Middle Articles

CONTEMPORARY THEMES

Community Demand for Doctors in the Next 10 Years*

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Brit. med. J., 1969, 1, 769-772

Summary: The demand for doctors has increased despite improved community health, because the prevalence of chronic disease has increased, and because affluence, better education, and the growth of specialization have all stimulated demand.

Most authorities have recommended an increase in the supply of doctors to meet the increasing demand. Nevertheless, a supply which preserves the present ratio of doctors to population might be adequate if medical productivity were raised. Moreover, an increase of the supply stimulates further demand; perhaps demand would fall if the supply were reduced, and community health might not deteriorate as a result of this.

Other social institutions besides medicine have a claim on the available pool of talent from which doctors are recruited. It is possible that medicine already receives its fair share.

Introduction

Interest in demand for doctors arises from concern about supply, and use in the same sentence of the words "demand" and "supply" suggests that we are dealing with an economic problem. To an economist the word "demand" means willingness or ability to pay, and even if we disregard how, to whom, and by whom payment is made it would be as well here to define demand in this precise sense. It is not the same as "want" or "need" for doctors; I have given elsewhere the epidemiological meaning of these terms (Last, 1965). Their measurement is difficult; demand can be ascertained only by special surveys. Routine statistics do not show the demand for but the use of doctors—almost but not quite the same thing. In the interests of simplicity it is customary to equate use with demand, as I shall from now on. A purist might prefer to substitute the word "use" wherever I use it for the word "demand."

Paradox of Increasing Demand

Judged by conventional standards such as infant mortality rates community health is steadily improving. Most people agree that the improvement owes less to the activities of doctors in clinical practice than it does to a number of environmental factors, of which better hygiene and sanitation and increasing affluence are the most important. Throughout the twentieth century the infant mortality rate has been steadily falling, and the proportion of doctors in the community has been steadily rising (Fig. 1; British data). But these phenomena are not related as effect and cause. Not only are there more doctors, people are using more medical care—consuming more drugs

and consulting the doctor and going into hospital more often (Fig. 2; Australian data).

FIG. 1.—Great Britain, 1911-66. Infant mortality rate per 1,000 and supply of doctors per 100,000. Source: Registrar General of England and Wales and Royal Commission on Medical Education.

FIG. 2.—Australia. Use of medical care 1952-67. Source: Annual Reports of Director-General of Health. P.M.S.=Pensioner medical service. M.B.=Medical benefits. H.B.=Hospital benefits.

Why does demand for doctors increase as we get healthier? Or, as the Director-General of Health in 1965 somewhat disingenuously put it, is the increased use of health services contributing to the health of the Australian people? The apparent paradox is explained by demographic and sociological changes and by changes in the pattern of medical practice.

Demographic Factors

The demographic changes are well known. As infant and childhood mortality are reduced the expectation of life rises.

* Text of paper presented at the Third Australian Medical Congress, Sydney, 14 August 1968.

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Higher proportions of all who are born survive into middle and old age to become afflicted with chronic diseases and disabilities which require continuing rather than episodic care (Fig. 3; British data). The increasing proportion of doctors in society runs roughly parallel to the rising expectation of life. Fig. 3 does not show the other important demographic change—namely, the ageing of the population. In England the proportion of the population aged 65 and over has gone up from 5% to nearly 12% in the past 50 years, and will continue to rise for the next 20 years until it reaches 15%. In Australia the proportion is less—8.5% in 1966—and owing to immigration of predominantly young people the rate of increase is slow; it will rise only to 8.8% by 1986 (Borrie, 1969). All the same this is an appreciable increase in absolute numbers—from just under a million in 1966 to more than 1½ million in 1986. As about three-quarters of people aged 65 and over suffer from at least one chronic disease the demand for doctors must rise. Career prospects for future geriatricians seem assured.

FIG. 3.—Great Britain. Life expectation at birth and supply of doctors, with proposed increase to 1995. Source: Registrar General of England and Wales and Royal Commission on Medical Education.

Another important demographic change is the tendency to earlier marriage and planned families. At present most girls have their first baby when in their early twenties and have completed their family by the time they are 30. Though the effect on this of the contraceptive pill cannot be foreseen, we are probably on fairly safe ground when estimating future requirements for maternal and child health services. Ten years from now more than 100,000 girls will reach the age of 20 each year in Australia, and the total annual number of births will exceed 250,000. Almost all the births will be to mothers under 30 years of age. For the rest of their reproductive lives most of them will want efficient contraceptives, so there will also be an increasing demand for specialists in family planning. The extra specialists who will be needed should be training now. In Australia adequate information is not available on the numbers of specialists in training. One advantage of the British N.H.S. is that accurate statistics on trainee specialists are readily and continuously available.

Sociological Factors

The sociological factors contributing to an increase in the demand for doctors include affluence and better education, especially health education by the mass media. These lead to higher expectations and more frequent use of health services. Unfortunately there is not much evidence that people become more discriminating and seek higher standards as well. Most

people, however well educated or well-to-do, are very uncritical of doctors, whatever doctors may think to the contrary (Cartwright, 1967).

It is impossible to foresee the medical consequences of changing manners and mores in contemporary society. Will addictive drugs present the next generation of doctors with entirely new problems? Will there be an intensification of the demand for psychiatric care as attitudes to mental illness become more liberal? There is little doubt that the demand for psychiatrists will be intensified in the next 10 years.

Changing Pattern of Medical Care

The most important change in the pattern of medical care is the replacement of independent general practitioners by multi-specialist medical teams. Collectively these do not seem to be able to look after more people than could the same number of independently practising doctors. There are both real and medico-politically determined lines of demarcation between the fields of competence of specialists. A patient whose disabilities affect several body systems requires the attention of specialists in each, instead of a single general practitioner. The standard of care is likely to be higher when provided by specialists, though sometimes uncertainty about who is ultimately responsible for the patient, or who is the "personal doctor," can have adverse effects on the quality of care. Most people want a "personal doctor," preferably one who is also the family doctor. In the U.S.A., where the decline of general practice is furthest advanced, specialists of several kinds, notably paediatricians, seems to be successfully replacing the general practitioner in this role (Sheps *et al.*, 1964).

Manpower Forecasting

These are among the factors that have to be considered when attempting to forecast future requirements for doctors. This has been a major preoccupation of Government authorities and private citizens in many countries in recent years. Indeed, it is difficult to pick up a recent issue of one of the standard British or American journals devoted to medical administration without finding someone's gloomy forebodings about the "crisis" of medical manpower.

Medical manpower forecasting and planning are notoriously difficult. British experience has been especially miserable. If only the deliberations of Government committees since the last war are considered, there have been no fewer than four shifts of policy. In 1944 a shortage of doctors due to sluggish recruitment during the depression and restricted university entry during the war led the Goodenough Committee (Ministry of Health and Department of Health for Scotland, 1944) to recommend an increase in the number of medical school places.

In 1957 the Willink Committee (Ministry of Health and Department of Health for Scotland, 1957) decided that there was a risk of overproduction of doctors, and recommended that the intake of medical students should be reduced. In fact the intake had already begun to fall (as it did about the same time in Australia), because the immediate postwar increase of university admissions had ceased by the early 1950s. The Willink Committee was badly informed. Its demographic forecasts were erroneous, and it made inadequate allowance for emigration of doctors (this may be pardoned because the main wave of emigration to Commonwealth countries had not really started, and at that time the American Medical Association was still exerting pressure to deter entry of British and other foreign doctors to the United States).

The conclusions of the Willink Committee were seriously challenged within two to three years (Lafitte and Squire, 1960) and were set aside in 1961 by the Platt Working Party (Ministry of Health and Department of Health for Scotland, 1961), which

recommended an immediate increase in intake of medical students.

Now the Royal Commission on Medical Education (1968) has urged a much sharper increase, so that by the end of the twentieth century there would be 1,800 per million population, instead of 1,180 as at present (Fig. 3). The number of doctors in relation to population has doubled in the past 40 years, and, if the Royal Commission on Medical Education has its way, it will increase by half as much again in the next 30 years. If we project the graph a little further onward we will reach a point somewhere in the first half of the twenty-first century when one in every 100 of the population would be a doctor.

The proportion of doctors in the population has increased in the same way in all industrial countries including Australia, which is especially well supplied as a result of medical emigration from Great Britain. Australian students of medical manpower have mostly been content to describe the scene and, perhaps wisely, have avoided making detailed predictions. The sole exception (Poate, 1953) had a rather clouded crystal ball when he forecast an imminent glut on the medical market. Within five years a serious shortage of country general practitioners had become apparent.

A Sceptical View

Among those who have thought seriously about the problems of medical manpower the consensus in both Britain and the U.S.A. favours increasing the supply of doctors to meet the increasing demand, but there are some dissenting voices.

It is true that demand for curative and palliative services is stimulated by affluence and better education, and there is no sign of a solution to the major medical problems of the present generation—accidents, cancer, cardiovascular disease, mental illness, and arthritis will no doubt be as prevalent in the next generation as they are in this, and as much (or more) medical care will be required to deal with them. But medical “productivity” should rise as doctors make more use of ancillary help and delegate some or all of the non-medical and paramedical tasks they now perform. Thus it should be possible for them to care for larger populations than at present without deterioration of quality.

Productivity is especially low in general practice. We have few reliable facts, but the available evidence suggests that in England consultation rates per annum have remained virtually unchanged for the past 50 years. Consultation rates have risen in Australia but the time scale is short, and medical benefit consultation rates may stabilize or decline, as pensioner consultation rates have been doing for the past seven years (Fig. 2). Whatever else may happen to medical services, it seems certain that general practice will continue to decline numerically. In Britain recruits are falling short of requirements by about 500 per annum (Last, 1967b), and the available evidence suggests that the state of affairs is no different in Australia (Wark, 1967). The diminishing number of general practitioners will in future have to look after larger populations than at present. If the standard of care is not to deteriorate they will have to raise their productivity—that is, devote more of their time to specifically medical tasks. Use of ancillary help will be essential. Much time could be saved for medical tasks by dictating notes and delegating clerical work completely.

Technical advances—for example, the use of computer-assisted medical diagnosis—could raise medical productivity further. The Kaiser Medical Groups in California have successfully experimented with automated multiphasic medical screening. Patients take their own histories with a self-administered questionnaire, and even perform some investigations on themselves before seeing the doctor. Results are processed by computer, and the physician is presented with a provisional differential diagnosis at his first contact with the patient (Collen *et al.*, 1964). In this way a good deal of time-consuming and

rather tedious medical labour is circumvented. This need not dehumanize medicine, quite the reverse, for it leaves more time to establish rapport with the patient instead of asking routine questions.

The contribution of women doctors is small in comparison to their numbers. In Britain about a quarter of doctors are women, but at present they work far below full capacity. Experience in some regions, notably Oxford (Rue, 1967), has shown that a more flexible and imaginative approach by administrators can appreciably augment the contribution of women doctors. The expanding specialty of family planning is a very suitable field for married women doctors who are able to work only part-time.

Another factor to be considered in medical manpower forecasting lies somewhere in the borderland between behavioural science and economics. There is a direct relation between the availability and the use of most human resources; the more we have, the more we use. This is another way of saying that demand depends on supply, or that an increase in the supply will stimulate further demand. This is Say's law, well known to economists.

This phenomenon is rather well demonstrated by the results of a survey I carried out among general practitioners in three English industrial cities in 1961–2 (Last, 1967a). The larger

FIG. 4.—Relation between “supply” and “demand” in general practice: list size and consultation rates in three English industrial cities in 1961–2. (Last, 1967a.)

FIG. 5.—Hospital admission rates, Vermont, U.S.A., 1963, in relation to availability of doctors and hospitals. Sources: Vermont State Health Department; Last (1965).

the practice population, the less often were patients seen (Fig. 4). The same inverse relationship occurred in general practice in Vermont, in the U.S.A. (Last and White, 1969). The regulatory mechanism might be operated by doctors or by patients or by both together. A busy doctor will be more selective than one who has time to deal with all requests, and patients who know that the doctor has many demands for his services may decide not to add their demands to all the others.

Further proof that Say's law applies to medical care can be found in statistics on hospital admissions in Vermont, U.S.A. (Fig. 5). Total general hospital admission rates were significantly higher in communities where patients had easy access to doctors than in apparently similar communities where doctors did not consult. The health of people did not appear to be inferior in the latter type of communities. If the national supply of doctors fell instead of continuing to rise, perhaps the demand would also fall. I wonder if the health of the community would suffer in consequence.

What are the Priorities

Finally, we must not overlook the importance of political, economic, and philosophical arguments. Economists and political scientists have sometimes argued that if society got its priorities right we would have fewer doctors, not more (Ginzberg, 1966). Medicine is only one of several social institutions that exist to meet important community needs. The increasing demand for doctors is created mainly by higher expectations for palliative treatment of chronic diseases in middle and old age. In terms of the total needs of society this may be a luxury that will always lie at least partly beyond our reach. Curative medical services absorb an increasing proportion of the national income, but unlike the less glamorous preventive services they contribute little if anything to raising the gross national product. It seems unlikely that we will ever have enough reserves of money, let alone human talent, to provide the many highly specialized medical teams with their equipment which would be required to service and replace our worn-out organs. If we are to have heart transplants for everybody we might eventually need a doctor for every 100 or so of the population, rather than for every 550—the Todd Commission's suggested target for 1995 (Royal Commission on Medical Education, 1968). Education, engineering, town planning, agriculture, and the behavioural sciences need talented recruits no less urgently than medicine. Perhaps medicine already has its fair share.

Addendum

Fig. 2 shows an upward trend in annual consultation rates per contributor—that is, per breadwinner or head of household. Sir William Refshauge, Director-General of Health, Commonwealth of Australia, has kindly supplied data on the number of dependent family members. Using contributors and their dependants—that is, all potential patients—as the denominator, I have recalculated *per caput* annual consultation rates. These have increased from 2.6 per annum in 1956–7 to 3.4 per annum in 1966–7; this is about the same rate of increase as found when contributors only are used as the denominator, but it represents a much smaller increase in medical “productivity” over this period. Comparable British data do not exist. Individual studies, mostly by members of the Royal College of General Practitioners, have often shown evidence suggestive of increasing “productivity,” but it is impossible to tell whether these studies are representative of general practice as a whole. It is surely important to measure “productivity” in a representative sample of practices (and in hospital-based specialties); measurements and action to increase “output” are long overdue.

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