TALKING POINT

Medical and dental training and staffing in a region —the long and Short of it

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Medical manpower planning is hardly a science. It certainly is not exact. The agreement between the Joint Consultants Committee and the health departments in 1971 dealt with ratios of junior to senior hospital staff and said nothing about actual numbers. The Progress Reports concerned the careers of doctors, rather than the needs of patients.[1] National medical staff tables from the Department of Health and Social Security show numbers of doctors employed on a given date, not numbers of posts available or how many people are required to do the work and to train for the future. There are well known regional differences in medical staffing, which have altered little and bear no measured relation to indices of health, sickness, and death.

The manpower planning plot comprises an annual dialogue between those who are responsible, centrally, for balancing national needs with the availability of potential new consultants, and those responsible at regional level for trying to achieve perceived priorities. The subplot consists of a further dialogue between regions, always conscious of resource constraints, and districts all seeking to fulfil, in implicit competition, their individual operational plans. The whole play is subject to sporadic overriding views of the treasury. All these factors effectively shield the Central Manpower Committee from knowing the real demand for additional medical staff. Nobody knows whether lack of consultant expansion is mainly due to poverty, professional intransigence, or incompetent planning, but strong views are heard.

After the publication of the government's response[2] to the Short report on medical education and numbers of doctors[3] the Northern Region indicated to the Secretary of State that it wished to carry out a regional review of medical and dental manpower and to prepare a strategy for the next 15 years.

It is difficult to assess exact changes in medical and dental staffing since the Progress Report of 1971 because the 1974 NHS reorganisation redefined the boundaries of the Northern Region. From 1975 to 1982 the number of medical consultant staff in the region rose from 682 whole time equivalent to 771·3 whole time equivalent: the equivalent of an annual increase of about 1·8%. An annual increase of 4%, as agreed in the progress report, would have produced a further 126 whole time equivalent medical consultants during this seven year period.

Contrary to the aim of the Progress Report, the ratio of junior to senior hospital staff rose from 1·3:1 in 1971 (United Newcastle hospitals and regional hospital board combined) to 1·7:1 in 1982 (regional health authority).

Procedure

During 1982-3 districts in the Northern Region were visited by the regional specialist in community medicine with responsibility for medical and dental staffing, usually with the postgraduate dean. At about half the visits districts were represented by the chairman of the medical staff or executive committee, the district medical officer, and perhaps a small number of clinical colleagues. Otherwise districts' clinical staffs were represented by spokesmen for each division or clinical specialty. For the one district unable to arrange a visit, information was obtained by correspondence.

The purpose of the visits was explained in advance. Firstly, they were to establish an accurate baseline for medical and dental staffing at all levels, concentrating on established numbers of posts and sessional commitments rather than numbers of people who happened to be employed on the day of the visit. Secondly, they were to collect views on medical and dental staff requirement for the next 15 years, concentrating primarily on consultant staff needs. The basis of the inquiry was also explained: the belief that only at district level can the need for trained specialists be estimated, as the figure must arise out of plans for what patient services the district hopes to provide. Junior staffing, however, should be looked at regionally, to estimate the appropriate numbers of trainees to supply future staff in hospitals, general practice, and community medicine, and to assess where training should best be carried out. There might then be gaps between the desired total of trainees with consultants and the number of people needed to do the hospital work, so that possibilities might exist for acceptance of "sponsored" trainees from abroad or for employment of clinical assistants and associate specialists. Regional and subregional specialties would obviously require thought about sessional commitments at district level, and there would be academic posts to be taken into account. Assurance was given that the region did not envisage a future staffing pattern with wholesale removal of junior staff from non-teaching hospitals but saw a gradual move towards the best use of teaching and non-teaching hospital experience for as many trainees as possible.

Progress

District visits gave far better baseline data on staffing than any that were previously available.

Forecasts of consultant needs to the late 1990s were provided with much forethought and often with precision. Some consultants believed that their pattern of work would change substantially; most thought that it would not alter greatly; all recognised that there could be no further large expansion of junior staff to "support" new consultants.

It was rumoured that a senior registrar had advised colleagues against participation in district meetings because of the implied threat to junior doctors' jobs. Nevertheless, there was full cooperation at all the meetings and those who attended—including junior doctors on several occasions—entered into the spirit of the exercise. There was naturally some scepticism about the outcome, but it was generally understood that the next stage would be to estimate junior staff requirements and the overall implications for the region. A further round of district visits would then be necessary to discuss interim conclusions in the light of reaction from the regional health authority, the regional medical committee, the regional postgraduate committee, and the regional manpower committee.

As doctors in the region became aware of this study several individuals and groups offered more detail about their own specialties and subspecialties. Some specialty groups and postgraduate education committees are continuing to study the manpower implications of postgraduate training for their own disciplines in the region, and this is helpful.

Interim conclusions

The first round of district visits has been completed and some conclusions have been deduced about junior hospital staffing.

Two general points should be made. Firstly, estimates of consultant manpower requirements for the next 15 years, derived from district visits, were based on services to patients. The estimates were not influenced by how much money might be available to pay staff, or by calculating junior to senior staff ratios; they were not related to how many doctors might be available or were seeking promotion. They were based on recognised service deficiencies, planned capital and service developments, expected innovations in clinical practice, and an estimate of what buildings and facilities would be available. They assumed that a reasonable but not excessive amount of support would continue to be available from junior staff, and that planning populations would not change much during the next 15 years.

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Secondly, the conclusions derived about junior staff requirements make an assumption of regional self sufficiency. An attempt was made to estimate how many senior house officer, registrar, and senior registrar posts would be needed in the region to meet the expected needs of the region for trained staff in hospital and community medicine and general practice. The concept of self sufficiency was used to provide limits within which calculations could be made; it was not meant to imply that doctors in training could not move from region to region.

The total number of requests for additional consultant posts was 539. This would not double the number of consultants, as suggested in the government reply's to the Short report, but would represent a 70% increase during the 15 years from 1982. Such expansion would need a sustained, average annual increase in medical and dental consultant staff of 36 whole time equivalents: 50% above the highest annual increase achieved to date.

The probable need to replace consultants leaving the region up to the late 1990s was estimated by reviewing the years 1977-82. In this six year period 223 consultants left the region for all reasons, their ages ranging from 32 to 67 and averaging 57·6. Applying that average age of departure to the existing consultant and associate specialist work force in the region indicated that 628 replacements would be needed during the next 14 to 15 years.

To allow for replacement and expansion, therefore, 1167 medical and dental consultants would have to be appointed over about 15 years, at an average of 77 to 78 a year.

No attempt was made to study general practice in detail, but it is necessary to take account of its training needs in estimating required numbers of junior hospital posts.

In 1983, 113 senior house officer posts in the region were in regular use in vocational training schemes for general practice. In addition, allowance must be made for those doctors wishing to undergo general practice vocational training independently of such schemes, either from first choice or after changing from other career choices. There were 1465 principals in general practice in the region in 1982; age distribution and extrapolation from national data suggest that 50 to 55 appointments a year would be needed to replace losses from retirement and other causes. Figures since 1980 show an additional need for 25 to 30 principals a year for expansion; this accords with the current national growth rate of almost 2% a year. This rough estimate of 80 vacancies a year is consistent, allowing for some loss, with the current regional number of about 95 trainees. If the principle of regional self sufficiency, as in the hospital specialties, is applied these trainees would require about 190 senior house officer posts in appropriate hospital specialties to complete their minimum postgraduate training. To assess how this demand might be distributed the estimated number of posts for general practice training in each relevant specialty was taken as the number currently included in the vocational training schemes in the region multiplied by 190/113.

Requirement of junior hospital posts

As the consultant establishment grows the number of trainees required for annual consultant replacement increases. But to achieve the growth described above more trainees would be required to provide for expansion in the consultant grade than to replace existing consultants who retire or leave for other reasons. It would be reasonable to hope that as the desired number of consultants for the year 2000 was approached the rate of expansion would decline. Therefore, in calculating required numbers of junior hospital posts an average annual figure of 78 consultant appointments was taken over the whole 15 year period, on the working assumption that a smaller consultant establishment and a faster rate of growth in the earlier years would roughly balance with a larger establishment and a smaller rate of growth in the later years.

If we assume that a doctor spends an average of three and a half years as a senior registrar, with 5% allowed for drop outs, and an average of two and a half years as a registrar, with a 10% drop out, the annual appointment of 78 consultants would require around 287 senior registrar or equivalent posts and 225 registrar posts. If a doctor works for an average of two years in the senior house officer grade, and we add an estimated 190 senior house officer posts for general practitioner vocational training (allowing for 10% drop out), this would give a total regional senior house officer requirement of 388 posts.

The result is a total in the senior house officer, registrar, and senior registrar grades of 900 posts, compared with the present establishment of 1201. In other words, 301 of the present posts in these grades would seem to be surplus to training requirements.

For regional self sufficiency 136 additional senior registrar posts would be needed in the region (a 90% increase). This would almost be balanced by an apparent surplus of 121 registrar posts in relation to regional needs for promotion. At first sight, therefore, the numerical problems of career progression could be almost completely solved by converting about 125 registrar posts into senior registrar ones. This does not allow, however, for differences between specialties, and it would not leave any residual capacity to take registrars for training from overseas. The ratio of consultants to senior registrars, registrars, and senior house officers by the late 1990s would be 1·5:1.

With different assumptions about length of training the regional senior registrar requirement for self sufficiency could not be met by redesignating registrar posts, even if educational and other requirements could be satisfied. For example, an average of four years' tenure as a senior registrar would require 177 extra posts in the region; with three years' average tenure in the registrar grade the "surplus" of registrar posts would be only 75, and with an average of three and a half years in the registrar grade, only 30. There might, however, be senior house officer posts that should more properly be designated as registrar posts, and this element becomes important in looking at individual specialties.

Depending on the assumptions made about the length of postgraduate training, the total reduction in numbers of junior medical staff for purposes of training and promotion would be between 282 and 374. When put together with the consultant increase of 523 (excluding dental specialties) over the same 15 year period the resulting total number of hospital staff, excluding preregistration house officers, clinical assistants, and hospital practitioners, would be between 222 and 314 greater than at present.

Individual specialties

The table shows how some of the major specialties would vary if the same criteria were applied to each—that is, taking the estimated increase in the number of consultants from districts, deriving the number of trainees required for self sufficiency, and adding the number of posts needed for general practitioner vocational training.

Two specialties, pathology and radiology, would require an increase over the present establishment of junior staff to meet their recruitment needs for consultants. In both cases the expected consultant expansion would be over 70%; the increase in total staff in each specialty would be between 66% and 76%, and the resultant ratios of consultants to junior staff would be 1·66:1 and 3·14:1, respectively. These are both self contained specialties in which the existing ratio of junior to senior staff is low and in which there is no demand for vocational training posts for general practice.

Anaesthetics is a larger specialty in which there is no demand for general practitioner vocational training but the existing ratio of junior to senior staff is high. The desired consultant expansion (56%) would result in a 20% increase in the number of anaesthetists

*Illustration of potential staff changes**

Specialty	Increase inconsultants	Consultant expansion	Junior staff change needed for career promotion and general practitioner vocational training†	Resultant consultant:junior ratios†	Total staff change†
Obstetrics and gynaecology	28	49%	−38 to −45	0·86:1 to 0·92:1	−10 to −17
Paediatrics	32	86%	+6 to −1	0·82:1 to 0·88:1	+38 to +31
Psychiatry	82	72%	+12 to 0	1·44:1 to 1·58:1	+94 to +82
Anaesthetics	77	56%	−22 to −36	2·03:1 to 2·34:1	+55 to +41
Pathology	56	71%	+38 to +30	1·66:1 to 1·84:1	+94 to +86
Radiology	45	73%	+13 to +7	2·67:1 to 3·14:1	+58 to +52
Medicine and medical specialties	84	49%	−87 to −104	1·39:1 to 1·52:1	−3 to −20
Surgery and surgical specialties	109	52%	−146 to −167	1·53:1 to 1·70:1	−37 to −58

*Variations depend on assumptions about time spent in training grades.
†Excluding preregistration posts, clinical assistants, and hospital practitioners.

of all grades, with a consultant to junior ratio of over 2:1 and a fairly modest reduction (22 to 36) in the number of junior posts needed.

In paediatrics and psychiatry the considerable consultant expansion envisaged, combined with the demands of vocational training for general practice, would result in a need for at least as many junior posts as now exist, but with a distribution shifted towards senior registrar posts. The total number of staff would rise greatly, especially in psychiatry.

The desired consultant expansion in obstetrics and gynaecology would seem to be lower (49%) than in the specialties so far discussed. It would imply a need for junior staff considerably below the existing establishment, even when general practitioner vocational training requirements are taken into account. In fact, the total number of staff available in the specialty on this basis would be 10 to 17 below the present establishment, depending on times spent by doctors in training posts. If 38 to 45 junior posts were made available in the region for trainees from overseas intending to return home there would be a small increase in the regional total of staff in the specialty, and the overall number of junior posts would remain the same. Within this total, however, it would be necessary to establish about 12 additional senior registrar posts to achieve regional self sufficiency.

The most striking positions are in the medical and surgical specialties.

General medicine is aggregated with chest medicine, nephrology, dermatology, neurology, clinical neurophysiology, cardiology, rheumatology, genitourinary medicine, and geriatric medicine because of the common needs for training, particularly at the junior levels. With an expected 49% consultant expansion in these specialties taken together and even allowing for the posts used for general practitioner vocational training a gross "excess" of 87 to 104 junior posts would occur. This is entirely in the senior house officer grade, since the regional "surplus" of about 20 registrars would almost exactly balance the regional "shortage" of senior registrar posts. Various assumptions may be made about how "surplus" senior house officer posts in medicine might be used—for instance, to provide an important element of "general professional training" for doctors wishing to specialise in psychiatry, anaesthetics, radiology, radiotherapy, community medicine, haematology, etc. Such usage would have much to recommend it on educational grounds, and in one way or another a good deal already occurs. It would imply either a need for fewer training posts in the specialties concerned or an increase in the total length of training for those specialties. Even making generous allowance for the development of general professional training along these lines, there would still seem to be heavy dependence on the senior house officer grade for service rather than for training purposes in the medical specialties. Twenty to 40 senior house officer posts added for general professional training purposes, however, and a similar number of extra senior house officer posts for overseas trainees would still create only a modest growth in the total work force in the medical specialties.

On the surgical side, when general surgery, urology, orthopaedics, accident and emergency, ear, nose, and throat, ophthalmology, neurosurgery, and plastic, paediatric, and cardiothoracic surgery are aggregated, there is an even larger "surplus" of senior house officer posts (146 to 167). This position, with a 52% consultant expansion, would result in a fall in the total number of staff or, alternatively, an opportunity to offer training to 40 to 60 additional juniors from abroad while still achieving a consultant to junior ratio above 1. The aggregation, however, conceals large differences between surgical specialties in existing consultant to junior ratios.

Discussion

Perhaps the most obvious limitation of this study is that it concerns only one region. The concept of regional self sufficiency is necessarily somewhat artificial, but if other regions were to work out plans on a similar basis it should then be possible to construct a total picture and see to what extent the current distribution of senior registrar posts is out of balance with regional needs for recruitment. It is suggested not that movement between regions should be restricted or inhibited, but that a better balance of posts would be in the interests of all concerned.

Second thoughts, and corrections, will no doubt be applied to the suggestions from districts regarding numbers of consultants desired or needed. These requirements for additional consultants were not coupled with an expressed willingness to give up junior staff, except in one case; but in many specialties the indications are that little or no reduction in juniors would actually be appropriate. Individual subspecialties need further analysis in detail.

The calculations in this paper allow for 10% "wastage" at the senior house officer and registrar levels, and 5% at the senior registrar level. This would take some account of doctors who change from one career choice to another, but more transfers than this would require further estimation of how much the flows in different directions were likely to cancel out. Much would depend on the extent to which a change of career made it necessary for the total duration of postgraduate training to be prolonged, and this emphasises the need for further discussion about "general professional training" as well as tolerance between specialties in the acceptance of extraneous experience.

No detailed consideration has been given to training for overseas doctors, but the differing extent to which they might be accommodated in various specialties can be inferred from the table. In the specialties that have caused the greatest amount of recent discussion about the career structure—medicine, surgery, and obstetrics and gynaecology—the indication from this regional study is that it would be possible to achieve a 50% consultant expansion, with good promotion prospects for trainees and with a consultant to junior ratio greater than 1, while still allowing scope for the acceptance of some trainees from overseas and without increasing the total number of doctors working in the specialty. Further thought would obviously need to be given to more detailed questions, such as how on call rotas might be arranged in these circumstances. In pathology, radiology, paediatrics, and psychiatry there would seem to be no spare capacity to accommodate overseas trainees if a large consultant expansion were to be achieved. This is particularly notable in pathology, where the effect of a low initial ratio of junior staff combines with large consultant demands resulting from increasing separation of the pathology specialties.

The lengths of postgraduate training predicted in these analyses, ranging from eight to nine years in the senior house officer, registrar, and senior registrar grades, do not represent an unreasonable average and might indeed be construed as a slightly pessimistic view of the future.

Recent activities concerned with revenue reductions and manpower targets have temporarily distracted attention, particularly at regional level, from the main theme of service development and its manpower implications. What is now needed is a clear reaffirmation of strategic intentions—particularly in relation to the consultant expansion programme—in order to refocus activity on the adjustment of numbers of training posts, and ratios, and to balance the effects of this against service provision. Ingenuity is also required to unlock some of the available resources from within which the fuel for consultant expansion must be found.

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(*Accepted 15 May 1984*)

Role of health authorities—*continued from page 1772*

Our study of a typical month's activities has shown the complexity of the NHS and the great range of issues facing health authorities. Though each authority behaves differently in detail, all found the pace hectic in 1983. All experienced increased pressure, through the regional reviews, the specific manpower targets of late summer, and the winter instruction to privatise support services. The pace seems unlikely to slacken in 1984—or beyond. Deceptively simple?

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This is the seventh in the series of articles on NHS administration and management, which started on 28 April.