

Briefing

DOCTORS, NURSES AND MIDWIVES IN THE NHS

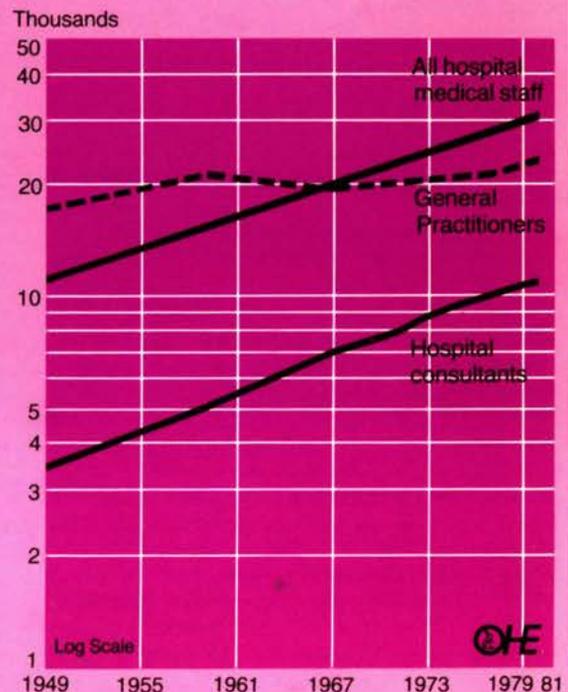
Introduction

There have been substantial increases in all categories of professional manpower in the National Health Service since it was first established in 1949. This *Briefing* examines and discusses the trends for doctors, nurses and midwives. The data it presents relate mainly to England, but similar trends apply to Great Britain as a whole. The discussion draws attention to the balance in professional manpower between hospitals and the domiciliary services. It also attempts to relate the growth in manpower to measures of medical activity, and emphasises the need for further studies to examine more critically this relationship.

The overall trends

Figure 1 shows the numbers of doctors in hospital (as 'whole-time equivalents') and of general practitioners in England between 1949 and 1980. It also shows separately the numbers of consultants in hospital. There have been some changes in definition over the period, but overall there has been a steady increase both in total numbers of hospital doctors and in consultants. The total rose from a whole-time equivalent of 11,735 in 1949 to 31,421 in 1980. This is an increase of 168 per cent. Numbers of consultants rose rather faster, by 218 per cent, to 11,080.¹ By contrast the trends in general practice have been more variable. After a rise in the 1950s, there was a fall in the early 1960s, when general practice under the NHS was to some extent in the doldrums because the early method of remunerating general practitioners tended to encourage poor standards of practice. It was revitalised by the 'New Charter' for general practice in 1965 when remuneration was put onto a sounder basis, providing incentives to improve the quality of care. Since then numbers of general practitioners have once again risen. However the overall rise between 1949 and 1980 is only from 18,000 to 22,674. This increase of 26 per cent is less than one-sixth of the rate of increase in numbers of hospital doctors. Whereas in 1949 there were more than three general practitioners for every two hospital doctors,

Figure 1 All hospital medical staff (whole-time equivalent) England 1949-1980; General Practitioners; England 1949-1980.



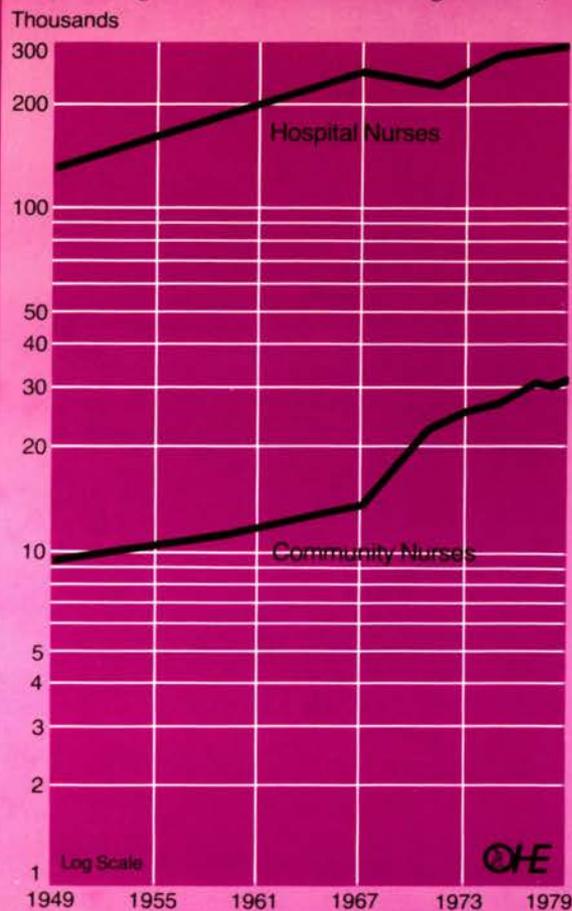
Source: DHSS

by 1980 the situation had reversed; there were almost three hospital doctors for every two general practitioners.

Although the number of general practitioners has recently been rising faster than in the early 1970s, it is still increasing more slowly than the number of hospital doctors. Between 1977 and 1980, the annual rate of increase was 2 per cent for general practitioners, as opposed to 3.5 per cent for hospital doctors.

1 In the 1970s consultants actually increased rather more slowly than other grades of hospital doctor, reversing the earlier and overall trend. Official policy, however, is that numbers of consultant posts should again increase more rapidly than junior posts in hospital in the 1980s and 1990s.

Figure 2 Hospital nursing staff (whole-time equivalent) England 1949-79 Community health nurses (whole-time equivalent) England 1949-79 (including health visitors but excluding midwives).



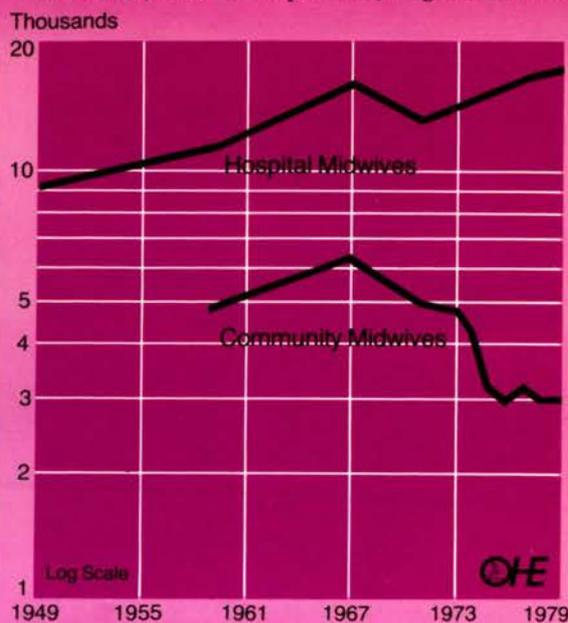
Source: DHSS

Figure 2 shows the trends for nurses between 1949 and 1979. The number in hospital rose from a whole-time equivalent of 137,636 to 297,684. This is an increase of 116 per cent. Although the number of nurses in the community (including Health Visitors but excluding midwives) is considerably smaller, it rose at a faster rate of 238 per cent from 9,529 to 32,162. There was a particularly sharp rise in community nurses between 1967 and 1971, and during this period the number of nurses in hospital actually fell for a short period indicating a shift between hospital and community work. However, in 1979, there were still about ten nurses in hospital for every nurse working in the community.

Figure 3 shows that for midwives, as in the case of doctors, there has been a sharp movement towards a larger proportion working in hospital. In this case the trend obviously reflects the Health Service policy of persuading mothers to have their babies in hospital rather than at home. The number of community midwives actually fell from 4,820 in 1959 to 3,220 in 1975; since then the number has remained fairly constant. By contrast the number of hospital midwives rose from 9,043 in 1949 to 17,039 in 1979. There was a slight check in the increase between 1969 and 1971, perhaps reflecting the considerably greater fall in the birth rate; but since then numbers have risen again. Combining the figures for hospital and domiciliary midwives, there has been an overall increase from 16,100 in 1959 to 20,023 in 1979.

One possible explanation for the faster growth in numbers of doctors in hospital than in the community would be a shift in workload from general practitioners to hospitals. To examine this possibility, it is instructive to look at the numbers of new out-patient referrals. Clearly the general practitioners could normally pass on their patients

Figure 3 Hospital midwives (whole-time equivalent) England 1949-79 Community health midwives (whole-time equivalent) England 1959-79



Source: DHSS

Figure 4 New out-patients; England 1952-1979 (excluding accident and emergency).



Source: DHSS

to the hospitals only by referring them as out-patients. Figure 4 shows the numbers of new out-patients seen by hospital doctors in each year between 1952 and 1979. There was indeed an increase between 1952 and 1971, when numbers rose from approximately 6.3 million to 7.9 million. Since then, however, there has been a slight decline in the numbers of new out-patients seen in hospitals, with the figure fluctuating between 7.5 million and 7.7 million between 1976 and 1979. (The sharp drop in patients seen in 1975 was due to the industrial action taken by hospital staff in that year). Total numbers of out-patient attendances have also remained constant. Hence since 1971 there has been no indication from the number of out-patients that general practitioners have been passing a larger number of cases on to hospital. To some extent numbers of referrals by general practitioners to hospital may have been held down because of the increased opportunities which general practitioners now have to get diagnostic tests, such as pathology and X rays, carried out for themselves without first having to refer the patient to a hospital consultant. Also, there has been an increase in numbers of direct self-referrals to Accident and Emergency departments in hospital. This must have reduced some of the potential work load for general practitioners.

Measurements of activity in acute hospitals

To throw some light on the patterns of activity of the increasing numbers of hospital doctors, the Department of Health and Social Security has recently carried out an analysis based on the acute hospitals (DHSS 1981). This attempted, amongst other things, to relate activity to the employment of medical manpower. The overall reason for this interest is illustrated in Figures 5 and 6 taken from the DHSS Report. These Figures show the percentage changes between 1969 and later years in the number of consultants, the numbers of in-patients and the numbers of available beds in acute wards.

Figure 5 shows that for surgery there has been the expected steady increase in medical manpower. The number of hospital beds occupied by surgical cases is only slightly higher than in 1969 and since 1971 has, in fact, been falling. The number of surgical in-patients (as measured by 'discharges and deaths' each year) has also risen more slowly and erratically than the number of consultants. Over the years there is a growing divergence between the increase in numbers of consultant surgeons and the increase in numbers of in-patients treated. To some extent this has been offset by a substantial increase in number of day-surgery cases. Nevertheless the data give a crude impression that what could loosely be called surgical 'productivity' seems to have fallen over the decade from 1969 to 1978.

A rather more clear cut and different picture emerges from Figure 6, which shows the percentages in consultants, in-patients and available beds in the acute medical wards. Here the increase in numbers of patients treated in hospital fell behind the increase in numbers of consultants in the years up to 1975. Since then, 'discharges and deaths' have increased at approximately the same rate as numbers of consultants. At the same time, over the whole period, the number of available beds has decreased steadily. This means that after an early spell in which consultants were treating fewer patients, their increase in numbers seems to be more or less matched by an increase in numbers of in-patients. At the same time, these larger numbers of patients are being treated with fewer and shorter spells in hospital, so that the total beds required fell by more than 10 per cent between 1969 and 1978. Taking manpower and bed requirement together, therefore, there appears to have been a real increase in what could be described as 'productivity' in the acute medical wards since the mid-1970s.

However in the interpretation of the relationship between manpower and activity in acute hospitals the picture presented by these two Figures suffers from three

Table 1 Percentage changes in annual hospital discharges and deaths and in numbers of consultants for medical and surgical specialties between 1969 and 1978; England

	Inpatients	Consultants
Medical specialties		
Cardiology	+157%	+35%
Neurology	+73%	+42%
Paediatrics	+60%	+55%
Rheumatism & rehabilitation	+44%	+49%
General medicine	+18%	+22%
Dermatology	-7%	+24%
Diseases of the chest	-19%	-23%
Infectious diseases	-27%	-22%
Surgical specialties		
Urology	+71%	+67%
Radiotherapy	+65%	+9%
Dental surgery	+38%	+24%
Neurosurgery	+19%	+13%
Thoracic surgery	+18%	+14%
Ophthalmology	+12%	+17%
Plastic surgery	+10%	+25%
General surgery	+2%	+6%
ENT surgery	-17%	+17%

Source: DHSS

Figure 5 Surgical Specialties; percentage changes over 1969.

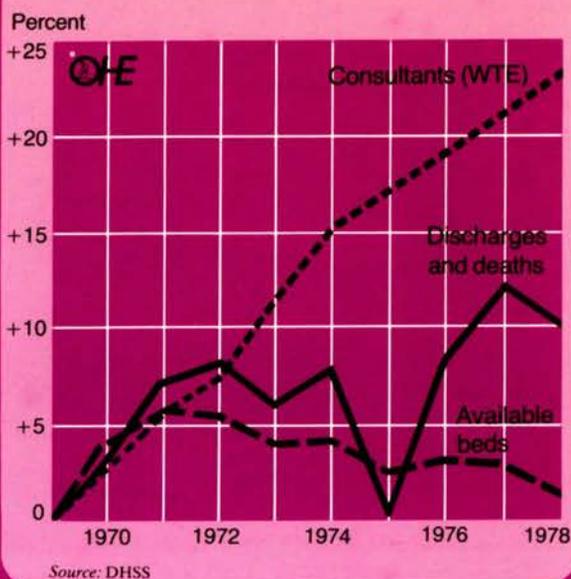
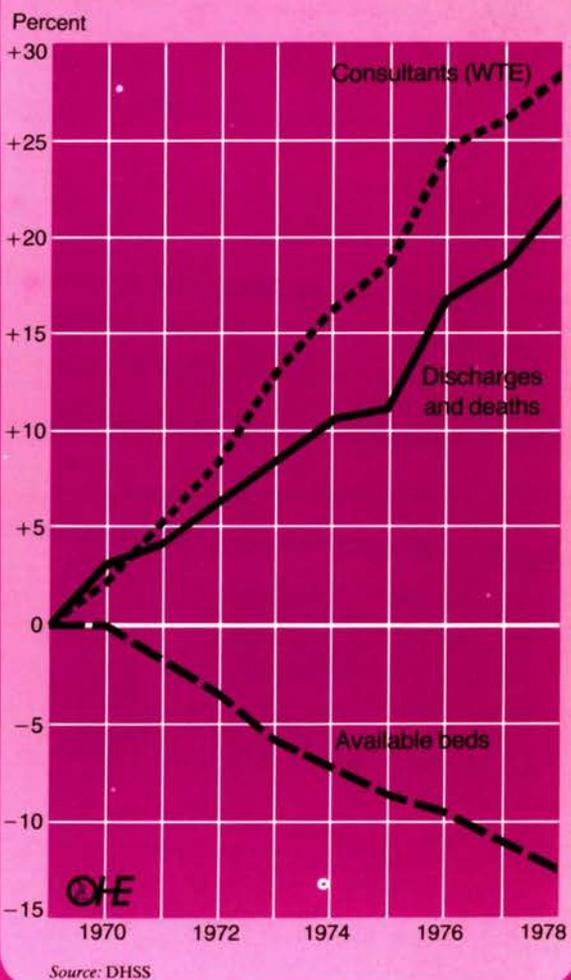


Figure 6 Medical Specialties; percentage changes over 1969.



major limitations. First, they take into account only the numbers of consultants, although Figure 1 showed that, taking overall figures, numbers of consultants and total hospital medical staff had risen more or less in parallel. Second, they are based on the number of in-patients only; they exclude day-patients and out-patients. This can give a

Figure 7 Urology: 1969-78.

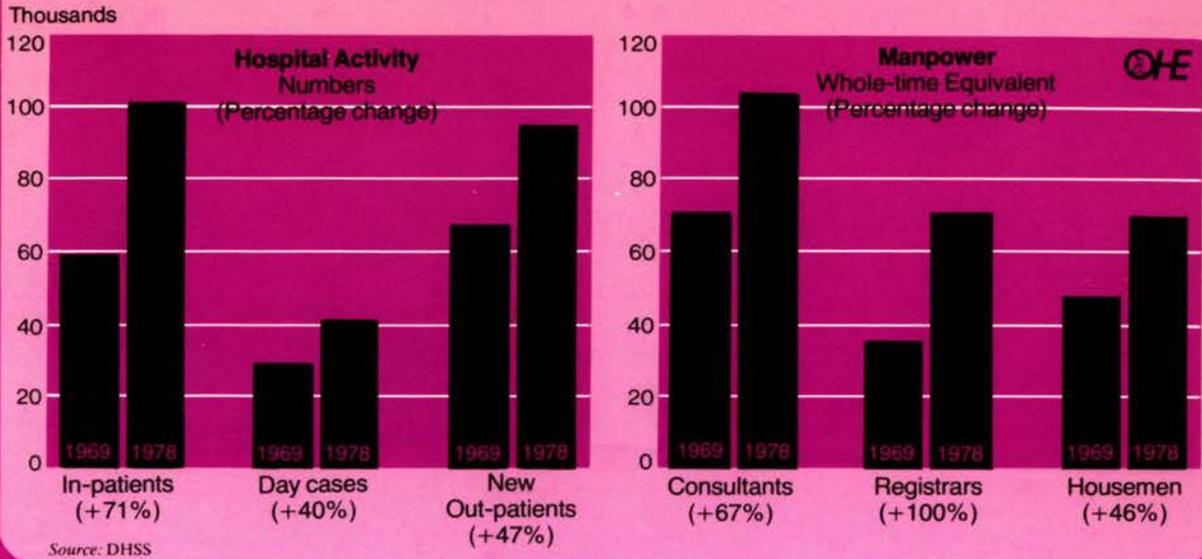


Figure 8 Radiotherapy: 1969-78.

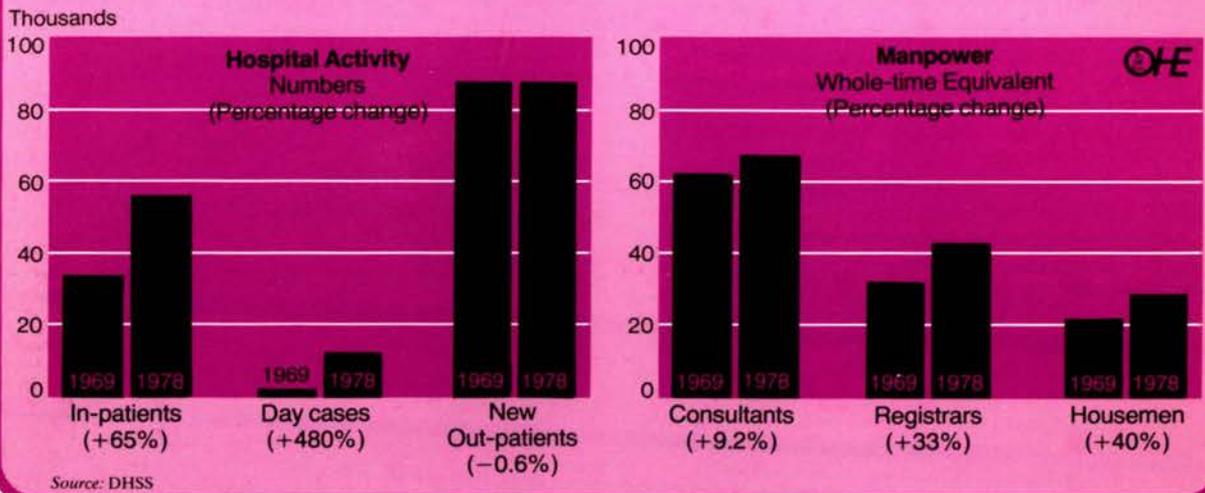


Figure 9 ENT surgery: 1969-78.

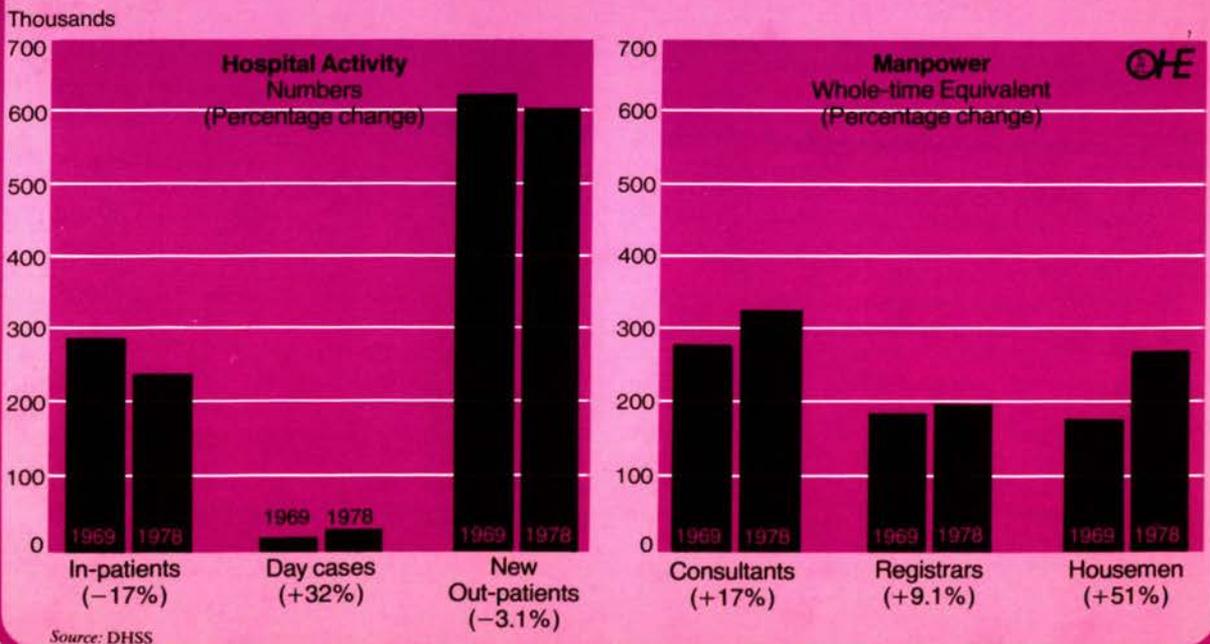


Figure 10 Rheumatology and Rehabilitation: 1969-78.

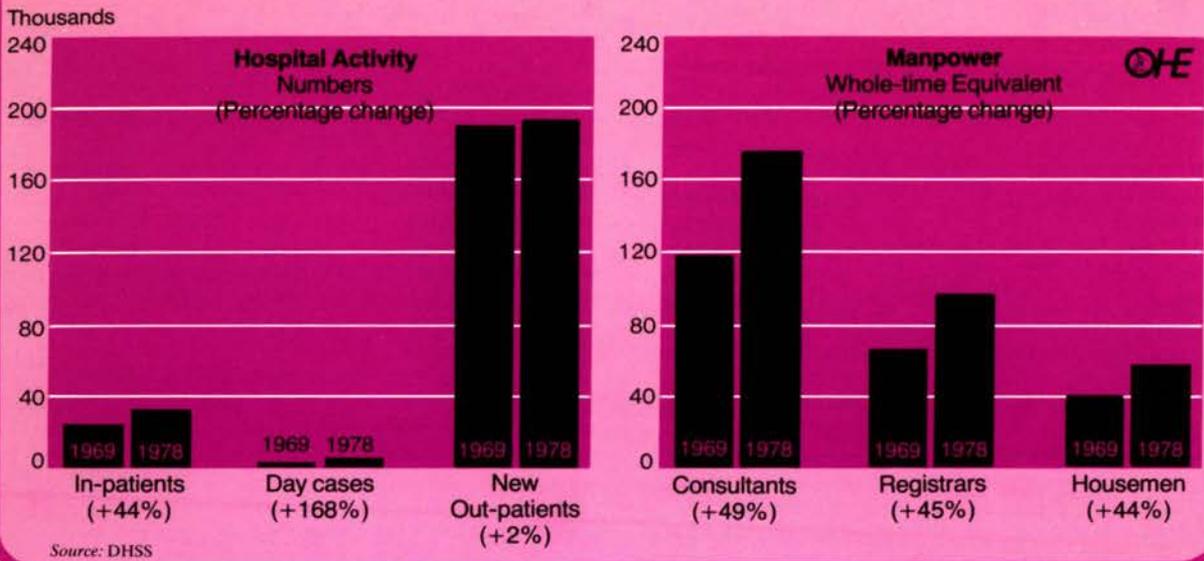


Figure 11 Cardiology: 1969-78.

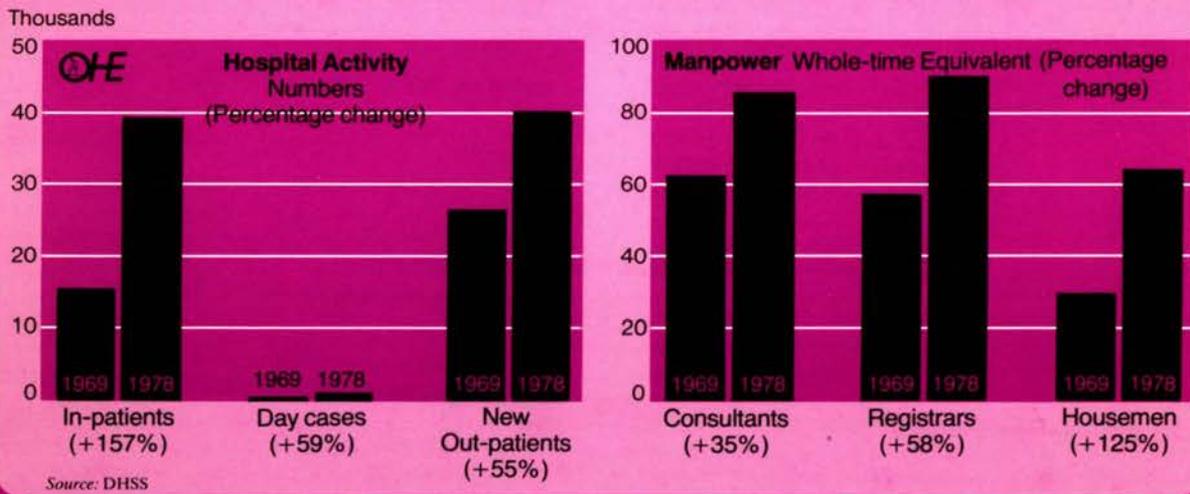
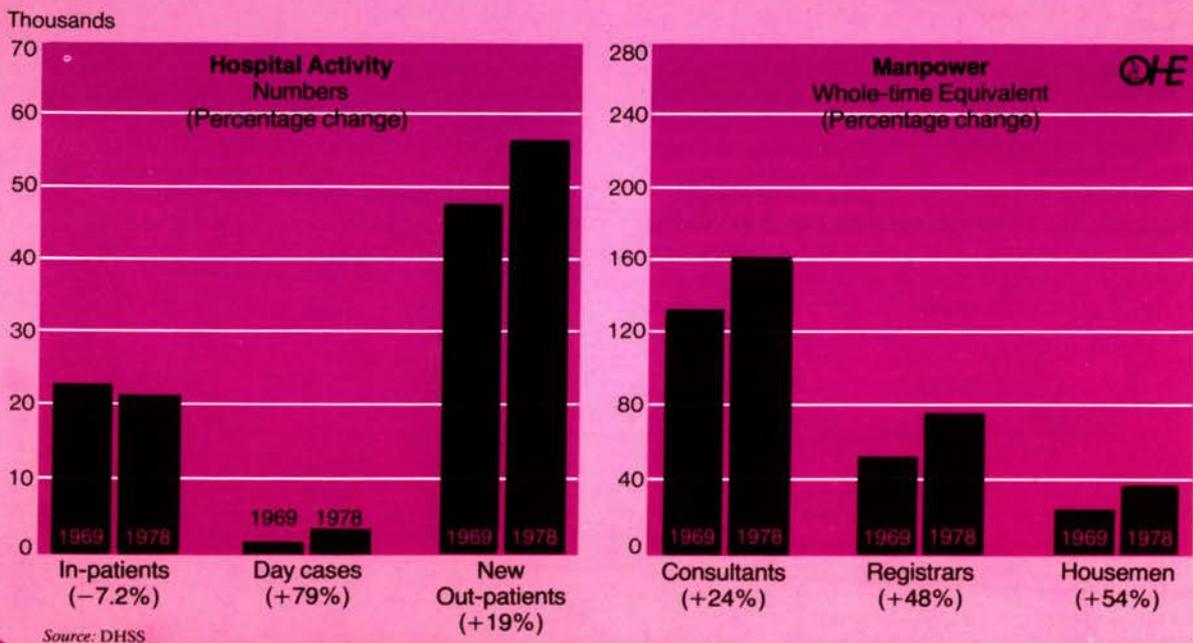


Figure 12 Dermatology: 1969-78.



misleading impression because specialties vary considerably, and some rely to a large extent on out-patient consultations or day care rather than in-patient treatment in hospital. Third, and most seriously, by aggregating the data for different specialties they conceal more than they reveal. In order to overcome these problems, the DHSS analysis looked individually at different specialties and analysed activity and manpower in more detail.

Table 1 shows for individual medical and surgical specialties the change in the numbers of in-patients (as measured by discharges and deaths) and in the numbers of consultants. This Table suggests remarkable variations between the specialties. In order to examine the subject further, Figures 7 to 12 show a more detailed relationship between the changes in activity and manpower between 1969 and 1978 for some of the specialties. For both surgery and medicine one specialty has been selected where the increase in consultants paralleled the increase in in-patients; one where numbers of patients increased faster than consultants; and one where numbers of patients decreased while numbers of consultants increased. These examples bring out the difficulty in interpreting the relationship between manpower and activity even when this is analysed according to individual specialties. This arises because the measurement of 'activity' relies only on published data, which give no measure of actual workload.

In the six figures the first three pairs of columns show the numbers of in-patients (measured as discharges and deaths), the numbers of day cases, and the numbers of new out-patients seen in 1969 and 1978 respectively. The second three pairs of columns show the numbers of consultants, the numbers of senior registrars and registrars, and the numbers of senior house officers and house officers working in the specialty, again in 1969 and 1978. The comparison between the two columns in each pair shows the increase or decrease between the two years and this percentage change is also given numerically in brackets.

Figure 7 shows the picture for Urology, a surgical specialty concerned with the urinary tract. Over the decade there has been a considerable shift of cases from 'general surgery' to the more specialised departments of the urologists. The resulting situation is a straightforward one, in which workload on each of the three measures in urology has risen more or less to the same extent as manpower. It is only the number of senior registrars and registrars which has increased rather faster than other grades of manpower and than numbers of patients treated. However overall the pattern gives no cause for comment. Workload and manpower are rising more or less in parallel.

Figure 8 relates to Radiotherapy, the use of radiation in the treatment of cancer. Here the number of new out-patients seen has remained fairly constant, but in-patients have increased by two-thirds and the very small number of day cases has increased almost six-fold. On the manpower side the number of consultants has increased by only 9 per cent, while the smaller numbers of training grades (registrars and house officers) have increased between 30 and 40 per cent. Thus in this specialty the picture appears to be one of increased productivity. This is no doubt partly due to improvements in radiotherapy equipment and in part is probably also due to the fact that some radiotherapists are now using chemotherapy either instead of or together with radiotherapy. The prescribing of medicines, in place of other forms of therapy, is generally more efficient both in terms of manpower and hospital bed utilisation.

Figure 9 shows for Ear, Nose and Throat Surgery the reverse of the situation just described for radiotherapy. Numbers of in-patients and new out-patients have fallen, and the small increase in day patients does little to offset this general reduction in hospital activity. Manpower, on the other hand, has increased in all grades — 17 per cent for consultants, 9 per cent for senior registrars and registrars, and 51 per cent for senior house officers and house officers. Thus on the basis of available published evidence the workload of ENT surgeons appears to have fallen. However this could be a very misleading conclusion, because some of the simpler operations, such as the removal of tonsils and

adenoids, have declined, while more complex types of surgery, such as the correction of certain forms of deafness, have increased. Nevertheless if one combines the number of operations for removal of tonsils and adenoids with those for 'incision of the eardrum' the overall reduction of 51,000 operations between 1970 and 1978 exactly equals the total reductions in all ENT operations. These statistics suggest that the very large reduction in relatively minor ENT surgery is explained more in terms of a total reduction in workload than in terms of a large numerical shift to complex surgical procedures. It is perhaps surprising that no detailed analysis of the workload in ENT surgery has been undertaken to justify the contrast between the rising numbers of surgeons and the falling numbers of patients seen. This is particularly so since there are about 100,000 patients waiting for ENT surgery in England.

Figure 10 turns from surgery to one of the medical specialties, Rheumatology and Rehabilitation. This echoes the overall impression gained from Figure 6. Numbers of in-patients have risen more or less in parallel with manpower, although numbers of new out-patients have remained fairly static (there was a large shift between 'rehabilitation', which has fallen, and 'rheumatology', which has risen). All grades of manpower have increased over the decade by between 44 and 49 per cent; the number of in-patients increased by 44 per cent, the small number of day cases by 168 per cent and new out-patients by only 2 per cent.

Figure 11 shows the situation for Cardiology. Here activity seems to have risen faster than numbers of doctors. For in-patients, there was an increase of 157 per cent, while the number of consultants rose by only 35 per cent. It is only for housemen that the increase of 125 per cent approaches the rate of increase for in-patients, and the number of housemen is smaller than the number of consultants or registrars.

The final example in this set of analyses covers Dermatology. As Figure 12 shows, the numbers of consultants has risen by 24 per cent, while registrars and house officers have risen by 48 per cent and 54 per cent respectively. On the 'output' side, the number of in-patients has fallen by 7.2 per cent; the small number of day cases has risen by 79 per cent; and new out-patients have increased by only 19 per cent. Although it is difficult to quantify exactly, workload (as measured by published data) seems in this case to have risen more slowly than numbers of medical staff. Once again, as in the case of ENT surgery, it is possible that the cases seen in 1978 were more 'difficult' than those seen in 1969.

Taking a very broad comparison between total hospital medical manpower and workload in 1978, one dermatologist 'equalled' 76 in-patients and 205 new out-patients, one cardiologist 'equalled' 164 in-patients and 168 new out-patients, and one rheumatologist 'equalled' 99 in-patients and 589 new out-patients. However, a much more detailed analysis would be needed before any conclusion could be drawn either from the apparently different changes in workload over the past decade or the comparative numbers of patients seen per doctor in the three specialties in 1978.

Turning now for comparison from acute medicine to an example covering the care of the chronic sick, there also appears to have been a larger rise in numbers of geriatricians than in the numbers of cases treated by them in hospital. Between 1968 and 1979, the number of hospital medical staff specialising in geriatrics in England rose from 509 to 1,329. Over the same period the number of available beds remained constant at 55,000, the annual numbers of discharges and deaths rose from 165,000 to 239,000, day cases accounted for very small numbers, and new out-patients rose from 21,000 to 36,000. Taking in-patients alone, discharges and deaths per member of the medical staff fell from 324 in 1968 to 180 in 1979. Thus here again there seems to be scope for more detailed studies to measure the changing workload of geriatricians in more broadly based terms, particularly including an evaluation of their important work in domiciliary visiting in order to reduce the need for hospital admission.

Nurses and midwives

The previous section has discussed the variable pictures which emerge when changes in medical manpower are related to changes in activity in the acute hospitals. There would certainly seem to be some indication that different specialties have performed differently in this respect, and more analysis is needed. The same seems to be true when one looks at the relationship between medical and nursing manpower.

Economists have argued that when a shortage exists in one class of scientific manpower, their salaries will rise, and parts of the work which they previously performed should devolve into less highly paid and less highly trained

personnel.² In hospital, this would imply that some of the less skilled work of doctors should be taken over by nurses, while at the same time 'domestic' duties of nurses should be passed on to unqualified staff. A crude analysis of medical manpower, which is all that this *Briefing* is attempting, does not allow of any comment as to the extent to which this is happening in NHS hospitals. It is, however, worth noting that numbers of hospital doctors have risen considerably faster than numbers of hospital nurses. Furthermore, numbers of ancillary staff have remained virtually constant in the 1970s. Hence the hospital service appears to be operating in the reverse of the way predicted by economic theory. As salaries rise, numbers of the most highly qualified staff are rising fastest while numbers of unqualified staff are not increasing. Beyond this, it is impossible to say anything about the 'productivity' of nursing staff in hospital. In the community however, it is reasonable to relate the significant increase in nurses and health visitors to the ageing population. Figure 13 shows the pattern of the ageing population in England and Wales since 1960, projected forward to the end of the century. The numbers over the age of 85, who are those most in need of medical and social care, rose from below 300,000 in 1960 to 500,000 in 1980.

Turning to midwives, it has been pointed out that the total numbers employed in the community and in hospital rose from 16,100 in 1959 to over 20,000 in 1979. Over the same period the birthrate fell considerably, and Figure 14 gives estimates of the number of deliveries per midwife per year over the past four decades. In 1951, each midwife was responsible for approximately 53 births; by 1979 the number had fallen to 32. That is one birth every eleven days.

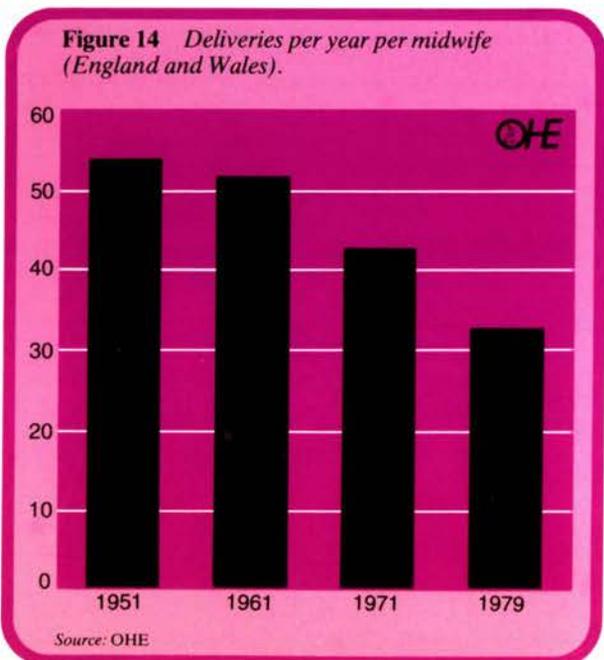
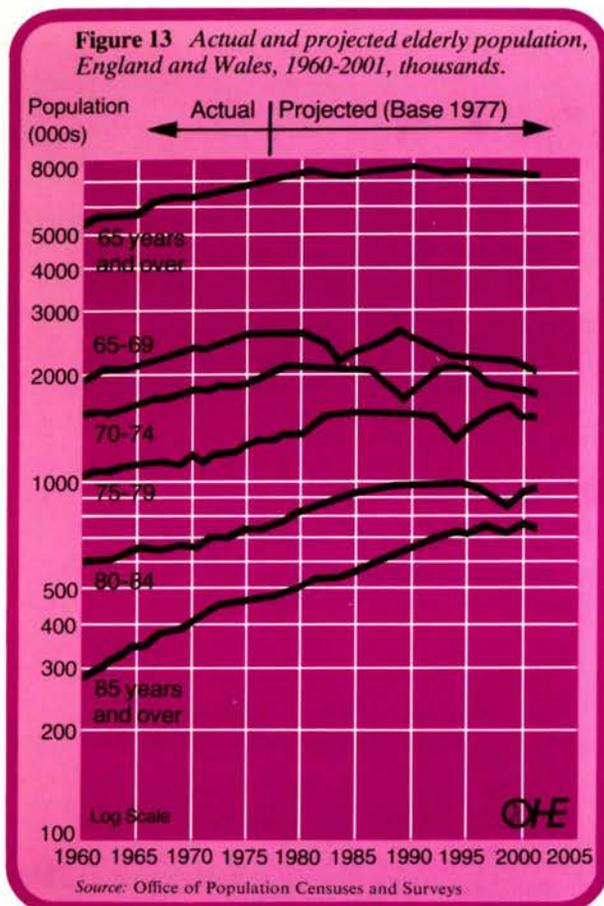
On the face of it this seems a surprisingly small workload for the midwives. However they are of course responsible for both antenatal and postnatal care, and if one assumes that they are attending the mother for about seven months before the birth and a month afterwards, each midwife will at any one time have under her care about twenty-one mothers.

There is another consideration with midwifery. In the measures of 'activity' discussed so far it has been impossible to include any measure of the quality of care. In the case of midwifery — and obstetrics generally — however, there is a quantifiable measure which reflects the quality of care. This is perinatal mortality. Other factors, such as housing and nutrition, may also affect the survival of an infant at birth, but in general it must to some extent indicate the success of the medical care of the mother and her baby.³

Figure 15 shows that in England and Wales, as in other advanced countries, perinatal mortality fell steadily over the past fifteen years. In England and Wales it fell from 27 per 1,000 live and still births in 1965 to just over 15 in 1978. Other countries have even lower rates, but the decline in mortality in this country has recently kept pace with elsewhere. Thus the apparently declining workload of midwives in Britain has been associated with a marked improvement in the 'outcome' of their care. It would require an international study to determine whether other countries had had the same proportionate increase in numbers of midwives as England.

General practice

The only national measure of general practitioners consultation rates with their patients is available from the General Household Survey, which has been carried out annually by the Office of Population Censuses and Surveys since 1971. The Tables in the Report of this survey give the number of consultations each year in which the patient actually sees his general practitioner (as opposed to telephone requests for repeat prescriptions, for example). For Great Britain as a whole the per capita consultation rate for women has fluctuated between 3.8 and 4.4 consultations



² This theory was particularly expounded in the so-called Blank and Stigler (1957) 'shortage diagram'.

³ The first significant drop in infant mortality in Britain started to occur in the early 1900s, coinciding with the Midwives Act of 1902.

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Figure 13 Actual and projected elderly population, England and Wales, 1960-2001, thousands.

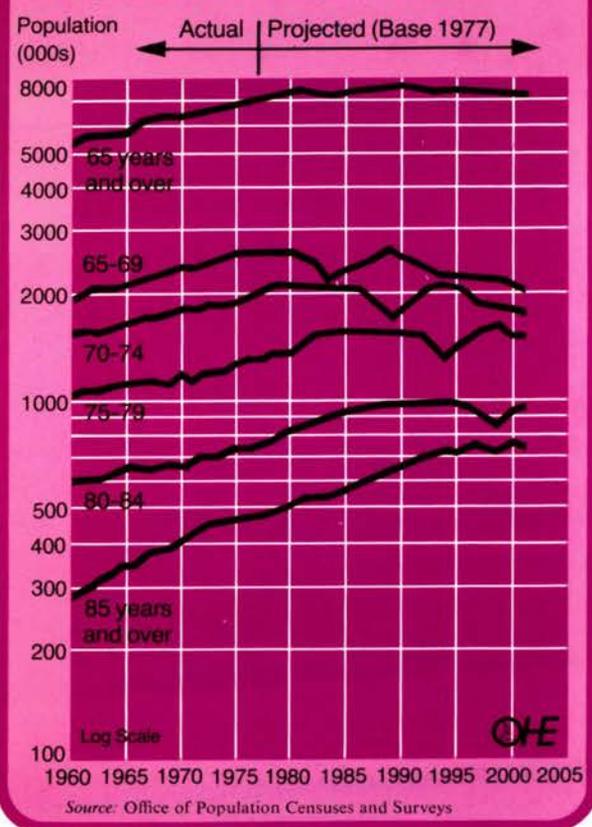


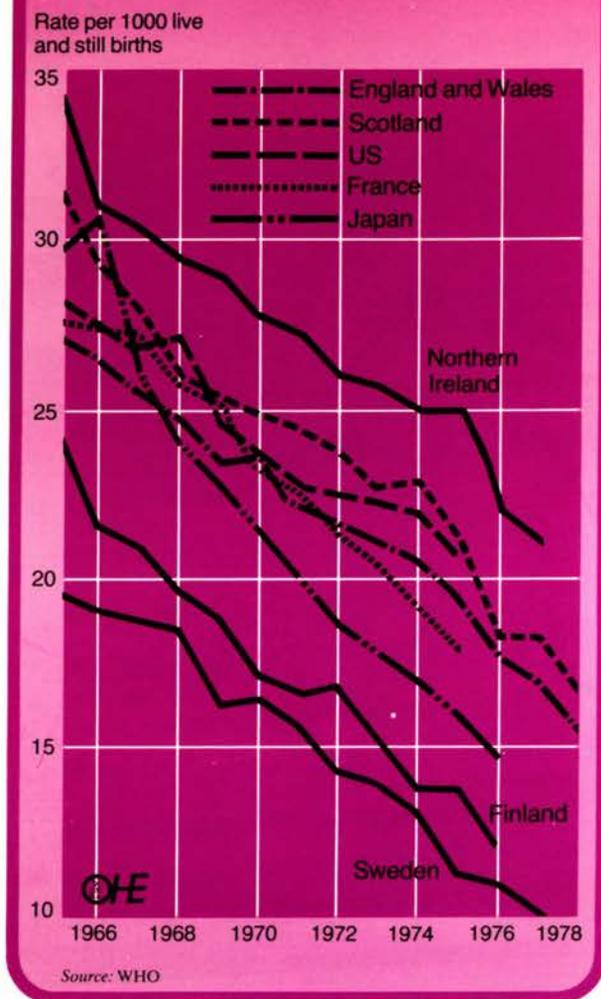
Figure 14 Deliveries per year per midwife (England and Wales).



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Figure 15 Perinatal mortality 1965 onwards; selected nations



per year. The figures for 1971 and 1978 were 4.3 and 4.4 respectively. For men the rate is lower, having fluctuated between 2.9 and 3.5 consultations per year. For 1971 and 1978 the figures were 3.2 and 3.5 respectively. (The figures for England and Wales alone were for most years identical to those for Great Britain, but they were not published for 1971 or 1978.) Thus to all intents and purposes the general practice consultation rates have remained steady during the 1970s.⁴

It has already been pointed out that since 1971 general practitioners have also referred a constant number of patients on to hospital as out-patients. Thus over the decade the number of patients whom general practitioners see and treat themselves has remained constant. However between 1971 and 1980 the number of general practitioners increased by 15 per cent, and their numbers are still increasing by 2 per cent per year. To account at least in part for this increase, general practitioners have taken on new responsibilities. In particular, they now undertake family planning activities, and they are encouraged to provide preventive services such as cervical cytology. It is also reasonable to assume that with an ageing population each consultation may on average be more arduous.

However one real measure of 'productivity' in general practice work is not available. This is the amount of time actually spent in contact with the patient. It has been estimated that in the late 1960s this was about six minutes per consultation (Balint and Norell; 1973). If 'workload' measured simply by consultation time were to have increased in proportion to the increase in numbers of general practitioners, this would now be seven minutes. It is hardly surprising that no research exists to see whether such a finely tuned change in general practice activity has in fact

occurred. This merely emphasises once again the difficulty of relating meaningful measures of activity to changes in manpower.

Discussion

This *Briefing* has raised a large number of questions about professional manpower in the NHS. It has not attempted to reach any conclusions, but it has pointed the way to a number of areas where further investigation seems to be desirable.

In particular, it was automatically assumed during the 1960s and early 1970s that any increase in professional manpower in the National Health Service must bring corresponding improvements in the quality of care. In economic terms, an increased input in terms of manpower was more or less equated with an increase in 'output'. During the early 1980s, a more critical attitude has started to emerge. The Review Body for Doctors and Dentists Remuneration has asked the Office of Manpower Economics to carry out a study on the relationship between manpower and activity in the Health Service, and the Department of Health and Social Security's 'Report on a Study of the Acute Hospital Sector' (which has been quoted in this *Briefing*) is another aspect of the more critical attitude towards the steady increase in professional manpower in the NHS.

The examples from particular acute hospital specialties which have been quoted above underline the problem in measuring 'productivity' of medical care in terms of health-related outcomes. Some specialties, such as cardiology and radiotherapy, appear to have increased their activity (in crude terms) faster than their numbers of doctors. Others, such as ENT surgery and dermatology, seem to require more sophisticated forms of explanation for the fact that crude measures of activity have, at best, risen more slowly than numbers of doctors. There are many ways in which a disproportionate increase in manpower might be explained. One would be an increase in the complexity of care. Arising from this, it can be argued that the recent dramatic developments in medicine and surgery have created a 'technological imperative' which itself calls for more manpower. But the allocation of manpower between the specialties does not altogether support this contention. Instead there may be inbuilt mechanisms which drive forward the 'demand' for medical and surgical manpower almost irrespective of the technological developments within the various specialties.⁵

The role of pharmaceuticals might also be mentioned. In rheumatology and cardiology there have been significant pharmacological advances improving the efficiency of treatment in hospital. In rheumatology, there has also, of course, been the opportunity for physicians to pass more difficult cases on to the orthopaedic surgeons for effective joint replacements.⁶ There is a different situation in dermatology, where the important pharmacological advances have in the main enabled general practitioners to treat simpler cases effectively with steroids and antibiotics instead of having to refer them to hospital. The consultants in hospital have been left with the more intractable cases, such as psoriasis, for which no breakthrough has in the past occurred.

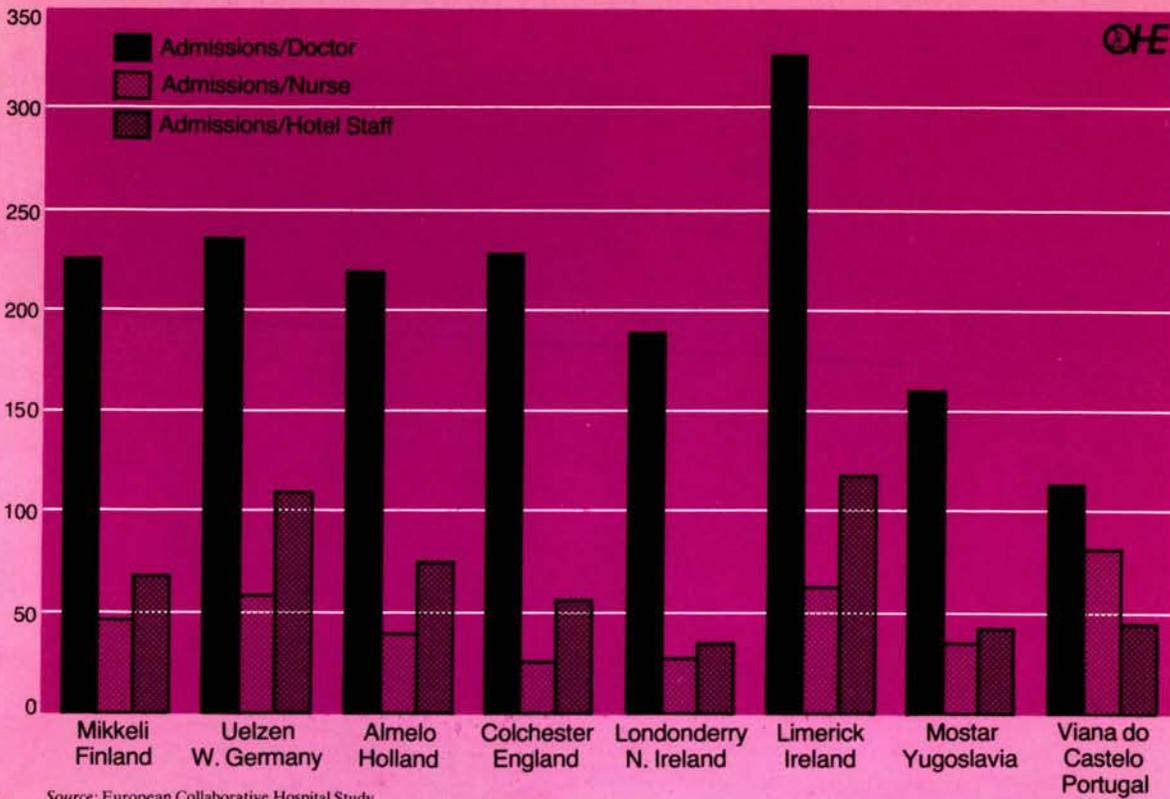
Perhaps the most surprising fact is that so little study seems to have been devoted in the past to this whole subject. From the evidence set out in this *Briefing*, it would appear that such investigations as are now being initiated

4 In two earlier morbidity surveys conducted in 1955/56 and 1970/71, the numbers of consultations per patient per year were 3.7 and 3.0 respectively. Bearing in mind that the bases of these surveys were different from those of the General Household Survey, they still suggest that general practice workload may have declined slightly from its 1950's level to that of the 1970s (Crombie; 1974).

5 The growth of private practice is sometimes advanced as an explanation for falling rates of activity within the NHS. However its small extent cannot support this explanation.

6 In 1978 approximately 19,000 hip replacements were undertaken under the National Health Service in England and Wales.

Figure 16 Manpower productivity: Ratio of hospital admissions to members of staff: eight European towns: 1978.



are seriously overdue. The problem will be to establish more meaningful measures of 'output' than those derived from currently available statistics.

Furthermore, the need for further investigation is not confined to acute medicine and surgery. The medical, nursing and midwifery professions as a whole can expect more scrutiny of their activity in the future as government becomes more concerned about rising health care costs. For example, the comparative rates of growth in numbers of nurses and doctors in hospital raises interesting questions. A recent editorial in the *British Medical Journal* (1981) questioned whether the scope for delegation of work, which might be expected on economic grounds, is being fully exploited.

The distribution of manpower between the hospital and the community is another area for study and research. British doctors have tended to be concentrated more in hospital in recent years. Yet in 1974 Beeson suggested that the problems of medical care in the very different situation of the United States arose largely because of their excessive concentration of doctors into the specialties rather than into general practice. It is ironic that the National Health Service still seems to be following this unfortunate example.

Finally, the further investigations which seem to be called for need to be put on an international footing. Again, the Department of Health has already initiated international studies both in Europe and in North America, and academic departments have for some time been concerned to look at comparative measures of activity in different countries. One example of this is the European Collaborative Hospital Study organised by the London School of Hygiene and Tropical Medicine in 1978. Figure 16 shows what they describe as the 'manpower productivity' from eight different European towns, measured in terms of hospital admissions per doctor, per nurse and per member of hospital 'hotel staff' (i.e. catering and domestic workers). In this comparison the English town of Colchester seems to show up relatively well in relation to the doctors, but less well for the nurses. More detailed studies of this sort need to be done in the future and results need to be carefully interpreted.

Manpower costs represent about two-thirds of the total expenditure on the National Health Service. There is no longer any justification for assuming that increased numbers and expenditure on manpower can automatically be justified in terms of the extended scope of the service which they provide. It would be sound economic policy to try to relate more closely some sophisticated measurement of the activities of the caring professions to the steady growth in their numbers. One way to do this would be to introduce unit costing per item of service into the National Health Service. This is a difficult task. However there is no doubt that one way or another there is an urgent need to take steps to get a better measure of the 'output' from the work of the doctors, nurses and midwives in the NHS. Without a proper measure of professional activity, manpower planning in the NHS is to some extent a meaningless exercise.

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