthritic conditions), and Dr C a very high rate in both neurosis and musculo-skeletal groups.

Many hypotheses can be put forward to account for these differences between the partners: perhaps Dr A is

uninterested in emotional problems, or Dr B will not allow the development of dependency, or Dr C, because of his own anxiety, promotes dependency. However, none of these hypotheses are examined here. Further work is required in our own partnership and in others to allow partners to discuss such hypotheses between themselves without feeling threatened.

Buchan and Richardson (1973) and Westcott (1977) have both shown that length of consultation differs with morbidity classification but not with sex of the patient. Thus Dr B's different ratio of patients by sex should not affect the consulting time, while Dr C's large number of female chronic neurotic patients should lengthen his consulting time.

While the very different consultations in the under-15 age group may seem to reflect Dr B's previous experience in paediatrics, in fact the whole difference can be accounted for by the consultations for acute problems in the respiratory and accidents group and must again reflect his availability because of surgery booking rather than his special interest.

There is no obvious explanation why Dr A should diagnose more disease of the nervous system. If, as senior partner, he was consulted by the elderly then surely the cerebro-vascular element of this group would predominate, which it does not, and these differences would be shown in the over-65 age group, which they are not.

Dr C's low number of patients with neoplasms was influenced by his being a new partner; Drs A and B had a greater number both of episodes and terminally ill patients, which was related to their greater time in the practice.

It appears that the low level of skin diagnosis is caused by Dr C's lack of experience in this subject with a much smaller number of definitive diagnoses, especially when it is contrasted with Dr B's higher total level and higher diagnostic level in this group. Dr B had a much lower level of imprecise diagnoses in this group than either Drs A or C and must reflect his previous experience in this subject.

Conclusions

The morbidity differences are caused not by partners' disease or diagnosis preferences but by a differing policy of recalling patients. The latter also results in significant differences in the age and sex distribution of the patients seen.

One partner, who had no postgraduate experience of dermatology and only two years as a principal at the time of the survey, showed a low level of diagnosis in the dermatological group of diseases.

The partners have not found discussion of these differences to be threatening. They think that they are healthy and complementary and do not detract from a shared philosophy of general practice.

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