A census of medical registrars in England and Wales, 1990

In the document *Hospital medical staffing—Achieving a balance—Plan for action* (1987) [1] paragraphs 11 to 28 describe how the Joint Planning Advisory Committee (JPAC) would extend their work to plan quotas for the numbers of registrars in the United Kingdom. Paragraph 12 states that:

‘in most specialties, these quotas will represent substantial reductions compared with the number of UK graduates now in the grade. It is envisaged that an interim quota will be set for achievement within five years, and a final quota for ten years, although the timescale may differ between specialties.’

Following a scrutiny in June 1989, the Department of Health informed the Royal College of Physicians (the College) of a national target of 681 medical registrars, based upon a consultant growth of 73 per annum, consultant retirements of 75 per annum, a length of time in grade of four years, and ‘wastage’ of 15%. Thirty-four whole-time equivalent posts were allocated for part-time training, and a ‘top slice’ for research of 25% was suggested. Figures from the Department suggested that there were 1,222 medical registrar posts in the specialties considered to be in the general medical registrar pool. This excluded clinical genetics, dermatology, genito-urinary medicine and neurology, as quotas for these sub-specialties of medicine were being fixed separately. Information from Fellows and Members of the College in specialties with accurate information about manpower in their own specialty indicated that there were far more registrars currently in post than were known to the Department of Health. Following discussion at the Academic and Research Sub-committee of JPAC on 9 November 1989, it was agreed that the College would be given further time to collect data about manpower in the medical registrar grade before JPAC fixed its quota. The College was concerned that the proposed cut of 44% (from 1,222 to 681), in itself very significant, would have even more substantial effects upon opportunities for training in clinical medicine and in research if the existing number of registrars were much greater than that known to the Department of Health. The President therefore asked the Research Unit to establish a register of all medical registrars.

**Method**

Although the Training Office of the College has a list of registrar posts approved for training purposes, there has until now been no mechanism for keeping this list reliably up-to-date. For example, a registrar post might be converted to a senior house officer post, and it might be some months before the Training Office is informed of this. On other occasions, hospitals would close or merge and posts be lost; again, although the original post remained nominally approved, no one would be appointed to it. Finally, although those who supervise research registrars are encouraged to seek approval from the Training Office for their research post if it is associated with some clinical work, many do not do so.

The Research Unit therefore undertook a census of all medical registrars in post on 14 February 1990. Each health district has a Tutor appointed by the Royal College of Physicians to help those in medical training in the district, and it was decided to use these Tutors to collect basic information about all medical registrars with the help of their Medical Staff Office and District Postgraduate Tutor.

This information was collected on forms of three colours:

- **blue** for registrars holding straightforward established National Health Service clinical medical registrar posts;
- **yellow** for registrars engaged in research and holding an honorary medical registrar contract, usually because they undertook some clinical duties during the week;
- **green** for research fellows paid at medical registrar level but without an honorary contract with a health authority because they undertook no clinical work. However, such research fellows must be considered as part of the pool of doctors in training for future consultant posts in different specialties. For ease of discussion, the different types of registrars are referred to by these colours in the remainder of this paper.

As College Tutors might not always be aware of all those undertaking research in the different sub-specialties of medicine in their health districts, forms were also sent to certain members of various specialist societies. In some cases, the secretaries of the societies were able to provide lists of members who were particularly likely to be employing research fellows or research registrars. In addition to Tutors in all health districts in England and Wales and in all Special

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Health Authorities, approximately 3,000 letters were sent out to members of specialist societies.

A final batch of forms was circulated to all members of the Association of Clinical Professors of Medicine, seeking information about university lecturer posts. Those holding honorary registrar contracts were asked to complete a pink form. If they had already completed a yellow form, then that form was transferred to the pink file.

The British Paediatric Association (BPA) thought it would be more efficient to undertake their own similar survey of paediatric registrars. Therefore, the results here presented exclude all paediatric registrars with these exceptions: following advice from the Department of Health, information about registrars in paediatric cardiology figure in the Royal College of Physicians census, as the Department considers that specialty to be a sub-specialty of cardiology. For paediatric neurology, however, the reverse is true—the data figure in the BPA census. Medical registrars in public health medicine, occupational medicine and radiotherapy were not included. Similarly, cross-College specialties such as haematology and immunology (Royal College of Pathologists) are excluded from the results of the survey, even though some registrars in these specialties understandably completed forms.

Forms received were compared as far as possible against the register held by the Training Office of the College, and also, for research registrars, against lists kindly provided by the Medical Research Council, the Wellcome Foundation and the Association of Medical Research Charities.

Only registrars who were actually in post on 14 February 1990 were eligible for the census. Several duplicate entries were received but were rigorously excluded from the final analysis. For the established NHS (blue) registrars, posts were included in the analysis shown in Table 1 if vacant or filled by a locum.

**Results**

Table 1 summarises the results. These figures are, if anything, an underestimate of registrars in post on census day. There are a further 18 posts on the list held by the Training Office of the Royal College of Physicians for which no information could be obtained, despite repeated letters and telephone calls to the College Tutors in the relevant districts. Similarly, the list provided by the Medical Research Council, Wellcome Trust and Association of Medical Research Charities

| Table 1 | Medical registrars in posts, and posts vacant or filled by a locum on 14 February 1990. | Established NHS | Research registrars | TOTAL |
|---------|---------------------------------------------------------------------------------|-----------------|-------------------|-------|
|         | 'Blue' | 'Yellow' | 'Green' | 'Pink' | Y+G+P | B+Y+G+P |
| No. of posts | 1,038 | 566 | 76 | 28 | 670 | 1,708 |
| No. of posts vacant or filled by locum | 91 |  |  |  |  | 91 |
| No. of registrars in post | 947 | 566 | 76 | 28 | 670 | 1,617 |
| Percentage of posts filled on census day | 91.2 |  |  |  |  | 91.2 |
| No. of men | 778 | 467 | 58 | 20 | 545 | 1,323 |
| No. of women | 169 | 99 | 18 | 8 | 125 | 294 |
| Women as percentage of registrars in posts | 17.8 | 21.2 | 31.0 | 40.0 | 22.9 | 18.2 |
| No. of part-time posts | 6 |  |  |  |  |  |
| Percentage of all registrars that are part-time | 0.6 |  |  |  |  |  |
| No. of part-time men | 0 |  |  |  |  |  |
| No. of part-time women | 6 |  |  |  |  |  |
| Percentage of all part-time who are women | 100 |  |  |  |  |  |
| No. of registrars born in UK | 492 | 298 | 46 | 26 | 370 | 862 |
| No. of registrars born abroad and of UK settled status | 313 | 186 | 18 | 2 | 206 | 519 |
| No. of career registrars | 805 | 484 | 64 | 28 | 576 | 1,381 |
| No. of registrars born abroad and not of UK settled status | 142 | 82 | 12 | 0 | 94 | 236 |
| Visiting registrars as a percentage of all registrars | 15.0 | 14.5 | 15.8 | 0.0 | 14.0 | 14.6 |
Charities contained approximately a further 70 names about whom no confirmatory information could be obtained. However, the contents of letters received from many of the doctors on these lists indicated that these lists were out of date, and the number of non-responding registrars on these lists is probably substantially smaller.

The modal age of registrars currently in post was 27–28 years for both men and women; 16.3 per cent were aged over 35. Figure 1 shows the age at first appointment to the registrar grade. Figure 2 shows the months since first appointment to the registrar grade. Table 2 shows the mean, mode and median for the months since first appointment to the registrar grade for registrars of each colour code.

Figure 3 shows the distribution of months since first appointment to the registrar grade for registrars of all colour codes combined.

It must be remembered that the mean or modal months in grade gives no information about the duration of time spent in the grade, any more than the mean or modal age in the UK population in itself is a measure of the expectancy of life without further analysis of the data. If one assumes that the (cross-sectional) distribution of months spent by registrars in the grade is constant, that is to say the frequency distribution would have been the same in February 1989 had a census been conducted then, and was the same in February 1991 (this will only be true if major changes are not currently being made to the grade), then the 225 registrars at the end of the first half of year 1 become 169 at the end of the first half of year 2 (Table 3). That is to say, leavers from the grade for all causes (promotion and transfer to other types of medical work) are 225 – 169 = 56. Inspection of the data suggests that virtually no one leaves before the end of the first year. The mean departure is therefore assumed to be half-way through the next interval (15 months) and half-way through subsequent intervals. Similarly the number of registrars leaving between the end of the

![Fig. 1. Age at first appointment to the registrar grade of medical registrars in post on 14 February 1990.](image)

![Fig. 2. Months since first appointment to the registrar grade for medical registrars in post on 14 February 1990. For explanation of different 'colours' see text.](image)
Table 2. Months since first appointment to the registrar grade for medical registrars in post for whom the information was available on 14 February 1990.

| Registrar category | All categories |
|--------------------|---------------|
| ‘Blue’             | ‘Yellow’      | ‘Green’ | ‘Pink’ |
| Number             | 929           | 587     | 71     | 26   | 1,563 |
| Arithmetical mean (months) | 21.7          | 42.9    | 35.2   | 50.6  | 30.1  |
| Mode               | 6.5           | 30.5    | (insufficient) | 6.5  |
| Median             | 15.4          | 39.5    | 33.5   | 52.4  | 23.3  |

*For explanation of colour code see text*

Fig. 3. Months since first appointment to the registrar grade for all medical registrars in post on 14 February 1990.

second half of year 1 and the second half of year 2 is 233 – 175 = 58. Table 3 is based upon these progressive calculations. The calculations are continued to 90 months only (7½ years), excluding the very long ‘tail’ of registrars, illustrated in Fig. 3, who were first appointed to the grade earlier than that. This long ‘tail’ accounts for only 2.8% of all registrars, and including these in the calculations would have only a marginal effect upon the mean duration in grade which, as shown in Table 3, is 44 months.

Amongst the information sought on the census forms was whether the registrar had been born abroad and, if so, whether he or she was entitled to settled status in the United Kingdom. Such registrars in future will be termed ‘visiting registrars’. Those born abroad were substantially older than registrars born in the United Kingdom: of 95 registrars aged 37 years or over, only nine were born in the United Kingdom. There were 57 registrars aged 38 years or over and only one was born in the United Kingdom; however, all but nine of them have the right to settled status in the United Kingdom (‘career registrars’).

Registrars who do not have the right to settled status in the United Kingdom were not evenly distributed around the country, being over-represented particularly in the Northern, West Midlands and North Western Regions (Table 4).

Information was not sought about whether or not the registrar had Part 1 or both parts of the Membership of the Royal College of Physicians (UK), but a check of the data returned against the information held at the College showed older registrars were less likely to hold the Membership (Fig. 4).

Information was sought on the census forms about the consultants for whom the registrar was working and the specialties of the consultants. This information is now available on the College database. Whereas a registrar working for three cardiologists can reasonably be assumed to be a registrar training for a career in cardiology, no clear assignment to a specialty can be made for many of the registrars. For example, a registrar working for a thoracic physician, a gastroenterolo-
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Table 4. Regions ranked by proportion of their medical registrars who are 'visiting registrars', ie those born abroad and not entitled to UK settled status.

| Region                      | Visiting registrars (per cent) |
|-----------------------------|--------------------------------|
| Northern                    | 29                             |
| West Midlands               | 23                             |
| North Western               | 23                             |
| South Western               | 20                             |
| Wales                       | 19                             |
| Yorkshire                   | 18                             |
| South West Thames           | 17                             |
| Oxford                      | 17                             |
| Trent                       | 14                             |
| East Anglia                 | 14                             |
| Mersey                      | 12                             |
| North West Thames           | 10                             |
| Wessex                      | 8                              |
| South East Thames           | 7                              |
| Special Health Authorities  | 5                              |
| North East Thames           | 4                              |

gist and a geriatrician might be said to be receiving a general training in internal medicine, but he or she might continue to train further in any one of these specialties. As a first approximation, a registrar post was allocated to a single specialty if most of the supervising consultants were listed as being in that particular specialty. Where the split was 50:50, the registrar post was noted as general medicine/specialty, excluded from the general medicine figures and only counted in the specialty figures. Where a number of specialties were covered the registrar post was allocated to general medicine alone. This admittedly somewhat artificial allocation determined that 334 of the 'blue' posts were in general (internal) medicine.

Discussion

The total number of posts of at least 1,708 exceeds the number of posts previously known to the Department of Health by 40%. This clearly indicates the need for the Department of Health to revise its method of collecting data from the health regions. A number of the College specialist committees have indicated that the information held by the Department of Health about the number of senior registrars and consultants in their specialties is also deficient.

Women are substantially under-represented in medical registrar posts. Rhodes [2] showed that the number of women who stopped working for 3 months or more, many presumably on account of family responsibilities, reached its peak about 4 years after qualification, concordant with the present data. Table 1 shows that only 0.6% of all registrars are in part-time posts, so it does not appear that women registrars are at present combining, to any great extent, family responsibilities and training for a career in hospital medicine by using the facility of part-time appointment in the registrar grade. Similar under-representation of women in academic training posts has recently been reported from the United States by McKenna and colleagues [3].

Figures 3 and 4 together indicate that there is a small but significant number of registrars who have not been served well by the present system, in so far as there are registrars who have spent substantially more than four years in the grade and failed to achieve the

Fig. 4. Ages of all medical registrars in post on 14 February 1990 in relation to whether or not they were Members of the Royal College of Physicians (UK).
Membership. Virtually all the older registrars have been born abroad, although most of them have the right to settled status in the United Kingdom. There is an urgent need for counselling and advising these older registrars.

The document already cited [1] states:

‘On implementation of Achieving a balance, all newly appointed registrars will be designated either as ‘career’ or ‘visiting’ registrars. Career registrars are those who are eligible to pursue a career in the United Kingdom. Regions will be given ‘quotas’ for career registrars in each specialty and will be expected to make appointments to registrar posts in such a way that the number of career registrars in post in each specialty does not exceed the quota. For the time being, there will be no national restrictions on the number of visiting registrars, but the position will be kept under review. Quotas will be determined (by the Secretary of State) on advice from JPAC . . .’

The right to settled status is carefully defined in the document. What are the implications for the findings of the present census in relation to the number of posts planned when Achieving a balance is fully implemented? The JPAC national target is calculated from the basic formula:

\[
(\text{consultant growth per annum} + \text{consultant retirements per annum}) \times \text{length of time in grade} \times \text{an allowance for ‘wastage’} = \text{national target.}
\]

Table 5 shows the figures for these variables submitted by the College to JPAC. The number of consultant retirements at 95 per annum is taken from Table 65 of the Statistics for England and Wales from the Department of Health (1988). The figure for consultant growth relies on the actual growth observed during the immediate past 2 to 4 years for each specialty. The figure also provides for future expansion on the basis of information provided by specialties. The figure of four years proposed for time in grade is such that adequate time is allowed for research, and reflects the overall time for general medicine. Time in grade in individual specialties may vary. The College prefers the word ‘transfer’ to ‘wastage’, as medicine is different from many other specialties in so far as many individuals wish to obtain a substantial background in medicine before transferring to a wide variety of specialties other than mainstream medicine. Parkhouse and Ellin [4] showed that, of 226 responders of a cohort of doctors who had qualified in 1974 and who had at one time been a medical registrar, nearly 40% had taken up a post either in general practice or in hospital specialties outside medicine; 6.2% had gone abroad, and 8% were in posts for dermatology, genito-urinary medicine or neurology and therefore outside the purposes of the present discussion. On the basis of this information the College proposed a wastage/transfer factor of 50%. Inserted into the formula shown above, the national target of registrars recommended by the College was 1,513.5 career registrars. The College also suggested that 35% of these registrars should be assigned to academic and research posts, and that a figure of 5% for part-time registrars was appropriate until further information about the demography of registrars became available.

At its meeting on 19 December 1990, JPAC did not accept the College’s submission, and assigned a national target of 1,072 to be reached in 10 years time. The academic and research ‘top-slice’ is 356, and the part-time ‘top-slice’ is 54, leaving 662 posts for distribution as NHS career posts between regions and Special Health Authorities. This is a reduction of 36% from the present number (1,038) of established NHS blue posts, and a reduction of 26% from the present number of NHS blue posts presently occupied in February 1990 by registrars with the right to settled status in the UK (‘career registrars’). Further details, and the interim national target to be reached in five years, are shown in Table 6.

What are the implications of these lower figures? The lower figure may be welcomed by doctors in train-

| Table 5. Values for variables in the JPAC formula as submitted by the College, and values as given by JPAC on 19 December 1990. |
|----------------------------------|-----------------|-----------------|
| Proposed by College             | Given by JPAC   |
| Consultant growth per annum     | 94.2            | 84.0            |
| Consultant retirements per annum| 95.0            | 95.0            |
| Consultant opportunities per annum| 189.2           | 179.0           |
| Length of time in grade         | 4               | 3.5             |
| Allowance for ‘wastage’ (transfer) | 50%             | 20%             |
| National target                 | 1,513.5         | 1,072.0         |

| Table 6. Present numbers and national targets for medical registrars, as given by JPAC on 19 December 1990. |
|-------------------------------------------------|-----------------|-----------------|
| Year | Total number of medical registrar posts | 1,708 | +5 years | 1,240 | +10 years | 1,072 | |
| Number of ‘visiting registrars’ | 236 | | | | |
| Number of ‘career registrars’ | 1,472 | 1,240 | 1,072 | |
| Total number of academic and research registrars | 670 | | | | |
| Number of academic and research ‘career registrars’ | 576 | 422 | 356 | |
| Number of NHS (blue) ‘career registrars’ + vacant posts | 896 | 764 | 662 | |
| Part-time registrars | 6 | 54 | 54 | |
ing, as with lower numbers of registrars each has a greater chance of reaching a consultant post. This is one of the main themes of the document *Achieving a balance*. Against that must be set the far fewer opportunities for training young physicians in research, and for providing clinical training with a greater degree of responsibility, and a more focused responsibility, than is available in the senior house officer grade. Furthermore, when registrars of the future do attain their consultant post, they will find themselves substantially less supported by doctors in training than are the consultants of today. There are also concerns that, with a smaller number of registrars spread across all specialties, registrars will feel dedicated to their specialty immediately on appointment and become less well trained in general internal medicine.

Regions and Special Health Authorities will now have to set about reducing the number of career registrars towards the 10-year National Target of 662 NHS (blue) career registrars. These are amongst the difficulties they will face: first of all the document *Achieving a balance—Plan for action* [1] states: ‘staff in support of consultants in the acute specialties should not be reduced below an acceptable number at an intermediate level of experience.’ (para A.8) This is the so-called safety net. Second, regions will have to provide throughout their area a suitable spread of registrars to satisfy the training requirements of each specialty, and, with the help of the College, devise training programmes that continue to offer exposure to unselected acute general admissions, the hallmark of training in general (internal) medicine. Third, some regions are likely to face claims from Special Health Authorities that their training programmes should in some way be protected, because of the special quality of postgraduate training they can provide.

Academic physicians leading research programmes will also face difficulties. It will not be easy to attract young doctors into training for a career in research when, in many cases, no honorary registrar contract can be offered, the holding of which is likely to continue to be an important career marker for young doctors. Furthermore the clinical services of academic units are often substantially supported by the part-time clinical activities of registrars primarily engaged in research.

This census proved extremely expensive in terms of staff time and printing and mailing costs. Partly as a result of this, the College decided to set up a Manpower Unit, the task of which is to maintain an up-to-date list of doctors in training in the registrar and senior registrar grades. The Manpower Unit, under the direction of Dr Christopher Davidson, is now conducting a census of all those who hold consultant posts in the National Health Service in England and Wales. The great majority are of course Fellows or Members of this College, but some are Fellows or Members of Scottish Colleges, or have other qualifications, and as such are not on the College Roll. The College and its Manpower Unit will do their best to ensure that the registrar database is now kept up-to-date. One way forward might be for the College in future to require that a registrar must notify the Training Office of his or her appointment for the training to be recognised. Alternatively, the College representative on the appointment committee could inform the Training Office of details of the new incumbent to the registrar post.

The current database contains the dates of birth and General Medical Council registration numbers as data items that identify medical registrars. A follow-up census of these registrars will be undertaken in approximately five years time in order to obtain a clearer picture of transfers between specialties, and from hospital practice to other types of medical practice, and of losses to the profession as a whole. It is hoped that colleagues will collaborate in this subsequent census.

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