Middle Articles

HOSPITAL TOPICS

Possible Future Trends of Medical Staffing in the Hospitals of England and Wales

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In recent years there has been increasing dissatisfaction in the profession with various aspects of the medical staffing structure in hospitals. Clearly a state of affairs in which a fifth of the country's indigenous doctors emigrate to be replaced by two or three times their number from poorer countries cannot be regarded as satisfactory and demands change. The historically relevant documents are summarized in the report of the Health Minister's working party (Department of Health, 1969) on the responsibilities of the consultant grade and they will not be recapitulated here.

Unfortunately, the proposals of the working party, taken together with the proposed introduction by the royal colleges of stringent requirements to be met before a junior post can be regarded as suitable for training (*Annals of the Royal College of Surgeons of England*, 1969), have created anxieties in the minds of many consultants. It is feared that these proposals will reduce the availability of junior staff and will increase the amount of work which each consultant has to undertake (even though most are now fully committed), while at the same time making their work less professionally interesting. If these fears are valid the proposed changes will have the reverse of their desired effect; junior staff will continue to emigrate if they believe their final professional prospects are unattractive, and to them will be added new emigrants from the ranks of existing consultants. Commenting on the report of the working party, the *British Medical Journal* (1969) in a recent leading article said, "Doubtless . . . as some of the practical results of reforms become clearer they may seem less acceptable. For example, the duties of consultants are bound to be more onerous, and they will have fewer hospital junior staff to support them."

If the size of the consultant grade is to increase, and the rate of increase in the junior grades is to slow down, the question has to be considered: what will be the scale of these changes? To illustrate one way in which the question can be answered, the changes implied by the recommendations of the working party for the staffing of the specialty of orthopaedic and traumatic surgery in England and Wales will be considered.

In this paper an attempt is first made to calculate the number of maximum part-time consultant surgeons who might be needed to perform the work at present carried out in the hospital service in England and Wales if it be assumed that the consultants were not supported by doctors other than preregistration house-officers.

An estimate of the required number of maximum part-time consultants having been obtained, the number of junior staff needed to train and maintain these consultants is calculated. Finally, some implications of the resulting staff structure are considered.

The primary staffing of accident and emergency departments is not considered.

Clinical Work of One Maximum Part-time Consultant

The weekly work-load set out in Table I might be suggested as reasonable for a consultant orthopaedic surgeon working on a 9/11 basis with help from only a house-surgeon. The size of the work-load has been suggested to me from my own experience and from discussion with colleagues; it is presented here simply as a basis for calculation, not in any sense as the "correct" work-load.

TABLE I.—Composition of Nine-session Working Week

4 Outpatient sessions	Orthopaedic and trauma (20 new patients, 60 old patients)
2 Operating sessions	7 Operations (elective and emergency), 20 occupied beds
1 Ward session	2 Ward rounds of 20 occupied beds
2 Sessions	Emergency trauma (on average 2 calls to the accident department each week)
	Administration
	Travelling

If it be assumed that there are 46 working weeks in the year the work done annually per nine consultant sessions a week is approximately:

New out-patients : 1,000 (500 orthopaedic, 500 trauma)
Operations : 320

Numbers and Service Contribution of Junior Staff

In the proposed period of general professional training (Royal Commission on Medical Education, 1968a; *Annals of the Royal College of Surgeons of England*, 1969; Department of Health, 1969) surgeons would undertake a six-month period in an accident and emergency department and might undertake an additional six-month period in an orthopaedic department. The former period would represent a contribution to the "first-on-call" work of an accident and emergency department, and as such is outside the scope of the present calculation. In the latter it might be assumed that approximately one-tenth of all doctors will train for a surgical career and that of these one-third might do six months in an orthopaedic department before the Fellowship. A total of 1/10 by 1/3 by 1/2 by 2,000=33 man-years would then be available at pre-Fellowship level in England and Wales.

In England and Wales 74 senior registrars practising orthopaedic and traumatic surgery (of whom 62 are U.K. nationals) are undergoing further professional training (*Annals of the Royal College of Surgeons of England*, 1969), but only a fraction of the 317 registrars come into this category. If surgeons graduating outside the United Kingdom are excluded, only 106 registrars remain, probably 75% of whom have obtained the F.R.C.S. Thus to the 62 senior registrars 79 (75% of 106) registrars can be added, to make a total of 141 British graduates now undergoing what in future will be regarded as further professional training in England and Wales.

These considerations, coupled with others based on the likely supply of doctors in the future, suggest that the maximum number of surgeons with registrable qualifications obtained in the U.K. who could be trained in England

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and Wales in orthopaedic and traumatic surgery might lie between 120 and 160. This would represent an output of 30 to 40 surgeons per annum on the basis of a four-year training scheme. In this paper the top estimates of 160 and 40 will be used as a basis for calculation. Placed geographically in proportion to the present distribution of consultants, these 160 surgeons would be distributed roughly as in Table II. Distributed, on the other hand, in proportion to the places at present available in undergraduate medical schools 64 (40%) would be in London.

TABLE II

Region	Population in Millions	Number of Consultants in Orthopaedic and Traumatic Surgery (Whole-time Equivalents)	Possible Future Number of U.K. Nationals undergoing Further Professional Training in Orthopaedic and Traumatic Surgery
Newcastle ..	3.09	28.9	12
Leeds ..	3.12	28.2	12
Sheffield ..	4.62	31.0	14
Birmingham ..	5.11	38.6	16
Manchester ..	4.57	38.7	16
Liverpool ..	2.26	18.3	8
Wales ..	2.8	19.3	8
E. Anglia ..	1.7	14.7	6
Wessex ..	1.98	15.5	6
Oxford ..	1.88	18.1	8
S.W. ..	3.08	25.9	10
N.W. Metropolitan	4.5	39.8	16
N.E. Metropolitan	3.2	27.6	11
S.E. Metropolitan	3.2	26.2	11
S.W. Metropolitan	3.5	24.8	10

A surgeon undergoing further professional training will be employed by the National Health Service on an 11/11 basis. Nevertheless, probably one-quarter of his time will be taken up with non-service activities, such as research and postgraduate study, as well as by duplication of the service activities of the consultant to whom he is "apprenticed" and whom he is assisting—for example, in the outpatient clinic or the operating-theatre. Moreover, part of the time of consultants working in training programmes should also be devoted to research and training. For the sake of simplicity, this extra loss of service time might be added to that already discounted on behalf of the junior staff to raise the "non-service" time of the latter from one-quarter to three-eighths. Thus the clinical contribution of 160 11/11 surgeons undergoing further professional training would be equivalent to 100 surgeons working on a whole-time basis. This would represent 1,100 clinical sessions.

Number of Consultants Required

If each consultant were expected to see 1,000 new out-patients per annum in the absence of junior staff, then, since about one million such patients are now seen in England and Wales annually, 1,000 consultants would be needed. The consultant clinical equivalent of the 160 U.K. registered surgeons undergoing further professional training—that is, 100—must be subtracted from this figure to give a total of 900.

The sessional work done in England and Wales in orthopaedic and traumatic surgery at the present time is set out in Table III. If the total work is now done in 9,688 sessions, and if the equivalent of 1,100 sessions might in future be worked by U.K. registered junior staff undergoing further professional training, the sessions left to be worked by consultants on a 9/11 basis would be 8,588. This would be the equivalent of $8,588/9 = 954$ maximum part-time consultants.

TABLE III.—Composition of the Specialty of Orthopaedic and Traumatic Surgery in England and Wales on 30 September

Grade	No. of Whole-time Equivalent Staff	
Consultants ..	393.5	(= 480 surgeons at 9/11)
Senior hospital medical officers ..	2.6	(with allowance)
Medical assistants ..	5.2	(without allowance)
Senior registrars ..	88.8	(without allowance)
Registrars ..	71.5	
	317.1	
	888.7	whole-time equivalent surgeons = 9,687.7 sessions

Thus these two methods of estimating the required number of consultants agree and suggest a figure of a little under 950. From this number may be subtracted 39, being the clinical maximum part-time equivalent of the 33 U.K. registered surgeons who might be undergoing general professional training in orthopaedic and traumatic surgery, and 100, being the clinical maximum part-time equivalent of surgeons from overseas undergoing further professional training. The final figure for the required number of consultants in orthopaedic and traumatic surgery is therefore about 800.

The 98 S.H.M.O.s and medical assistants (Table III) will continue to make a full-time service contribution, either in their existing posts or, where individuals are eligible, after regrading as consultants. Whether or not these surgeons are regraded they will be equivalent to 98 by $11/9 = 120$ maximum part-time consultants. The equivalent of 480 maximum part-time consultants are already in post. Thus there are now the service equivalent of 600 maximum part-time consultants. To reach 800, the consultant grade will therefore have to be expanded by 200. Of the annual proposed output of trained surgeons of 40, about 15 will be required to replace losses from the existing consultant establishment. Thus the consultant establishment could be expanded by about 25 surgeons annually. On this basis the transition from the present structure to the structure now envisaged would take eight years.

Doctors from Overseas

Though on 30 September 1967 there were 213 overseas doctors in registrar and 12 in senior registrar posts in orthopaedic and traumatic surgery, probably no more than 160 are qualified to participate in further professional training programmes. These overseas doctors would make a service contribution similar to that of their U.K. counterparts, and their presence would allow a reduction of 100 in the required number of consultants.

It is very difficult to estimate to what extent general practitioners and married women doctors might contribute to orthopaedic and traumatic work. They may well make a substantial contribution to the work of accident and emergency departments, but this work has been excluded from the present discussion. In the present context such doctors could contribute only to the outpatient component of the consultant's work and such a contribution could make little difference to the number of consultants required.

Some Implications

Size of the Work-load

Since the existing work-load is now being met, a calculated short-fall of some 200 maximum part-time consultant surgeons implies that existing surgeons are individually carrying an unreasonably large service load. This is borne out by the personal experience of most junior doctors at the present time and by many consultants, especially those who do not have access to well-trained junior staff. The existing 388 senior registrars and registrars in orthopaedic and traumatic surgery would be replaced, on the basis of the present proposals, by 320 surgeons (of whom half might be from overseas) undergoing further professional training—an apparent loss of 68 surgeons. This loss is apparent rather than real, since many of the 317 registrars are not at present undergoing the equivalent of further professional training (it has in fact been supposed earlier in this paper that only about 75% of the U.K. nationals are in this category). The remaining registrar posts should perhaps more properly be regarded as posts providing general professional training and it has already been calculated that 33 such posts would be available in orthopaedic and traumatic surgery for U.K. registered surgeons and an additional, unknown number of posts for doctors from overseas. The

final reduction in the numbers of junior staff implied by the new proposals is therefore not more than 30 surgeons. Hence the increases required in the consultant grade are needed to improve the working conditions of both consultant and junior staff alike.

In the eight years that it might take to bring this expansion about, either the orthopaedic and traumatic profession will have to depend to a greater extent than that visualized above on non-British nationals, the clinical work-load will have to be reduced, or junior and senior staff time will have to be spent, as it is now, on discharging the service load rather than on training. Perhaps there should be a larger allocation of doctors to the hospital service generally as against general practice—a change in emphasis which would accord with the aspirations of final year medical students, about 60% of whom wish to enter consultant practice (Royal Commission on Medical Education, 1968b).

Overseas Doctors

Certain problems might arise from the introduction of 160 doctors with registrable qualifications obtained overseas to specialty training programmes. Firstly, it would be neither equitable nor legal if there were to be two kinds of training programme, one for U.K. nationals and another for non-U.K. nationals. Thus the teaching hospitals would have to accept that (using today's equivalents) half their "senior registrars" in orthopaedic and traumatic surgery were not U.K. nationals. This would contrast with the present situation in which most teaching hospital junior staff are U.K. nationals and most non-U.K. nationals work in non-teaching hospitals. Secondly, the introduction of a further 160 surgeons progressing to vocational registration would make it impossible to adjust the number of surgeons in specialty training programmes to the planned expansion of the consultant grade unless it were known which trainees aspired to practice in this country. It would therefore have to be perfectly clear which surgeons in specialty training programmes would have the opportunity of applying for consultant jobs in this country when trained, and which surgeons would be planning to return to their country of origin when they had obtained vocational registration. At the present time there is no way in which this knowledge can be obtained with certainty.

Organization of a Training Programme

Numerous academic and administrative problems arise in this connexion. In orthopaedic and traumatic surgery about two-thirds of the surgeons entering their period of further professional training will have no experience in the specialty of their choice. Thus in experience they will not be the equivalent of the contemporary senior registrar. Since they will start with no experience whatsoever, and four years later will be expected to leave a training programme to undertake independent consultant practice, it will be necessary to provide them with graduated work during this period. Thus programmes providing further professional training will be difficult to organize in blocks of fewer than four junior staff (so that each surgeon in training can undertake progressively more responsible work during his four years in a particular programme), while junior staff in such training schemes will not make as great a contribution to the service work of the department as would a comparable number of contemporary senior registrars.

Objections to Proposed Expansion of Consultant Grade

If there is to be an expansion in the consultant grade of the kind outlined, the Department of Health and Social Security must be prepared to see these changes and the Treasury to pay for them. The profession must be willing to accept the implied

alteration in its way of life. I believe that many consultants would object to the changes implied. Perhaps the best illustration of the effect of these objections is given by the Department's experience in 1968. During that year it would have liked to see the consultant grade (as a whole) expand by 250 new consultant posts, had existing consultants sought them. Numerous applications were made by the profession during this period for new registrar and senior house-officer posts, but it was the Department's experience that when these requests were turned down and the suggestion was made that, instead of a registrar, a consultant should be appointed the consultants who had originally applied for a registrar made no further application. It would thus seem fair to infer that, though many consultants see themselves as being overworked, they are reluctant to solve this problem by seeing additional consultants appointed. Why is this so? There seem to be at least three factors at work.

Firstly, some of a surgeon's clinical work is interesting, but much of it is routine and eventually becomes dull. What most consultants seek is the appointment of a surgeon to whom this routine work can be delegated. If this surgeon is a registrar the delegated work, though routine and dull for a consultant, might be interesting to the registrar and profitable to him in a training sense. Thus there is an attraction in the appointment of a registrar. On the other hand, if a consultant is appointed, though he will undertake a certain share of the routine work, he will also wish to do his share of the interesting work, and therefore existing consultants will see fewer cases of interest than they would do if a registrar were to be appointed.

Secondly, there are physical difficulties in appointing a consultant, assuming that consultant practice remains organized as it is now. Any consultant will require his own outpatient session, his own beds, and his own operating-lists. Additional outpatient sessions, beds, and operating-lists may not be available, so that existing consultants may have to give up some facilities. On the other hand, a registrar uses existing consultant time in the outpatient clinic and the operating-theatre and does not require his own beds. His presence does not therefore reduce the facilities available to existing consultants.

Thirdly, the question of income arises. Many consultants depend on their private earnings (as well as on the income derived from their National Health Service sessions). The appointment of a new registrar does not prejudice a consultant surgeon's private earnings, whereas an additional part-time consultant expects that the existing local private practice will be shared with him. Naturally enough, most consultant surgeons are reluctant to see their earnings fall.

TABLE IV

	Composition of the Profession as at 30 September, 1968	Possible Future Composition
Staff in permanent posts, calculated as maximum part-time equivalents:		
Consultants	480	680
S.H.M.O.'s (10 whole-time)	12	12
Medical assistants (89 whole-time)	109	109
		800
Staff undergoing further professional training or its present equivalent:		
Senior Registrars		
U.K. nationals 62	74	160 U.K. nationals
Non-U.K. nationals 12		
Registrars with F.R.C.S.*	303	320
U.K. nationals 79		
Non-U.K. nationals 150	229	160 non-U.K. nationals
Staff undergoing general professional training or its present equivalent:		
Registrars without F.R.C.S.	97	33 U.K. nationals
U.K. nationals 34		
Non-U.K. nationals 63		63 non-U.K. nationals
		96

* Estimated on the assumption that 75% of registrars have the F.R.C.S.

Little can be done to meet the first objection; the number of new patients which any consultant surgeon on the new basis will see will be smaller than that seen by contemporary surgeons; and he will have to undertake more of the less interesting minor items of medical care as well as the more interesting major procedures. Though changes of this kind will occur, they are unlikely to be gross (Table IV). To some extent this disadvantage could be offset by the introduction of a divisional system, within which an individual surgeon could develop a specialized interest, so that cross-referral from one orthopaedic surgeon to another would take place as a routine. The type of National Health Service practice visualized in the future would be more like contemporary private practice, in which a consultant surgeon undertakes all items of patient care, not just the major items. Future consultant surgeons would undertake as many items of patient care as do contemporary surgeons. Their work would be altered in that they would undertake more items of care for each of a smaller number of patients.

The physical difficulties would be met by a readjustment in contemporary working practices and by new building. Instead, for example, of a consultant doing an outpatient session with a registrar, two consultants might work together. Similarly a half-day's operating might be undertaken by two consultants working consecutively, rather than by a consultant doing the major half of the list and the registrar doing the minor half. It is again worth noting that this change would make National Health Service practice more like private practice. Many hospitals in the United Kingdom would have to be rebuilt in order to accommodate and attract a larger number of doctors. Indeed, an adequate hospital rebuilding programme is a prerequisite of the provision of satisfactory medical care and of an acceptable hospital medical staff structure in this country.

The problem of a fall in a surgeon's income from private practice seems to be a major objection to any expansion in the consultant grade. The Treasury is unlikely to increase the National Health Service income of consultants to offset this fall, but what are the implications of changing the method of calculating a consultant's salary to one based on a fee for an item of service? At a salary of £300 per annum per session the work-load described in the earlier part of this paper would be paid at about the following rates: first consultation 7s. 6d.; second consultation 6s. 6d.; an operation £2; night call to a hospital £6. Based on the fees at present charged in private practice in this country and on the fees charged in other countries with developed economies, the following scale of charges would not seem unreasonable: a first consultation £5, a second consultation £3, an operation (including the

inpatient care involved) on average £75, a night call to a hospital including the work (often an operation) required, £75. If this basis is used, the gross income for a consultant surgeon working as proposed earlier in this paper would be about £40,000 per annum, an income similar to that earned by orthopaedic surgeons in North America. If the country were to pay salaries of this order to consultant surgeons possibly the Department of Health and Social Security would find that not only was the work done but that it was done cheerfully. Furthermore, if consultants were paid on an item-of-service basis the market mechanism would be brought to bear on the distribution of doctors between specialties. This might be desirable, since if specialties such as orthopaedic and traumatic surgery (which are understaffed and hence overworked) were therefore highly paid they would be more attractive and hence would recruit additional doctors more easily than at present—when the more overworked and understaffed a specialty becomes the greater the difficulty it encounters recruiting doctors to its ranks.

It is unrealistic to suppose that salaries of this size would, or should, ever be paid in a Government service. On the other hand, were changes to be implemented which would result in a significant fall in average consultant income, the only consequence would be a higher emigration rate. Only one course remains: an increase in the amount of private practice commensurate with the increase in the number of consultant surgeons seeking that practice. Such an increase in the volume of private practice would have the further advantage of marginally reducing the number of patients presenting to the National Health Service for care. If private practice is to expand the present political and administrative attitude to private practice must change: private practice must not be attacked, it must be fostered.

Thus it would seem that if the consultant establishment is to be expanded as proposed there must be significant changes in the attitudes of existing consultants, in the political and administrative philosophy of those responsible for the provision of medical care in Britain, and in the funds allocated to medical care.

REFERENCES

- Annals of the Royal College of Surgeons of England*, 1969, **44**, 153.
British Medical Journal, 1969, **2**, 588.
 Department of Health and Social Security and the Department of Health for Scotland (1969). *The Responsibilities of the Consultant Grade*. London, H.M.S.O.
 Royal Commission on Medical Education (1968a). *Report 1965-1968*, Cmnd. 3569. London, H.M.S.O.
 Royal Commission on Medical Education (1968b). *Report 1965-1968*, Cmnd. 3569, p. 359. London, H.M.S.O.

NEW APPLIANCES

Aids to Surgery of Common Duct

Mr. C. PATRICK SAMES, Royal United Hospitals, Bath, writes: The common duct irrigator and suction spoon illustrated here

are complementary appliances. The irrigator is an adaptation of an ordinary Higginson syringe, one end of which is lengthened by

metal adapters and attached to a Eustachian catheter. It is essential that the catheter be of silver and therefore easily malleable, with a nicely rounded tip to prevent undue damage. The sucking-spoon rests naturally in Morison's pouch and its tip fits easily into the foramen of Winslow. It will usually stay in place without needing to be held by an assistant, irrespective of whether the incision is paramedian or Kocher. Stones and biliary sludge fall naturally into the spoon, and the protective cage filters them off, preventing blockage of the sucker.

These two pieces of apparatus have been in constant use by me for the last 15 years. The spoon is procurable through Down Bros. and Mayer & Phelps Ltd.