

## For Debate . . .

### General practice: a blurred snapshot

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One of the characteristics of the current debate about the future of primary health care is the extent to which policy options are being discussed in a vacuum of information. Those contracted to provide the family practitioner services are, as the 1986 green paper on primary health care pointed out, "like 66 000 small businesses."<sup>1</sup> And, like small businesses in general, they tend to treat information about their own activities as private property. Not only is this incompatible with the increasing emphasis on public accountability for the way in which public resources are used, whether in the public or private sectors,<sup>2</sup> but, equally, such professional individualism may be at odds with the collective self interest of the profession in being able to engage in informed dialogue. So, in the case of general practice, the annual confrontation between the profession and the review body has all too often turned into a dialogue of the deaf in the absence of the information required to resolve disagreement. The profession has tended to argue that remuneration should rise to reflect its growing workloads; the Department of Health and Social Security has responded by challenging the assertion that workloads have increased, and the review body has lacked the data to come to a definitive conclusion either way.

#### More questions than answers

It was therefore something of an event in the history of the relationship between the medical profession and the DHSS when, in 1985, they agreed on a jointly supervised national survey of workloads in general practice in order to provide better information for the review body. And so, in turn, is the publication now of the survey itself.<sup>3</sup> The joint survey is, as we shall argue, difficult to interpret: it provides only a snapshot of general practice at one point in time. The review body emphasises in its 1987 report that its main importance may lie in providing a baseline against which to measure change when it is repeated in four years' time.<sup>4</sup> Moreover, the way in which the survey results have been analysed and presented in the published report makes this a needlessly blurred snapshot, as we shall also argue. But while the survey provokes more questions than it answers, its results—particularly when taken together with evidence drawn from other sources—do suggest how, in the continuing policy debate about the future financing and organisation of primary health care, we might start to think and collect information about the relation between inputs and outputs in

general practice. What mix of resources is calculated to produce the appropriate output and how should it be organised?

It was not the purpose of the joint survey to answer this question, since its main concern was to collect information about workload in the context of pay negotiations. In any event, we still lack any agreed definition, let alone ways of measuring, what the appropriate outputs should be, despite the pioneering work of the Royal College of General Practitioners.<sup>5</sup> Nevertheless, the information collected by the survey from its representative sample of 1224 doctors (a 58.3% response rate) can illuminatingly, if crudely, be analysed in terms of inputs and outputs. On the one hand, the survey provides information about the input of resources, in particular the time of the practitioners (with some data also on employed and attached nursing and ancillary staff). On the other hand, it also gives data on outputs, in terms of the number of patients seen and the time spent on each consultation, whether in the surgery or in the home or in clinics. And it allows us to look at the way in which organisational factors—that is, the size and type of practice—may affect the relation between inputs and outputs. Many of the elements required to build a more complete and illuminating picture are lacking—for example, we do not know how the recorded activities are linked to prescribing or referring patterns, far less how any of these are linked to that philosopher's stone of researchers, outcomes as measured in terms of the patient's health. Nor is there a qualitative dimension. But at the very least the survey results should provoke further analysis, discussion, and investigation of all these issues.

#### Using the survey as a springboard

The reason for urging that the report on the joint survey should be used as the springboard for further analysis stems from the fact that the results as presented are largely meaningless. They set interesting puzzles, but they are of the kind prompted by a reading of the *Guinness Book of Records* or any other compilation of striking but seemingly random statistics. The point can be illustrated by taking the finding that may attract most public attention—that the average general practitioner spends just over 38 hours a week on his or her National Health Service duties, plus another 30 hours on call. In addition, she or he will spend a further six hours or so on non-NHS work. Does this suggest a hard pressed professional or someone with enough leisure time to augment his or her income through non-contractual activities? Is this a heavier or lighter workload than that carried by other professionals, such as barristers or accountants, whose income levels are invoked in pay negotiations? We do not know. What is more, the averages conceal more than they reveal. For perhaps the most consistent pattern to emerge from the survey, if also the most predictable, is the variation between practices and practitioners. So, for example, 15% of general practitioners work more than 50 hours a week while 12% work less than 25 hours a week (and the differences are even grosser if on call hours are included).

Given such variations two crucial sets of questions follow. Firstly, how are variations linked to the characteristics of either the

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practitioner (such as age or sex) or the practice (such as list size or number of partners)? Secondly, how are the inputs of hours worked related to outputs like consultation rates or times? Much of the raw material required to answer these questions has been generated by the survey; the design of the questionnaire was clearly sensible. But the way the statistics are presented and analysed in the published report allows, at best, only tentative conclusions and, at worst, is a source of confusion. So, for example, the data show that, for any given list size or age group, singlehanded practitioners work longer hours than those in partnerships. But while the hours worked increase with rising list sizes—it would be astonishing if they did not—there does not seem to be a direct, linear relationship between the two. The rise in hours worked is, proportionately, much less than the rise in list size. General practitioners with a list of between 1000 and 1500 work an average of 36 hours a week, while those with over 3000 work 41 hours. The way the data are presented, in broad bands, does not permit any conclusion on the precise relationship nor about the linked issue of the way in which factors like list size, organisation of practice, and age of practitioner interact (for an example of the unhelpfulness of statistical presentation table 20 is recommended). Nevertheless, the survey seems to confirm the conclusions of previous studies that suggest that it is general practitioners who largely determine their own workload by the way in which they organise their practice rather than this being determined by demand factors like the size and composition of the list.<sup>6</sup>

Frustratingly, but characteristically, the survey provides data but no clarity about one such demand factor. It shows the working hours of general practitioners with different numbers of patients over 65 and over 75 on their lists. The picture that emerges is a confusing one, which suggests that there is no consistent relationship between workload (as measured by hours worked) and the numbers of elderly on a list. For example, general practitioners with between 200 and 250 patients in the over 65 category work longer hours than those with between 400 and 450 in this category. And much the same is true when only the over 75s are looked at. From this it might be tempting to conclude that many of the doctors whose income benefits from the weighting of capitation payments for elderly patients are not delivering any extra services in return. But this would be a premature conclusion. For, astonishingly, the survey report does not allow for the total list size of the doctors whose workload is being analysed. There is no way of telling what the numbers of elderly represent as a proportion of total list size, and it would therefore be surprising (and probably fortuitous) if there were any relation between the former and the workload. Nor is there an attempt to link the figures to other factors, such as practice organisation. As presented in the text the statistics are thus meaningless and possibly misleading if anyone were to use them in debates on policy.

#### Link between list size and length of consultation

Turning to the data on general practice outputs—that is, consultation times and rates, and the relation these might have to inputs—the problems of interpretation deepen. Here the most important finding, and certainly the one most calculated to be exploited in debate about future policy, is the apparent link between list size and the length of each consultation. If one dimension of quality in general practice is taken to be time spent with each patient, which may not necessarily be the case, then the evidence presented here would seem to strengthen the arguments for moving towards the BMA's target of an average list size of 1700. Whereas Butler's 1980 survey of the literature was agnostic about the relation between list size and time spent<sup>7</sup> and the more recent Manchester study of general practice suggested only a weak and inconsistent one,<sup>8</sup> the joint survey seems to show a direct link. Consultation time falls as list size increases. General practitioners with under 1500 patients give almost a third more time to each patient than those with over 3000. But, again, the strength of the finding may simply reflect the inadequacy of the analysis. There is no attempt to

standardise list size for such factors as practice organisation or the proportion of elderly patients on the list. Far less is there any attempt to relate the statistics about consultation times to the statistics about consultation rates. Do general practitioners who spend more time with each patient see fewer patients? What is the relation between intensity and frequency? Again, we do not know. The survey report gives figures of the weekly number of consultations for practices in different list size categories, but since each set of figures is presented in broad bands it is impossible to work out accurate consultation rates, though a rough impression is that rates fall as list size rises.

In any case, any attempt to relate inputs to outputs, however crudely, is doomed because of another feature of the analysis. This is its failure to relate figures of workload and practice patterns to the changing structure of general practice—that is, the fact that the staff either employed by or attached to their practices now outnumber the general practitioners themselves. If we are concerned about the impact of increased resources on general practice and about the effect of different mixes of inputs on the pattern of services provided then we cannot ignore this. There are now over 30 000 such staff, and their number rose by over 25% between 1979 and 1984. They represent a considerable investment of public resources and it is just as important to calculate their effect on primary care as it is to assess the impact made by drawing more doctors into general practice and cutting list sizes. But while the joint survey did indeed collect information about the staff either employed or attached to practices, there is once again no systematic attempt to relate this to data about work patterns. One table shows that hours worked by general practitioners tend to rise as the number of staff employed rises. But since this does not standardise for other factors—such as the list size or practice organisation—it is difficult to attach much significance to such figures. Nor are the data collected used to illuminate such questions as whether employing more staff allows general practitioners to see more patients or to spend more time with them. Lastly, we do not know to what extent such staff supplement, or indeed possibly replace, services provided by the general practitioner. It may be that, increasingly, patients telephone or go to surgeries to contact staff other than doctors.

#### Potentially valuable data

If the joint survey, as presented to the public, is very much a missed opportunity—as likely to confuse as to inform discussion about the future of general practice—it does not represent a waste of effort by any means. Firstly, the data collected could be potentially valuable if it were possible to carry out a more sophisticated statistical analysis, designed to explain the phenomena revealed as distinct from merely providing a wilderness of descriptive statistics. In this respect it would be helpful if the data could be linked to some of the findings in the literature, studiously ignored in the present report. Secondly, the data set itself could provide the framework for generating a better understanding of the dynamics of general practice. All the survey findings have one common theme: the range of variation between general practitioners in any given category, whether that category is list size, practice organisation, or the age and sex of practitioners. To return to our example of consultation times, there are very considerable variations even among general practitioners within the same list size range. While most general practitioners within the 1500 to 2000 band spend around seven minutes on each consultation, there are quite a few who spend less than five minutes and a substantial minority who spend between 10 and 15 minutes. What factors are associated with such variations? Customarily, the response to such variations is to assert that all general practitioners are fierce individualists and that it is, therefore, inevitable that there should be such idiosyncratic variations. But general practice is not a totally random process. It would be strange indeed if the behaviour of general practitioners, in contrast to that of patients, were not amenable to investigation and explanation. We need to know a great deal more about whether and how variations in behaviour are linked to education, age, and so on,

just as we need to know how they relate, in turn, to other crucial variables such as prescribing and referring patterns. And here the joint survey could possibly provide a sampling frame for pursuing precisely such questions, as well as a precedent for cooperation between the profession and the DHSS in encouraging research in the secret garden of general practice.

The most positive conclusion to be drawn from the joint survey, and one which is not dependent on further research or analysis, must surely be that the policy debate about general practice should not take as its focus the issue of list size. Crude list size does not seem to be an appropriate instrument of policy, whether for planning or for distributing the existing number of general practitioners. The joint survey confirms only what has been known for a long time: that crude numbers tell us little. For a central puzzle remains. The available evidence gives inconsistent signals. On the one hand, the composition of a list may be as important as its size. As we know from the General Household Survey consultation rates vary both by age and by social class, and these rates have remained remarkably consistent over time.<sup>9</sup> So, to take an extreme example, a general practitioner with a list made up entirely of working class patients over 65 might expect to have twice as many consultations as a general practitioner with a list of the same size composed entirely of professional men and women aged under 45. Adjusting the list sizes of general practitioners and their distribution to take account of social factors suggests that the picture given by crude figures changes quite radically.<sup>10 11</sup> On the other hand, as the joint survey and other research seems to show, general practitioners can impose their own pattern of practice whatever the size or composition of the list. On either count there seems little reason to think that there is any magic in a particular figure. In any case list sizes should be adjusted to reflect other inputs besides the general practitioners themselves. Most crucially, we need to know the relative contribution of both extra support staff and extra general practitioners to improving the capacity of a primary health care team to deliver better services for any given list, whether qualitatively or quantitatively.

### Closer integration of information

To make these points is to bring our argument full circle. To the extent that the joint survey can be used as a way of opening up the books of general practice, as well as a wage bargaining tool, so its importance may in future years come to be seen chiefly as a first step in breaching the convention of treating general practice as a collection of autonomous small businesses. Such a convention is at odds with the pressures to involve general practice more closely in the operations of the NHS and social service provision as a whole. For if there is to be a closer integration of work there must clearly also be a closer integration of information. Equally, if there is to continue to be an increasing investment of public resources in primary health care there will also be increasing demands for general practice to account for the money it is absorbing.

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*Lichens are reported to be contaminated with radionuclides from power station sources, especially since the Chernobyl incident. One of the uses of lichens is to provide dyes when the lichens are boiled with the wools to be dyed, as in Cumbria and in western Scotland. Are there any dangers in this practice?*

Lichens, unlike higher plants, have no protective outer covering or cuticle and may both accumulate and survive the effects of high contents of radionuclides, in addition to other elements, including heavy metals. In the 1960s there was cause for concern in the arctic and subarctic as these areas are rich in lichen growth and the indigenous human populations depend almost exclusively on local wildlife resources.<sup>1</sup> Here, the long lived radionuclides <sup>137</sup>Cs, <sup>90</sup>Sr, <sup>239</sup>Pu, and <sup>210</sup>Pb were found to contribute significantly to the radiation burden of people living on reindeer (caribou) meat, through the lichen-reindeer (caribou)-man food chain. This was because the lichens absorbed fallout from the atmospheric testing of nuclear weapons carried out from 1952 to 1963. More recently it was shown that lichens at several locations in Austria contained significant amounts of the short lived radionuclides, <sup>137</sup>Cs, <sup>144</sup>Ce, and <sup>95</sup>Zr-<sup>95</sup>Nb, as a result of an atmospheric nuclear weapons test carried out by the People's Republic of China on 16 October 1980.<sup>2</sup> The test at the Chinese testing area Lop Nor had an explosive yield of less than 20 kt TNT. Although the time interval between the atomic test and the sampling of the lichens was ten months or longer, lichen samples contained, for example, between 4.4 and 36 pCi <sup>137</sup>Cs/g, when aerosol samples no longer showed any detectable trace of manmade radionuclides. After the accident at Chernobyl on 26 April 1986 the *Sunday Times* (10 August 1986, p14) reported exceedingly high <sup>137</sup>Cs contents of 40 000

becquerels per kilogram (1081 pCi/g) in Scandinavian lichens. While no figures have yet been published for the radionuclide contents of British lichens after Chernobyl, they are likely to be considerably lower over most areas than those in Scandinavian lichens because less radioactivity was deposited in the British Isles. Moreover, since in Britain lichens are not such an important component of ecosystems in terms of biomass, it is likely that lichens may be shielded from the radioactivity by other plants, particularly where they occur on trees.

A range of lichens are used for dyeing in Britain by amateur dyers, particularly *Parmelia omphalodes* (crottle) and *Ochrolechia tartarea* (cudbear).<sup>3</sup> These lichens contain depsides, the aldehyde radical of which reacts with the free amino acids of wool to form stable azomethine linkages; the resultant hydroxyaldehydes are responsible for the yellow brown to reddish colours produced. Lichens, however, are no longer used for the commercial dyeing of cloth and their use by amateurs is currently discouraged on conservation grounds. The specific binding sites of radionuclides within lichen thalli are unknown and may not involve lichen acids. In view of these factors it is unlikely that there are currently any dangers in the use of British lichens for dyeing.—O W PURVIS, research fellow at the British Museum (Natural History) and Reading University.

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