

The Second Specialty of General Physicians

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Each year the DHSS collects and analyses various data concerning medical manpower from Health Authorities. The data relate to the staffing position at 30th September (updated quarterly for consultants and senior registrars). All consultants are shown under the specialty to which they devote most of their time. In recent years many general physicians have developed a special interest, or expertise, in another specialty of medicine and many consultant posts in general medicine are now advertised as general physicians with a special interest. In view of this it has become necessary to determine the nature and extent of special interests within general medicine in order to be able to plan appropriate training for doctors taking these posts in the future.

Method

A survey of all consultants shown as general physicians in England and Wales in the DHSS statistics was carried out in the spring of 1980. A short questionnaire was sent together with a letter from the Chairman of the Joint Consultants Committee to each consultant who at 31st December 1979 was recorded under the heading of general medicine. The consultants were asked (a) to confirm that they were appointed as general physicians, or, if not, to state their major specialty; and (b) to list up to three specialties in which they had a special interest or expertise (in order of importance). A list of specialties taken mainly from the one used in the Department's annual returns was supplied as an *aide-mémoire* but doctors were not confined to this list. The consultants were asked to complete the questionnaires and return them direct to the Department by 20th May 1980. The questionnaire results were then linked to the DHSS statistical data base for analysis.

Response

The response to the survey was very high (Table 1): of the 1,018 questionnaires issued, 904 usable questionnaires were returned in time for analysis. In addition, 17 questionnaires were returned because the doctor concerned was no longer in post, 2 were sent to the wrong doctor and 1 was returned incomplete. This gave a gross response rate of 91 per cent (924 questionnaires) with a usable response rate of 89 per cent (904). (Since the survey closed down a further 13 questionnaires have been

Table 1. Survey Response.

	Number	%
Confirmed as general physicians	863	84.8
Not confirmed as general physicians ¹	41	4.0
Questionnaires returned which could not be used	20	2.0
Non-response (by close of survey)	94	9.2
Total	1,018	100

¹ Included in the figure are 11 doctors who gave as their major specialty specialties which are grouped under the heading of general medicine in the Department's annual hospital medical manpower statistics. For the purposes of this survey they have been excluded from the main analysis because their major contribution to the NHS is not in general medicine. The specialty breakdown of the consultants is: 5 in tropical medicine (3 of whom held honorary contracts); 4 in community medicine (all honorary); 1 in intensive care; 1 in forensic medicine.

received, bringing the overall response rate up to 92 per cent (937), although these are not included in the analysis).

In any survey there are two main sources of error in the results. These are random sampling error caused by incomplete response and bias caused by differential non-response, i.e. one group of people having a higher rate of response than another group with totally different characteristics, leading to distortion in the results. The high response rate means that any random sampling error is minimal. Bias is always difficult to detect because usually one does not know what factors will cause it. However, detailed checks of the response have not detected any evidence of serious bias: whatever bias there may be is unlikely to materially affect the results. As a corollary to this, the weighting up factor used to scale up the response to that of the total population under consideration (i.e. general physicians) was the inverse of the response rate, i.e. $1,018 + 904 = 1.1261$.

Results

Major Special Interests

Table 2 shows the number of doctors who responded to the survey analysed by major special interest. The most frequently chosen specialties were: endocrinology (321 respondents); gastroenterology (175); cardiology (126) and diseases of the chest (114). The table also shows the number of times a specialty was mentioned as any of the

Table 2. Analysis by specialty.

Specialty	No. of respondents by primary second interest ¹	Resp. by primary int. as % of all gen. physicians	Respondents rated up to total population	95% confidence interval for rated up figure (lower limit - upper limit)	No. of respondents with any interest in specialty ¹
Doctors who were gen. physicians					
Accident and Emergency	—	—	—	—	1
Cardiology	126	14.6	141.9	135—149	198
Clinical genetics	1	0.1	1.1	1—3	4
Clin. neurophys.	1	0.1	1.1	1—3	4
Clin. pharm. and therap.	13	1.5	14.6	13—18	25
Clin. phys.	2	0.2	2.3	2—4	7
Dermatology	—	—	—	—	1
Diseases of the chest	114	13.2	128.4	122—135	133
Endocrinology	231	26.8	260.1	252—269	285
Gastroenterology	175	20.3	197.1	189—205	202
Geriatric med.	10	1.2	11.3	9—14	26
Haematology	19	2.2	21.4	19—25	28
Homeopathy	3	0.3	3.4	3—5	4
Immunopathology	6	0.7	6.8	5—9	9
Infectious diseases	10	1.2	11.3	9—14	22
Intensive care	6	0.7	6.8	5—9	15
Medical oncology	14	1.6	15.8	14—19	28
Mental illness	3	0.3	3.4	3—5	6
Nephrology	49	5.7	55.2	51—61	64
Neurology	13	1.5	14.6	13—18	21
Nuclear med.	2	0.2	2.3	2—4	4
Occupational health	1	0.1	1.1	1—3	3
Ophthalmology	1	0.1	1.1	1—3	2
Paediatrics	1	0.1	1.1	1—3	1
Rheum. and rehab.	20	2.3	22.5	20—26	34
Tropical Med.	5	0.6	5.6	5—8	17
Other ²	7	0.8	7.9	7—10	17
None	30	3.5	33.8	31—38	30
Sub-total	863	100.0	971.8		1191
Doctors who said they were not general physicians	41	—	46.2	43—51	—
Total	904	—	1018		—

¹ Doctors were asked to list their special interests in order of priority. Primary second interest is the first given. Respondents with any interest are the total number of doctors who mentioned the specialty as their first, second or third special interest.

² Includes doctors with interest in: medical computing (2); obstetrical medicine (2); clinical epidemiology (1); medical aspects of life insurance (1); anti-microbial therapy (1).

three special interests of a doctor. While the phrasing of the questionnaire implies that the same level of involvement by the consultant will not usually be given to the second or third special interest as to the first, it is interesting to note that in some specialties the number of doctors with any interest is high when compared to those with a main interest alone. The specialties most affected in this way are: tropical medicine; geriatric medicine; intensive care and infectious diseases. All subsequent discussion will relate only to major special interests.

Table 2 also gives weighted figures which indicate the number by specialty that could have been expected if there had been 100 per cent response to the survey: these are our best estimate of the total distribution of expertise among general physicians. The weighting factor used was 1.1261, as given above. The estimates have been produced on the reasonable assumption of no bias. However, there will be a degree of uncertainty about the figures

because of random sampling error. This imprecision is quantified by the ranges given in column 5 of Table 2, which are the 95 per cent confidence intervals (using the binomial approximation to the hypergeometric distribution) of the estimates. The range can be interpreted as the range in which one would expect to find the true number of doctors with that particular special interest, as opposed to the estimated number, 95 times out of a hundred. The error implied by these confidence intervals is less than 5 per cent for the larger specialties.

Age Distribution

The age distribution of consultants has important implications for the national training programme to provide replacements for doctors currently in post, although factors such as historic reasons for change in the specialty may have to be taken into account when decisions are

Table 3. Percentage of respondents by age group within major special interest.

Major Special Interest	All staff		Percentage by age group within speciality ¹				
	Respondents	Rated up figure	All ages	30-39	40-49	50-59	60 and over
Cardiology	126	141.9	100	21	37	30	12
Clinical pharmacology and therapeutics	13	14.6	100	23	54	23	—
Diseases of the Chest	114	128.4	100	36	37	20	7
Endocrinology/Diabetes	231	260.1	100	22	37	29	13
Gastroenterology/Liver Disease	175	197.1	100	31	41	21	7
Geriatric medicine	10	11.3	100	20	30	40	10
Haematology	19	21.4	100	5	42	32	21
Immunopathology	6	6.8	100	50	50	—	—
Infectious diseases	10	11.3	100	20	60	10	10
Intensive care	6	6.8	100	33	33	17	17
Medical oncology	14	15.8	100	21	57	14	7
Nephrology	49	55.2	100	27	49	16	8
Neurology	13	14.6	100	8	23	38	31
Rheumatology and Rehabilitation	20	22.5	100	10	35	40	15
Tropical medicine	5	5.6	100	—	20	40	40
Other ²	22	24.8	100	14	23	32	32
None	30	33.8	100	10	10	43	37
Total	863	971.8	100	24	38	26	12

¹the percentage analysis by age may not always total 100 per cent because of rounding errors.

²includes clinical genetics, clinical neurological physiology, clinical physiology, homeopathy, mental illness, nuclear medicine, occupational health, ophthalmology, paediatrics.

made. Table 3 shows for those specialties with more than five respondents (small specialties are suppressed for reasons of confidentiality) the percentage by age group. It is interesting to note that the doctors with no special interest are concentrated in the older age brackets: some degree of specialisation is more common among the younger general physicians. As far as individual special interests are concerned, those with a high percentage of doctors in the older age groups are: haematology (53 per cent aged 50 and over); neurology (69 per cent) and rheumatology and rehabilitation (55 per cent). This compares with 38 per cent of all respondents. Conversely, those specialties which have a predominantly young group of consultants are clinical pharmacology and therapeutics (only 23 per cent aged 50 and over); diseases of the chest (27 per cent); gastroenterology (28 per cent); medical oncology (21 per cent); nephrology (24 per cent).

Sex and Place of Birth

The great majority of general physicians are men born either in Great Britain or Ireland. At 31st December 1979 less than 4 per cent (38) were women and just over 8 per cent (84) were born overseas. The only notable difference between female and male interests was that there was proportionally less female interest expressed in cardiology (only 1 out of 33). Overseas doctors accounted for 50 per cent of the doctors with a special interest in infectious diseases.

Regional Variations

There were some regional differences in special interests, although the pattern varied between specialties: no region, however, was exceptionally high in the proportion of doctors having no special interest. Table 4 shows the major concentration of expertise by specialty and region.

It gives the estimated total number of doctors for each category (i.e. the number we would have expected given a 100 per cent response to the survey under the assumption of no bias) and also gives the ratio of those doctors to the appropriate number returned at 30th September 1979 (i.e. those doctors who are employed as consultants in that specialty) for comparative purposes. National ratios are also quoted. (N.B. Properly speaking, 31st December 1979 figures should have been used for the calculation of the ratios, as the statistics at this date were used as a basis for the survey. However, there was little change between 30th September 1979 and 31st December 1979 and as the September statistics are more widely available they were used instead.) The two specialties with the highest ratios are endocrinology and gastroenterology. However, there are also isolated pockets with a high ratio, such as cardiology in South Western RHA and medical oncology in South East Thames RHA. The distribution of special interest by region and specialty could be affected by a number of factors, for example, a low number of consultants with the specialty as a major one could lead to a relatively high number of general physicians with it as a special interest, or a region would be recognised as a centre for one of the smaller specialties and hence attract both a high number of main specialty and second specialty consultants. Region/specialty combinations with a high ratio of special interest general physicians may pose problems in ensuring adequate training.

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Table 4. Estimated¹ total number of respondents by region for selected specialties² (first figure) and ratio of number by special interest to the number of consultants working principally in that specialty (figure in brackets) at 30th September 1979.

Specialty	England and Wales	Northern RHA	Yorkshire RHA	Trent RHA	East Anglia RHA	NW Thames RHA	NE Thames RHA	SE Thames RHA	SW Thames RHA	Wessex RHA	Oxford RHA	South Western RHA	West Midlands RHA	Mersey RHA	North Western RHA	London Teaching Hospitals	PG Wales
Cardiology	141.9 (1.29)	10.1 (1.45)	14.6 (2.44)	13.5 (2.70)	3.4 (1.13)	13.5 (0.97)	13.5 (1.23)	7.9 (0.72)	7.9 (1.13)	5.6 (1.41)	5.6 (1.41)	9.0 (9.01)	7.9 (0.53)	7.9 (1.31)	15.8 (1.75)	—	5.6 (1.13)
Clinical pharmacology & therapeutics	14.6 (0.41)	1.1 (0.56)	—	2.3 (0.45)	—	4.5 (0.64)	2.3 (0.56)	1.1 (0.28)	—	—	—	1.1 *	—	2.3 (0.75)	—	—	—
Diseases of the chest	128.4 (0.53)	10.1 (0.53)	4.5 (0.35)	10.1 (0.68)	3.4 (0.68)	12.4 (0.41)	7.9 (0.34)	12.4 (0.54)	9.0 (0.82)	6.8 (0.68)	5.6 (0.56)	10.1 (1.13)	7.9 (0.21)	5.6 (0.51)	11.3 (0.54)	—	11.3 (0.59)
Endocrinology & Diabetes	260.1 (13.00)	15.8 *	19.1 *	20.3 (20.27)	9.0 *	25.9 (5.18)	21.4 (4.28)	22.5 (11.26)	14.6 *	9.0 (9.01)	12.4 *	14.6 *	23.6 (5.91)	12.4 *	24.8 (12.39)	1.1 (1.13)	13.5 *
Gastroenterology/ Liver Disease	197.1 (5.05)	13.5 *	12.4 *	15.8 *	5.6 (5.63)	24.8 (6.19)	19.1 (3.83)	18.0 (9.01)	15.8 *	10.1 (5.07)	6.8 *	13.5 *	7.9 (0.49)	6.8 (2.25)	16.9 (3.38)	—	10.1 (10.13)
Geriatric medicine	11.3 (0.03)	2.3 (0.08)	—	—	4.5 (0.32)	—	—	1.1 (0.04)	1.1 (0.05)	—	1.1 (0.07)	—	—	—	1.1 (0.03)	—	—
Haematology	21.4 (0.07)	2.3 (0.13)	1.1 (0.08)	3.4 (0.16)	—	—	3.4 (0.09)	—	1.1 (0.08)	—	2.3 (0.23)	—	2.3 (0.07)	1.1 (0.11)	3.4 (0.13)	—	1.1 (0.09)
Immunopathology	6.8 (0.17)	—	—	1.1 (0.56)	—	4.5 (0.45)	—	—	—	—	1.1 (1.13)	—	—	—	—	—	—
Infectious diseases	11.3 (0.43)	2.3 *	1.1 (0.38)	—	1.1 *	2.3 (1.13)	—	1.1 (0.28)	—	—	1.1 *	—	2.3 (0.56)	—	—	—	—
Medical oncology	15.8 (0.69)	—	1.1 (1.13)	1.1 *	—	1.1 (0.16)	1.1 (0.28)	4.5 (4.50)	1.1 *	—	1.1 *	—	—	—	1.1 (0.56)	3.4 (0.84)	—
Nephrology	55.2 (0.92)	5.6 (1.88)	1.1 (0.38)	2.3 (0.38)	2.3 (2.25)	7.9 (1.13)	7.9 (1.31)	1.1 (0.09)	1.1 (1.13)	4.5 (1.13)	2.3 (2.25)	3.4 (3.38)	4.5 (0.56)	1.1 (0.56)	3.4 (0.84)	—	6.8 *
Neurology	14.6 (0.09)	1.1 (0.11)	1.1 (0.14)	1.1 (0.16)	1.1 (0.23)	—	—	—	—	1.1 (0.16)	—	2.3 (0.28)	2.3 (0.20)	—	1.1 (0.10)	1.1 (0.05)	2.3 (0.45)
Rheumatology & Rehabilitation	22.5 (0.11)	—	2.3 (0.38)	—	1.1 (0.14)	1.1 (0.03)	2.3 (0.07)	—	1.1 (0.07)	2.3 (0.10)	1.1 (0.08)	2.3 (0.38)	6.8 (1.35)	1.1 (0.38)	1.1 (0.07)	—	—

*No consultants in the region had this specialty as a major specialty on 30th September 1979.
¹ Figures are weighted up by a factor of 1.1261.
² Only specialties for which there were more than 5 respondents in the survey and which were used in the Department's annual statistics are included.