

Trends in doctors' early career choices for general practice in the UK:

longitudinal questionnaire surveys

Abstract

Background

The percentage of newly qualified doctors in the UK who want a career in general practice declined substantially in the 1990s. The English Department of Health expects that half of all doctors will become GPs.

Aim

To report on choices for general practice made by doctors who qualified in 2000, 2002, 2005, 2008, and 2009.

Design and setting

A structured, closed questionnaire about future career intentions, sent to all UK medical graduates.

Method

Questionnaires sent 1 year after qualification (all cohorts) and 3 years after (all except 2008 and 2009).

Results

Percentages of doctors who expressed an unreserved first choice for general practice in the first year after qualification, in the successive five cohorts, were 22.2%, 20.2%, 23.2%, 21.3%, and 20.4%. Percentages who expressed any choice for general practice — whether first, second or third — were 46.5%, 43.4%, 52.6%, 49.5%, and 49.9%. Three years after qualification, an unreserved first choice was expressed, in successive cohorts, by 27.9%, 26.1%, and 35.1%. Doctors from newly established English medical schools showed the highest levels of choice for general practice.

Conclusion

The percentage of doctors, in their first post-qualification year, whose first choice of eventual career was general practice has not changed much in recent years. By year 3 after qualification, this preference has increased in recent years. At years 1 and 3, the overall first choice for general practice is considerably lower than the required 50%, but varies substantially by medical school. In depth studies of why this is so are needed.

Keywords

career choice; general practice; junior doctors; medical education; workforce planning.

INTRODUCTION

Recruitment of sufficient doctors to general practice is an issue of longstanding importance in medical workforce planning. In the UK, as elsewhere,¹⁻⁴ there is concern that too few young doctors want careers in general practice. In a previous study it was reported that, in their first post-qualification year, 23% of UK graduates of 2002 wanted a career in general practice;⁵ but that GPs comprised 51% of the career grade workforce.⁵ The Department of Health in England currently intends that 50% of newly qualified doctors should be recruited to general practice to meet workforce requirements: 'in future at least half of doctors going into specialty training will be training as GPs'.⁶

Doctors' intended specialty choices, soon after graduation, are an early guide to their preferred career destinations, available before they apply for specialist training, and reflect doctors' aspirations developed during, and nurtured at, medical school.

The authors have surveyed UK medical graduates for many years. In the 1970s, over one-third of all newly-qualified doctors wanted careers in general practice, rising to 44% in 1983, but falling to 20% in 1996.⁷ The current study reports findings from the cohorts of 2000, 2002, 2005, 2008, and 2009.

METHOD

Questionnaires were sent to all UK medical graduates in selected qualification years 1, 3, and 5 years after graduation, and at longer time intervals after that. This study's

methods are described elsewhere.^{7,8} Several reminders were sent to non-responders.

In each survey the authors sought to contact the whole cohort at the time of qualification. Addresses were obtained from doctors' registrations with the General Medical Council (GMC), and from responders themselves, and were regularly updated.

Doctors are asked to specify their career choice of specialty and to be 'as general or specific as you wish'. Doctors can, if they wish, list up to three choices of specialty in order of preference and can indicate choices of equal preference.

Standard summary statistics and confidence intervals (adjusted for finite populations) were used. Trends and significant differences were assessed using χ^2 tests and McNemar's test for the significance of changes.⁹

This study reports percentages of men and women in each cohort who expressed a preference for a career in general practice. Historically more women than men have chosen general practice, and, in successive UK cohorts of doctors, there has been a rising proportion of women. Further, in these surveys, a higher percentage of women than men reply. Accordingly, percentages for each cohort are given that include adjustment for gender make-up (in practice, the unadjusted and adjusted figures differed by very little); and numbers scaled up from responder data to reflect the size of the whole cohort.

TW Lambert, MSc, statistician; **MJ Goldacre**, FFPH, FRCP, professor of public health, UK Medical Careers Research Group, Department of Public Health, University of Oxford, Oxford.

Address for correspondence

Trevor Lambert, Unit of Health-Care Epidemiology, Department of Public Health, University of Oxford, Rosemary Rue Building, Old Road Campus, Oxford, OX7 3LF.

E-mail: trevor.lambert@dph.ox.ac.uk

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How this fits in

In the UK it is expected that about half of all newly qualified doctors will eventually become GPs. In the 1990s, the percentage of UK-trained doctors who, when they left medical school, wanted to become GPs was lower than that required to meet service needs. This study's data, from questionnaires sent to all qualifiers in the years 2000, 2002, 2005, 2008, and 2009, from all UK medical schools, shows that about 20–22% of doctors in their first post-qualification year expressed a career preference for general practice as their unequivocal first choice of eventual career. There was no appreciable difference in this across the cohorts.

RESULTS

Response

Overall, of those for whom deliverable addresses were available, the response rate 1 year after qualification was 57% (15103/26481 doctors); and 3 years after qualification it was 63% (8425/13 311). Response varied across cohorts in year 1 from 69% of qualifiers of 2000 to 47% of those of 2009; and, in year 3, from 71% of qualifiers of 2000 to 56% of those of 2005.

Untied first choices for general practice 1 year after graduation

An untied first choice is a first choice for general practice without the responder offering an equal first choice for another specialty. In the 2009 cohort, 20.4% of

responders specified an untied first choice in 2010 for general practice [95% finite population confidence interval (CI) = 19.3% to 21.5%]. Equivalent percentages for the cohorts of 2000, 2002, 2005, and 2008 were, respectively, 22.2% [95% CI = 21.3% to 23.1%], 20.2% [95% CI = 19.2% to 21.1%], 23.2% [95% CI = 22.3% to 24.1%], and 21.3% [95% CI = 20.3% to 22.3%]. There was no trend over time (Table 1a; χ^2 test for linear trend: $\chi^2_1 = 1.2$, $P = 0.28$).

Whole cohort estimates of the percentage choosing general practice, after adjusting for the higher percentage of women than men who responded to the surveys, were slightly lower at 21.6%, 19.5%, 22.6%, 20.9%, and 20.1%, respectively, for the cohorts of 2000, 2002, 2005, 2008, and 2009.

All first choices for general practice (whether or not shared with another specialty) 1 year after graduation

When those who chose general practice as their first choice jointly with another specialty ('tied first choices') were added (Table 1b), the percentages who chose general practice as a first choice, in the cohorts of 2000, 2002, 2005, 2008, and 2009 were, respectively, 29.6% [95% CI = 28.7% to 30.6%], 26.3% [95% CI = 25.3% to 27.3%], 33.0% [95% CI = 31.9% to 34.0%], 31.0% [95% CI = 29.9% to 32.1%], and 30.6% [95% CI = 29.3% to 31.8%]. Whole cohort estimates were slightly lower (Table 1b). There was evidence of a modest upward linear trend in all first choices for general practice ($\chi^2_1 = 5.9$, $P = 0.015$).

Table 1. Career preferences in the first year after qualification: percentage of responders in each graduation year who specified a career in general practice, and whole cohort estimates (see Method)

Graduation year	Responders			Whole cohort estimate
	Men % (n/N)	Women % (n/N)	Total % (n/N)	
a) Untied first choices for general practice				
2009	15.4 (154/998)	22.9 (440/1919)	20.4 (594/2917)	20.1 (1317)
2008	16.2 (185/1140)	24.0 (519/2162)	21.3 (704/3302)	20.9 (1421)
2005	14.1 (166/1181)	28.8 (560/1947)	23.2 (726/3128)	22.6 (1160)
2002	12.6 (138/1091)	25.0 (422/1687)	20.2 (560/2778)	19.5 (865)
2000	15.1 (198/1307)	27.7 (463/1671)	22.2 (661/2978)	21.6 (955)
b) Tied and untied first choices for general practice ^a				
2009	23.5 (235/998)	34.2 (657/1919)	30.6 (892/2917)	30.1 (1979)
2008	23.0 (262/1140)	35.2 (762/2162)	31.0 (1024/3302)	30.4 (2063)
2005	22.2 (262/1181)	39.5 (769/1947)	33.0 (1031/3128)	32.3 (1655)
2002	17.2 (188/1091)	32.1 (542/1687)	26.3 (730/2778)	25.5 (1131)
2000	20.4 (267/1307)	36.8 (615/1671)	29.6 (882/2978)	28.8 (1275)
c) Any choice for general practice ^b				
2009	40.0 (399/998)	55.1 (1058/1919)	49.9 (1457/2917)	47.7 (3238)
2008	40.6 (463/1140)	54.3 (1173/2162)	49.5 (1636/3302)	49.0 (3326)
2005	41.0 (484/1181)	59.7 (1162/1947)	52.6 (1646/3128)	51.9 (2661)
2002	32.0 (349/1091)	50.9 (858/1687)	43.4 (1207/2778)	42.5 (1883)
2000	36.0 (470/1307)	54.7 (914/1671)	46.5 (1384/2978)	45.5 (2017)

^aIncludes all doctors who chose general practice as a first choice, whether or not combined with another specialty. ^bIncludes all doctors who chose general practice, whether as first, second or third choice.

Any choice for general practice 1 year after graduation

Table 1c shows the percentages in each graduation year that chose general practice, whether as first, second or third choice. In the 2008 and 2009 cohorts, approximately half the responders chose general practice: among graduates of 2008 the percentage was 49.5% [95% CI = 48.3% to 50.8%] and among graduates of 2009 it was 49.9% [1457/2917, 95% CI = 48.6% to 51.3%]. In the cohorts of 2000, 2002, and

2005 the corresponding percentages were 46.5% [95% CI = 45.4% to 47.5%], 43.4% [95% CI = 42.3% to 44.6%], and 52.6% [95% CI = 51.5% to 53.7%]. Whole cohort estimates were slightly lower (Table 1c). The upward linear trend from 2000 to 2009 was significant ($\chi^2_1 = 19.0$, $P < 0.001$).

As Table 1 shows, the percentage of women who chose general practice was considerably, and consistently, higher than that of men.

Table 2. Career preferences 1 year after graduation: percentages (numbers) of graduates who specified general practice as their choice of future career, grouped by clinical medical school attended

Medical school	Untied first choice for GP % (n)	Any first choice for GP % (n)	Any choice for GP % (n)	Total N
England				
Oxford and Cambridge				
Cambridge	13.0 [56]	21.1 [91]	34.5 [149]	432
Oxford	10.9 [46]	17.7 [75]	36.2 [153]	423
Total Oxford and Cambridge	11.9 [102]	19.4 [166]	35.3 [302]	855
London				
Imperial College	18.1 [140]	23.3 [180]	41.3 [320]	774
King's College	17.5 [167]	24.9 [237]	44.9 [427]	952
Queen Mary and Westfield	22.2 [123]	30.8 [171]	49.0 [272]	555
St George's	21.0 [110]	30.3 [159]	48.9 [256]	524
University College	19.8 [173]	26.1 [228]	45.0 [393]	874
Total London	19.4 [713]	26.5 [975]	45.3 [1668]	3679
Other English schools				
Birmingham	25.5 [198]	34.3 [266]	55.2 [428]	776
Bristol	18.0 [95]	27.3 [144]	45.6 [241]	528
Leeds	27.8 [166]	37.6 [225]	56.0 [335]	598
Liverpool	26.0 [139]	36.1 [193]	53.6 [287]	535
Manchester	22.3 [219]	30.5 [300]	50.6 [498]	984
Newcastle	22.6 [149]	31.6 [208]	50.9 [335]	658
Sheffield	24.1 [162]	33.6 [226]	50.4 [339]	673
Nottingham	22.2 [144]	31.2 [203]	48.9 [318]	650
Southampton	24.3 [121]	33.1 [165]	51.6 [257]	498
Leicester	20.9 [107]	29.7 [152]	47.9 [245]	512
Total other English	23.3 [1500]	32.5 [2082]	51.2 [3283]	6412
New English schools				
Peninsula	31.4 [37]	40.7 [48]	55.9 [66]	118
Brighton and Sussex	29.0 [31]	35.5 [38]	57.9 [62]	107
Hull York	30.4 [34]	43.8 [49]	65.2 [73]	112
East Anglia	19.1 [17]	34.8 [31]	61.8 [55]	89
Warwick	27.1 [56]	43.0 [89]	64.3 [133]	207
Total new English	27.6 [175]	40.3 [255]	61.5 [389]	633
Total England	21.5 [2490]	30.0 [3478]	48.7 [5642]	11 579
Scotland				
Aberdeen	24.0 [114]	33.5 [159]	50.9 [242]	475
Dundee	27.0 [111]	34.8 [143]	51.1 [210]	411
Edinburgh	14.9 [107]	23.2 [167]	39.2 [282]	719
Glasgow	18.9 [122]	28.6 [184]	46.1 [297]	644
Total Scotland	20.3 [457]	29.0 [653]	45.8 [1031]	2249
Wales (Cardiff)	23.5 [166]	33.9 [240]	55.6 [393]	707
Northern Ireland (Belfast)	23.7 [128]	33.5 [181]	47.5 [257]	541
Total	21.5 [3238]	30.2 [4552]	48.6 [7323]	15 076

In each column, the overall χ^2 test for significant differences by medical school was significant at $P < 0.001$.

Percentages which are higher or lower than the overall average ($P < 0.01$), based on analysis of adjusted standardised residuals, are marked bold in each column. Excludes 27 doctors who replied in year 1 but whose medical school was unknown.

Table 3. Career preferences in the third year after qualification: percentage of responders in each graduation year who specified a career in general practice, and whole cohort estimates (see Method)

Graduation year	Responders			Whole cohort estimate
	Men % (n/N)	Women % (n/N)	Total % (n/N)	
a) Untied first choices for general practice				
2005	25.9 (261/1009)	40.6 (691/1700)	35.1 (952/2709)	34.5 (1768)
2002	16.7 (177/1063)	32.0 (539/1685)	26.1 (716/2748)	25.2 (1116)
2000	20.1 (268/1333)	34.3 (561/1635)	27.9 (829/2968)	27.3 (1212)
b) Tied and untied first choices for general practice ^a				
2005	29.0 (293/1009)	43.8 (745/1700)	38.3 (1038/2709)	37.6 (1931)
2002	19.7 (209/1063)	36.4 (613/1685)	29.9 (822/2748)	28.9 (1283)
2000	21.7 (289/1333)	38.2 (624/1635)	30.8 (913/2968)	30.1 (1333)
c) Any choice for general practice ^b				
2005	35.0 (353/1009)	50.4 (856/1700)	44.6 (1209/2709)	43.9 (2253)
2002	30.7 (326/1063)	47.7 (803/1685)	41.1 (1129/2748)	40.1 (1778)
2000	31.4 (418/1333)	51.1 (836/1635)	42.3 (1254/2968)	41.4 (1836)

^aIncludes all doctors who chose GP as a first choice, whether or not combined with another specialty. ^bIncludes all doctors who chose GP, whether as first, second or third choice.

Variation by clinical medical school attended

When cohorts were combined and responders grouped by medical school attended, large differences by medical school were evident in the level of choices for general practice 1 year after graduation (Table 2). The highest rates of choice for general practice were found in most of the newly established English medical schools, and the lowest rates among graduates of Oxford and Cambridge. Schools whose levels of choice for general practice were higher or lower than the overall average are highlighted in Table 2.

Variation by graduate entry

Untied first choices for general practice were made by 23.5% (382/1628) of graduate entrants in the 2005, 2008, and 2009 cohorts, compared with 19.5% (1407/7220) of non-graduate entrants ($\chi^2_1 = 12.8$, $P < 0.001$). The percentages of graduate entrants and non-graduate entrants making any first choice for general practice (that is, including choices tied with another choice) were 34.9% (568/1628) and 28.7% (2075/7220) respectively ($\chi^2_1 = 23.7$, $P < 0.001$); the percentages making any choice for general practice (whether first, second or third choice) were 52.0% (846/1628) and 47.6% (3438/7220) respectively ($\chi^2_1 = 9.9$, $P = 0.002$).

Choices 3 years after graduation

The percentages of responders who chose general practice as an untied first choice 3 years after graduation (Table 3a) were 27.9%, 26.1%, and 35.1% in the cohorts of 2000, 2002, and 2005 respectively, a substantial increase between years 1 and 3 in each cohort. The percentages for all first

choices, whether tied or untied, were also higher in year 3 than in year 1 (Table 3b). By contrast, considering all choices for general practice (whether first, second or third choices), year 3 figures were lower than in year 1 (Table 3c).

Changes of choice between years 1 and 3

Changes of choice were examined for doctors who responded in both years 1 and 3 (Table 4). Of those who chose general practice as an untied first choice in year 1, 82% did so again in year 3. Women were a little more likely than men to do so. Fifteen per cent of doctors who did not choose general practice in year 1 did so in year 3.

In all, 773 responders chose general practice in year 3 but not year 1, while 271 chose general practice in year 1 but not year 3. The percentage who chose general practice increased from 22.4% (1531/6820) in year 1 to 29.8% (2033/6820) in year 3 (McNemar's test, $P < 0.001$). The net change represented 7.4% (502/6820) of responders, and meant that 38.0% (773/2033) of those who made a first choice for general practice in year 3 turned to it between years 1 and 3.

Women were a little more likely than men to switch to general practice between years 1 and 3.

Table 5 shows numbers who chose general practice as a first, second or third choice of specialty. For first, second or third choices combined, between years 1 and 3, there were net reductions, both for men and women, in the total numbers who chose general practice (all $P < 0.001$). For example, in year 1 3315 doctors gave a choice — first, second or third — for general practice. In year 3, the number had fallen to 2941; 946 doctors who considered general practice in

Table 4. Untied first choices for general practice: changes of choice between the first and third post-graduate years (cohorts of 2000, 2002, and 2005, combined)

	Third year choice		
	GP	Not GP	Total
a) Combined			
First year choice			
GP	1260	271	1531
Not GP	773	4516	5289
Total	2033	4787	6820
b) Men			
First year choice			
GP	300	79	379
Not GP	234	2022	2256
Total	534	2101	2635
c) Women			
First year choice			
GP	960	192	1152
Not GP	539	2494	3033
Total	1499	2686	4185

year 1 were no longer considering it, and 572 doctors were now considering general practice who had not considered it in year 1 (Table 5).

DISCUSSION

Summary

About one-fifth of UK graduates choose general practice as their sole first choice of career 1 year after graduation. This study's

data show that this fraction has remained largely static across the past decade. If second and third choices are included, the figure rises to approximately a half in the most recent two cohorts of 2008 and 2009 studied in 2009 and 2010, in line, at first sight, with current UK policy targets. However, many doctors choosing general practice as a second or third choice in their first postgraduate year will eventually train in their first choice of another specialty rather than in general practice.

Data 3 years after graduation for the 2000, 2002, and 2005 cohorts give further insights. The cohort estimate of 34.3% of 2005 graduates who regard general practice as their sole first choice after 3 years is indicative of the percentage which may be expected to embark upon specialist training in general practice at that stage; many more than the 22.6% expressing the same intention in year 1. Some of the rise no doubt reflects increasing acceptance of the likely availability of training and career grade posts in general practice compared with opportunities in other specialties. For others, change of choice towards general practice no doubt follows favourable changes in views about the desirability of a career in general practice. In the same span of time, between years 1 and 3, the total percentage of the 2005 qualifying year who chose general practice fell to 43.9%, compared with 51.9% who had expressed an interest in general practice at year 1, indicating a softening of initial choices for general practice which were uncertain. At least a partial explanation for this decline will be that doctors, originally content to enter general practice but preferring another specialty, will in fact have been on track for a career in the other specialty.

There was continued evidence of substantial differences in the level of choices for general practice among graduates of different medical schools, in line with the authors' previous study of the graduates of 1999 and 2000.¹⁰ Doctors from new medical schools in England showed a higher level of choices for general practice than doctors from other schools.

Graduate entrants were slightly more likely than non-graduate entrants to choose careers in general practice, as in earlier cohorts.¹¹ However, to date, doctors have not been asked whether they undertook a specific fast-track graduate entry course; many of these courses are recently established and it is perhaps too soon to tell to what extent they will affect career choices among their graduates.

Table 5. Any choice for general practice: changes of choice between the first and third post-graduate years (cohorts of 2000, 2002, and 2005, combined)

	Third year choice		
	GP	Not GP	Total
a) Combined			
First year choice			
GP	2369	946	3315
Not GP	572	2933	3505
Total	2941	3879	6820
b) Men			
First year choice			
GP	624	346	970
Not GP	215	1450	1665
Total	839	1796	2635
c) Women			
First year choice			
GP	1745	600	2345
Not GP	357	1483	1840
Total	2102	2083	4185

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Ethical approval

National Research Ethics Service, following referral to the Brighton and Mid-Sussex Research Ethics Committee in its role as a multi-centre research ethics committee (ref 04/Q1907/48).

Provenance

Freely submitted; externally peer reviewed.

Competing interests

The authors have declared no competing interests.

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Strengths and limitations

Strengths are that the study is large-scale (over 15 000 responders in year 1), includes all UK medical schools, covers five cohorts of newly qualified doctors, and its longitudinal design means that each doctor's replies can be compared in years 1 and 3. Its main weakness is that some level of non-response is inevitable and the possibility of responder bias must be considered. Non-response varied between cohorts; but, in year 1 first choices (that is, the firmest early decision), the percentage who chose general practice was stable. This suggests that trends in non-responder bias are unlikely. Choices for general practice of doctors who responded to the first two mailings were compared with those who responded to subsequent mailings. Late responders were used as a proxy for non-responders (because the latter would have been non-responders, if the study had been confined to two mailings). The percentages who chose general practice were very similar in the two groups.

Comparison with existing literature and implications for future research

Year 1 results for the cohorts of 2008 and 2009 were broadly similar to results in earlier cohorts. It seems likely that the 2008 and 2009 cohorts will therefore have similar aspirations at year 3 as those in earlier cohorts. This suggests that the 50% target, for recruiting to general practice, is a long way off the actual aspirations of doctors when they leave medical school.

The English Centre for Workforce Intelligence, reporting to the Department of Health on recommendations for medical specialty training for 2011, specifies that 2800 doctors were accepted for GP training in 2010 and recommends '... that moderate expansion is allowed from the existing GP training posts numbers for 2011 towards 3000 trainees'.¹² This number would represent 46% of the registered UK medical graduates of 2009.

Data from the 2008 and 2009 cohorts provide some evidence that the higher level of preference for general practice expressed by women than men, in the first year after qualification, is falling. If the gender gap is truly in decline, it may not be possible to rely for much longer on the 'demographic uplift' of an increasing percentage of women among the graduates resulting in more choosing general practice.

Information about early career preferences matters because early choices

for general practice are highly predictive of eventual careers. For example, in previous cohorts 82% of doctors who specified that they wanted to become GPs in year 1, and 92% who specified this in year 3, eventually practised as GPs.¹³

Extrapolating from the responder data to whole cohorts, and expressing the findings as numbers rather than percentages, the total number of young doctors choosing general practice 1 year after graduation, whether as first, second or third choice, has increased substantially since the year 2000. This is due partly to the expansion of medical schools, and partly to increased numbers of women in medicine, rather than any substantial change in the underlying level of choice for general practice by either sex.

The doctors in previous cohorts regard general practice highly.^{14,15} Nonetheless, a much smaller percentage of doctors leave medical school wanting a career in general practice than the NHS needs. In this context the high level of choices for general practice among the first graduates from the new English schools is interesting.

This mirrors experience in the US, where the American Academy of Family Physicians has recently reported¹⁶ just a very small increase in interest in primary care careers among trainees in 2010, citing the following factors 'Multiple forces including student perspectives of the demands, rewards, and prestige of the specialty; national dialogue about health care reform; turbulence in the economic environment; lifestyle issues; the advice of deans; and the impact of faculty role models continue to influence medical student career choices.' Its report¹⁶ continues 'Despite matching the highest number of US seniors into family medicine residencies since 2004, in 2010 the production of family physicians remains insufficient to meet the current and anticipated need to support the nation's primary care infrastructure.'

In depth study of why this is so in the UK, and consideration of policy changes to encourage more doctors to enthusiastically embrace general practice as their first career choice, is required. Such study might consider the extent to which the level of choices for general practice in different schools reflects the different entry characteristics and aspirations of students, or whether it reflects the degree to which intentions are moulded by undergraduate experiences.

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