MEDICAL PRACTICE

Contemporary Themes

Medical manpower: III—policies

On 28 and 29 November at Canterbury the BMJ held a tape-recorded conference of invited speakers to discuss medical manpower. Transcripts of the first two conferences, on ancillaries and women in medicine, were printed in previous issues of the BMJ (3 January, p 25; 10 January, p 78) and the final session is printed below, with the two related working papers by Mr J R Butler and Dr W J Appleyard. A related article on medical manpower policies by Dr J M Forsythe is printed at p 174 of this week's Supplement.

Working papers

How many doctors are needed in general practice?

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Of the many problems surrounding the geographical distribution of manpower in general practice, the most intractable is that of determining the number of doctors that are thought to be needed in different parts of the country. There are two ways to approach the problem. One is to start with the total available supply of practitioners and to decide the basis on which this limited supply of manpower should be shared between the medical practice areas. The other approach is to determine the desirable manpower levels in each area according to some intrinsic notion of sufficiency, without regard to the overall supply. The total number of doctors resulting from this exercise will then represent the target number of general practitioners to be achieved at the national level. Both approaches encounter problems of objectives and values to which there are no easy solutions.

In a perfect market situation, where the supply of and demand for goods and services is reconciled by price, the issue resolves

itself in economic terms. A commodity or service is in sufficient supply when it satisfies demand at current prices. If demand exceeds supply, the imbalance would normally be redressed by an increase in price, but in some cases price movements may be artificially constrained by governmental or professional policies. When this happens, the limited supply of services must be rationed among potential demanders by factors in addition to price; these might include, for example, delays in access to the service, lower standards of service, or simply the nonavailability of a service to certain groups of people.

Unlimited demand

In contrast to a market economy in medical care, a distinguishing characteristic of a national health service is that goods and services generally carry no price: they are "free" to patients at the time they are used. In the absence of price, the economic concept of sufficiency ceases to have much meaning because the total demand for health care (even when constrained by behavioural factors) is always likely to outstrip the supply of resources. A shortage will always exist. One response to this situation is simply to increase resources to the point where demand (even at zero price to the user) is finally satiated. Nevertheless, not only is this point quite unknown in general practice;

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it is probably far in excess of the volume of resources that could ever be devoted to primary care, given the competing claims of other sectors of the Health Service and the notorious tendency of services to generate their own demand. In reality, therefore, any government attempt to influence the distribution of manpower in the NHS must recognise the impossibility of meeting all potential demands and must rely instead upon more or less arbitrary judgements about the desirable number of doctors in any area. How, then, might these judgements be formed?

One way is through reliance on the opinions of the medical profession. To the extent that a professional consensus can be formed about the needs of a population for primary medical care and about the range and volume of resources required to meet those needs, a baseline can be formulated against which to plan the distribution of the existing supply of doctors, or to prepare targets for the total supply of medical manpower in the future. Such an approach was used in the United States in the classic Lee-Jones study in 1933¹ and repeated by Schonfield in 1972.² It has the merit of planning and distributing resources according to some measure of need, but, by failing to allow that needs do not always find expression in demand, it produces fairly large net estimates of manpower shortage.

Consumer evaluation

An alternative approach is to emphasise the consumer's evaluation of the situation. A shortage of doctors might be said to exist when there is widespread dissatisfaction with the availability of general-practitioner services, or when complaints are made of basic needs for care remaining unmet. This approach may create a picture of geographical variations in manpower targets that bears little relationship to professional judgements of variations in need. It is presumably an approach that will be emphasised in the future with the "institutionalisation" of consumer opinion through the community health councils. The problem, of course, is that in the absence of a price mechanism there is likely to be no limit to the demands for more resources.

A third approach to shortage is through comparative doctor/patient ratios. A shortage is considered to exist when the ratio in any locality is lower than that existing in a different place or at a different time. Ratio comparisons between areas form the basis of current policies regarding the distribution of family doctors: medical practice areas are "designated" as short of doctors, not as the result of intra-area evaluations of the relationship between need and supply, but almost entirely on the basis of comparison with ratios in other areas. An example of ratio comparisons through time is seen in the estimates of future manpower requirements produced by the Todd Commission.³ The short-term (10-year) estimates were based largely on the number of doctors required to maintain existing ratios, and the assessment of longer-term needs was "based primarily upon an extrapolation of broad trends" actually obtaining between 1911 and 1961 (para 328). Implicit in the use of comparative ratios is the assumption that the base ratio against which the judgement is made is both adequate and needed; that is, a reduction in the ratio would be deleterious and increase unnecessary. Such an assumption is really a restatement rather than a solution of the underlying problem, for it does not eliminate the need to specify the grounds on which the base ratio is considered to be adequate. There is, too, the snag that unless both the doctor and population components of the ratio are disaggregated into relevant sub-groups, the comparisons may be meaningless or even positively misleading.

Outcome of the health service

In contrast to the ratio-based approach, which is concerned

essentially with achieving an equality of resource *input* between areas, it is possible to envisage (at least in theory) an approach which aims at equality of *outcome*. The ultimate objective or outcome of the Health Service is presumably (in broad terms) the maintenance or improvement of health; and the ultimate objective of distributional policies, on grounds of equity, is presumably an equality of outcome between areas. Outcome results from the supply and use of a range of goods and services to the population; these are the outputs of health care and would include, for example, prescribing drugs, giving advice, and carrying out clinical procedures. These outputs are in turn dependent on the input of resources of money, manpower, expertise, and so on. If, therefore, the most important objective of rationing in a national health service is to ensure equality of outcome, decisions about the distribution of inputs (including manpower) can proceed on a rational basis only if the relations between input and output, and between output and outcome, are well understood.

In fact, in general practice these relationships are probably complex and are little understood. Although existing policies concerning the distribution of general practitioners implicitly assume that equality of input will produce equality of outcome, we know little about the circumstances under which this is and is not true. We have little systematic knowledge, for example, of the marginal increase in output that would result from the addition of one family doctor in different kinds of areas, and we have even less idea of the changes in the health of the population (if any) that would result from any increase in output. Yet unless these relationships are known, decisions about a desirable volume and mix of inputs (including GPs, nurses, and auxiliaries) will always be more or less dislocated from the basic objective of improving or maintaining people's health.

Importance of planning

At present, primary manpower targets in different parts of the country are based almost entirely on the objective of equality of input; the adequacy of manpower levels, in other words, is determined in relation to the doctor/patient ratios in other areas. The ratio, moreover, is "crude" in the sense that all full-time principals have an equal weight in the ratio and all patients are likewise counted equally. This policy has the substantial merit of being easy to understand and administer (and therefore cheap), and the additional cost and complexity of moving towards some form of output or outcome planning may simply prove to be unjustified. Nevertheless, because the current approach fails to accommodate the possibility of varying relationships between input, output, and outcome in different areas of the country, it is vulnerable to the charge of failing to discriminate between places with differing patterns of service provision, health care needs, access costs, and so forth. Research carried out at the University of Kent has shown widespread dissatisfaction among doctors and administrators for precisely this reason,⁴ although little progress has yet been made in identifying a more acceptable planning basis.

The analysis in this paper suggests that one possible way forward may lie in trying to identify more explicitly the relationship between input and output in general practice, and between output and outcome.

References

- ¹ Lee, R I, and Jones, L W, *The Fundamentals of Good Medical Care*. Chicago, University of Chicago Press, 1933.
- ² Schonfield, H, Heston, J, and Falk, I, *The New England Journal of Medicine*, 1972, **286**, 571.
- ³ Royal Commission on Medical Education, *Report*, Cmnd 3569. London, HMSO, 1968.
- ⁴ Butler, J R, in collaboration with Bevan, J M, and Taylor, R C, *Family Doctors and Public Policy*. London, Routledge and Kegan Paul, 1973.