

Country of training and ethnic origin of UK doctors: database and survey studies

Michael J Goldacre, Jean M Davidson, Trevor W Lambert

Abstract

Objectives To report on the country of training and ethnicity of consultants in different specialties in the NHS, on trends in intake to UK medical schools by ethnicity, and on the specialty choices made by UK medical graduates in different ethnic groups.

Design Analysis of official databases of consultants and of students accepted to study medicine; survey data about career choices made by newly qualified doctors.

Setting and subjects England and Wales (consultants), United Kingdom (students and newly qualified doctors).

Results Of consultants appointed before 1992, 15% had trained abroad; of those appointed in 1992-2001, 24% had trained abroad. The percentage of consultants who had trained abroad and were non-white was significantly high, compared with their overall percentage among consultants, in geriatric medicine, genitourinary medicine, paediatrics, old age psychiatry, and learning disability. UK trained non-white doctors had specialty destinations similar to those of UK trained white doctors. The percentage of UK medical graduates who are non-white has increased substantially from about 2% in 1974 and will approach 30% by 2005. White men now comprise little more than a quarter of all UK medical students. White and non-white UK graduates make similar choices of specialty.

Conclusions Specialist medical practice in the NHS has been heavily dependent on doctors who have trained abroad, particularly in specialties where posts have been hard to fill. By contrast, UK trained doctors from ethnic minorities are not over-represented in the less popular specialties. Ethnic minorities are well represented in UK medical school intakes; and white men, but not white women, are now substantially under-represented.

Introduction

Immigration to the United Kingdom in recent decades has changed the ethnic composition of the medical workforce in two major respects. Firstly, the NHS has relied heavily, and increasingly, on the immigration of doctors to make up the shortfall in numbers of "home trained" doctors. Secondly, the ethnic composition of doctors trained in UK medical schools has changed as second and third generation UK educated pupils from ethnic minorities have entered medicine in increasing numbers. We report on these trends.

Methods

Consultants in England: analysis of national database—The Department of Health maintains an annually updated database of all NHS consultants in England and Wales for the Advisory Committee on Clinical Excellence Awards. We used the 2002 database.¹ Ethnic groups within this database, and in the other two data-

bases described below, were defined according to the categories used by the Office for National Statistics—white, Indian, Pakistani, Bangladeshi, Chinese, black Caribbean, black African, black other, and other ethnic group. We analysed the data both by individual ethnic group and in four broader groups—UK trained white doctors, UK trained non-white doctors, white doctors who had trained abroad, and non-white doctors who had trained abroad.

Universities and Colleges Admissions Service (UCAS) statistic—Aggregated statistics from the Universities and Colleges Admissions Service include the ethnic group of accepted "home" applicants (that is, UK based) to UK medical schools by year of acceptance from 1996 to 2002.

Survey data from the UK Medical Careers Research Group—We have undertaken cohort studies of all UK medical graduates in particular years, using postal questionnaires, to seek information about doctors' early choice of eventual career and their actual career destinations.^{2,3} We analysed the distribution by ethnic group of respondents to surveys undertaken between 1974 and 2000, and we have tabulated the career choices of the graduates of 1993, 1996, 1999, and 2000.

Results

Consultants in post in 2001: distribution by ethnic group and specialty

The distribution of consultants by each demographic group has changed over time: the percentage who trained abroad increased most substantially in the last 10 years covered by the 2002 database (figure). Accordingly, we have summarised the results for consultants who were first appointed before 1992, and for those appointed between 1992 and 2001.

The consultants first appointed during 1964-91 showed significant and substantial differences in the distribution of the four demographic groups between specialties ($P < 0.001$) (table 1). Compared with their overall percentages in the consultant workforce, significantly and substantially lower percentages of UK trained white doctors, and higher percentages of non-white doctors trained abroad, were in geriatric medicine, genitourinary medicine, general psychiatry, old age psychiatry, and learning disability; and significantly higher percentages of UK trained white doctors, and significantly lower percentages of non-white doctors trained abroad, were in general medicine and general surgery. In addition, in radiology there was a significantly higher percentage of UK

UK Medical Careers Research Group, Department of Public Health, University of Oxford, Oxford OX3 7LF

Michael J Goldacre
professor of public health

Jean M Davidson
research officer

Trevor W Lambert
statistician

Correspondence to:
M J Goldacre
michael.goldacre@dphpc.ox.ac.uk

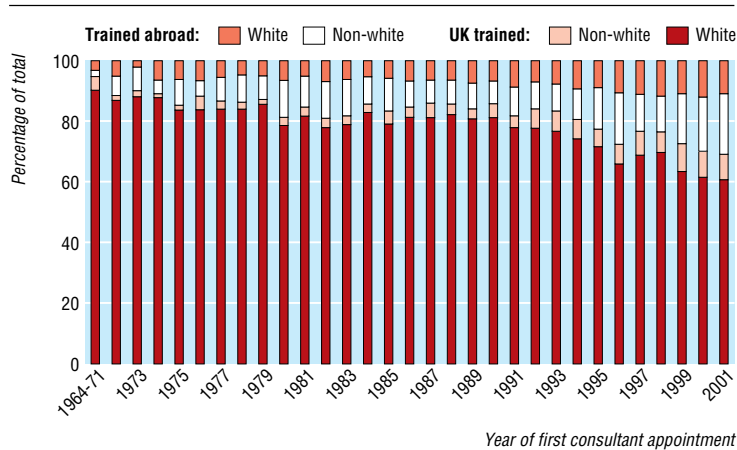
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An extra table appears on bmj.com giving details of career choices of newly qualified doctors from ethnic minority groups



Percentage of NHS consultants by ethnic group and place of training grouped by the year of their first consultant appointment

Table 1 Percentages of NHS consultants in post in England and Wales in 2001 by year of first consultant appointment, place of training (UK or abroad), ethnicity, and specialty

Specialty	Consultants by place of training and ethnicity			
	UK trained		Trained abroad	
	White	Non-white	White	Non-white
Year of first consultant appointment 1964-91				
General medicine (n=1787)	89.6*	2.9	4.5	3.0†
Geriatric medicine (n=369)	67.8†	5.4	3.8	23.0*
Genitourinary medicine (n=113)	61.9†	10.6*	4.4	23.0*
Paediatrics (n=619)	83.4	3.2	6.8	6.6
Accident and emergency (n=139)	71.9	7.2	5.0	15.8
General surgery (n=569)	91.4*	3.0	3.2	2.5†
Cardiothoracic surgery (n=77)	74.0	7.8	11.7	6.5
Other surgical specialty (n=1334)	84.0	2.7	6.1	7.2
Obstetrics and gynaecology (n=510)	83.9	2.9	5.7	7.5
Anaesthetics (n=1395)	84.0	2.6	5.3	8.1
Radiology (n=856)	77.0†	4.6	7.6	10.9
Clinical oncology (n=188)	89.9	2.1	4.8	3.2
Pathology (n=1022)	79.7	3.3	7.0	9.9
Psychiatry (n=996)	71.0†	2.6	10.4*	16.0*
Learning disability (n=90)	37.8†	3.3	7.8	51.1*
Old age psychiatry (n=143)	65.0†	2.8	7.7	24.5*
Public health medicine (n=272)	82.4	3.3	8.1	6.3
Total (n=10 479)	81.5	3.3‡	6.2	9.1§
Year of first appointment 1992-2001				
General medicine (n=2265)	72.3*	8.7	8.6	10.4†
Geriatric medicine (n=332)	60.8	9.0	9.3	20.8*
Genitourinary medicine (n=121)	62.8	9.9	7.4	19.8
Paediatrics (n=970)	60.7†	6.0	9.3	24.0*
Accident and emergency (n=299)	65.6	7.7	10.4	16.4
General surgery (n=730)	69.5	7.8	7.1	15.6
Cardiothoracic surgery (n=98)	56.1	12.2	14.3	17.3
Other surgical specialty (n=1921)	64.9†	7.1	11.6	16.4
Obstetrics and gynaecology (n=684)	65.5	8.2	8.6	17.7
Anaesthetics (n=2030)	71.6	6.7	9.5	12.2
Radiology (n=772)	71.8	9.6	8.3	10.4
Clinical oncology (n=255)	78.4*	6.3	7.8	7.5
Pathology (n=935)	67.2	6.8	10.7	15.3
Psychiatry (n=1275)	69.5	4.0†	14.8*	11.7
Learning disability (n=106)	52.8†	7.5	16.0	23.6
Old age psychiatry (n=221)	67.4	5.4	12.7	14.5
Public health medicine (n=367)	80.9*	6.0	8.4	4.6†
Total (n=13 381)	68.6	7.2¶	10.0	14.1**

*Percentage significantly high for specialty compared with overall total (P<0.001).
 †Percentage significantly low for specialty compared with overall total (P<0.001).
 ‡Ethnic composition: black 0.6%, Indian subcontinent 1.2%, Chinese 0.3%, other 1.2%.
 §Ethnic composition: black 0.8%, Indian subcontinent 4.8%, Chinese 0.2%, other 3.3%.
 ¶Ethnic composition: black 0.9%, Indian subcontinent 3.3%, Chinese 1.0%, other 2.1%.
 **Ethnic composition: black 2.1%, Indian subcontinent 7.6%, Chinese 0.2%, other 4.2%.

trained white doctors than of other demographic groups, in psychiatry a significantly higher percentage of white doctors trained abroad, and in genitourinary medicine a significantly higher percentage of UK trained non-white doctors. We also found significant differences between the demographic groups in the specialties of employment of the consultants who were first appointed in 1992-2001 (P<0.001).

Among all consultants in post in 2001 who had been appointed from 1964 to 2001, the differences between specialties in the representation of the four demographic groups were significant (P<0.001) (table 1). Non-white consultants who had trained abroad made up 11.9% of the consultant workforce. They were significantly over-represented in geriatric medicine (22.0%), genitourinary medicine (21.4%), paediatrics (17.2%), learning disability (36.2%), and old age psychiatry (18.4%) and were significantly under-represented in general medicine and public health medicine. Consultants who were white and had trained abroad made up 8.4% of the workforce. They were significantly over-represented in general psychiatry (12.9%) and significantly under-represented in general medicine (6.8%) and general surgery (5.4%). UK trained non-white doctors comprised 5.5% of all consultants and were significantly under-represented in psychiatry (3.4%). There were no other significant differences.

A higher percentage of white than of non-white consultants were women (24.0% of white consultants (4729/19710) v 18.4% of non-white doctors (763/4150), P<0.001). This difference was more pronounced among consultants trained abroad (27.4% of white doctors were women (547/1994) v 17.4% of the non-white doctors (495/2840), P<0.001).

Ethnic group of graduates from UK medical schools

The percentage of doctors from ethnic minority groups who were admitted to UK medical schools in 1996, and therefore due to graduate in or soon after 2001, was 26.9% (20.7% Asian, 2.1% Chinese, 1.5% black, 2.5% other non-white) (table 2). The corresponding percentage of ethnic minority doctors graduating from UK medical schools by 2004-7 is projected to be 28-29%. By comparison, in 2001, 9% of the population of England and Wales were from ethnic minority groups, and, among people aged 20-24 years (the typical age range for medical students), 12.8% were from ethnic minority groups. People of Asian ethnic origin (including Chinese) comprised 8.0% of the population in this age range and 20.8% of the accepted medical students in 2002. People of black ethnic origin comprised 2.5% of the population and 2.6% of the medical students. White people comprised 87.2% of the relevant resident population and 72.0% of the medical students.⁴ White men comprised 43.5% of the UK population aged 20-24 years but only 26.0% of the UK medical students in 2002.

Career choices of newly qualified doctors by ethnic origin

Detailed career choices of doctors in their preregistration year who qualified from UK medical schools in 1993, 1996, 1999, and 2000 grouped by ethnic origin are given on bmj.com. Career choices varied significantly with ethnic origin for both men and women (P<0.001 in both cases). Non-white men were more likely than white men to choose specialist surgery and

Table 2 Ethnicity and sex of students accepted at UK medical schools between 1996 and 2002 compared with UK population of comparable age. Values are percentages

Ethnicity	Year of admission (projected year of graduation)						UK population in 2001 aged 20-24 years (n=3 122 212)	
	1996 (2001) (n=4394)	1997 (2002) (n=4472)	1998 (2003) (n=4590)	1999 (2004) (n=4767)	2000 (2005) (n=5129)	2001 (2006) (n=5574)		2002 (2007) (n=6186)
Ethnicity								
White:	73.1	74.0	74.9	71.2	71.6	70.4	72.0	87.2
Men	31.3	31.8	30.5	28.8	27.5	27.2	26.0	43.5
Women	41.8	42.3	44.4	42.5	44.1	43.2	46.0	43.7
Non-white:	26.9	26.0	25.1	28.8	28.4	29.6	28.0	12.8
Men	14.4	13.9	13.7	14.5	14.2	13.5	12.8	6.2
Women	12.5	12.0	11.4	14.3	14.3	16.1	15.2	6.6
Ethnic minority groups								
Black:	1.5	1.5	1.3	2.2	2.0	2.6	2.6	2.5
Men	0.7	0.8	0.5	1.0	1.0	0.9	1.1	1.2
Women	0.8	0.7	0.8	1.3	1.0	1.8	1.5	1.3
Asian:	20.7	20.3	20.0	21.1	21.2	20.6	18.6	7.0
Men	11.4	11.2	11.6	11.2	10.8	10.0	8.8	3.4
Women	9.4	9.1	8.4	9.9	10.4	10.6	9.9	3.6
Chinese:	2.1	1.9	1.7	2.2	2.2	2.0	2.2	1.0
Men	1.0	1.0	0.8	1.0	1.1	0.9	1.0	0.5
Women	1.1	0.9	0.9	1.2	1.1	1.1	1.2	0.5
Other*:	2.5	2.3	2.1	3.2	3.0	4.4	4.5	2.3
Men	1.3	1.0	0.7	1.3	1.3	1.8	1.9	1.1
Women	1.2	1.3	1.4	1.9	1.7	2.6	2.7	1.2

Data for students from Universities and Colleges Advisory Service (for UK domiciled applicants accepted to preclinical medicine courses, after excluding those of unknown ethnic origin). Data for UK population from 2001 census.

*Includes the "mixed race" categories that were added from 2001 for undergraduate entry.

less likely to choose anaesthetics. Non-white women were less likely than white women to choose general practice and more likely to choose general medicine.

There were no significant differences between different ethnic subgroups in men's choices of mainstream specialty, but there was a significant difference for women ($P < 0.001$). Chinese women were significantly more likely than women from other ethnic minority groups to choose general medicine, and significantly less likely to choose general practice; women from the Indian subcontinent were significantly more likely than other women from ethnic minorities, though a little less likely than white women, to choose general practice.

Discussion

We found that hospital practice in the NHS has become increasingly dependent on doctors who trained overseas: they represent 15% of consultants appointed during 1964-91 and 24% of those appointed since 1991. These doctors comprise a particularly high percentage of consultants in geriatric medicine, psychiatry, learning disability, and genitourinary medicine. By contrast, doctors from ethnic minority groups who trained in the United Kingdom have similar career destinations to those of UK trained white doctors. White men, but not white women, are substantially under-represented in the current intakes to UK medical schools.

Immigrant doctors who trained abroad

Medical immigration into the United Kingdom has increased, and the United Kingdom is a substantial net importer of doctors.^{5 6} For example, 58% of all doctors who obtained full registration with the General Medical Council in 2002 qualified outside the United Kingdom.⁷ There are various reasons why doctors migrate to this country—to take up prestigious posts for which there is international competition; to occupy

vacancies unfilled by UK trained doctors; for family reasons; to move from areas of lower professional opportunity; to increase their income; and to escape from areas of civil unrest.

Given the varied reasons for immigration, it is not surprising that the job destinations of doctors who trained abroad do not necessarily match those of home trained doctors. As has long been recognised,⁵ doctors trained abroad are over-represented at the consultant level in specialties that can be hard to fill. It is also well recognised that there are large numbers of non-white doctors who trained abroad in career grade hospital posts below the level of consultant and in inner city general practice.⁸

Among UK trained doctors, the postgraduate experience and career posts of white and non-white consultants should be similar. Indeed, we found that their career destinations are sufficiently similar, especially for those appointed in 1992-2001, to conclude that the ethnic origin of UK trained doctors has little influence on opportunity of entry to particular specialties. The main differences in career destinations between white and non-white consultants are associated with having trained abroad rather than ethnic origin.

UK doctors from ethnic minorities

The percentage of UK medical students from ethnic minorities is now substantial.⁹ We show how the percentage has risen over time. From less than 2% of newly qualified doctors in the early 1970s, it will soon approach 30%, well in excess of the representation of people from ethnic minorities in the general population. This raises important questions for policy makers: should the ethnic mix of intake to medical schools broadly reflect the ethnic mix of the community from which students are drawn? If so, what should be the mechanisms to achieve such representation?

Monitoring ethnic group and sex is generally undertaken in the expectation that, if there are

What is already known on this topic

For many years the NHS has relied on doctors who trained overseas to maintain adequate medical staffing, and these doctors, many of whom are from non-white ethnic groups, have tended to be concentrated in the less popular specialties

The percentage of newly trained UK medical graduates who are from non-white ethnic groups has increased substantially in recent years

What this study adds

NHS hospitals have become increasingly dependent on doctors who trained overseas: they represent 15% of consultants appointed during 1964-91 and 24% of those appointed since 1991

These doctors comprise a particularly high percentage of consultants in geriatric medicine, psychiatry, learning disability, and genitourinary medicine

By contrast, UK trained doctors from ethnic minority groups have similar career destinations to those of UK trained white doctors

White men, but not white women, are substantially under-represented in the current intakes to UK medical schools

concerns, they will be about under-representation of ethnic minorities and women. The high representation of ethnic minorities, and specifically those of Asian origin, indicates high academic achievement by them. It probably indicates that many of the most able school pupils from these ethnic groups, and perhaps particularly women, choose medicine as a career. The reasons for the substantial under-representation of white men merit further study. With increasing immigration from continental Europe, the broad group of white ethnicity may need further subdivision in future.

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Awards) for making its database available for analysis, and its chair, Lady Elizabeth Vallance, and medical director, Sir Netar Mallick, for their support for this study. We thank UCAS for supplying and giving permission to publish data on accepted applicants to medicine. We are grateful to all the doctors who participated in the Medical Careers Research Group surveys. Karen Hollick administered the surveys, and Janet Justice and Alison Stockford entered the data.

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Ethical approval: UK Medical Careers Research Group surveys in the past have been overseen by an independent advisory group convened by the funding body. Ethical approval for the current programme of surveys has been obtained through the Central Office for Research Ethics Committees. Data from the Advisory Committee on Distinction Awards and from UCAS were provided by these bodies in their roles as the custodians of the respective databases.

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The fate and career destinations of doctors who qualified at Uganda's Makerere Medical School in 1984: retrospective cohort study

Yoswa M Dambisya

Editorial by
Ncayiyana

Pharmacy
Programme, School
of Health Sciences,
University of the
North, Private Bag
X1106, Sovenga
0727, Republic of
South Africa

Yoswa M Dambisya
senior professor

yoswad@unorth.ac.za

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Little information exists on the career paths and destinations of graduates of medical schools from developing countries,¹ in contrast with many such reports from the developed world.^{2,3} I present here perhaps the first report on career paths taken by graduates of Makerere Medical School in Uganda.

Participants, methods, and results

Twenty seven doctors who graduated from Makerere in 1984 participated in the study. A database was compiled from the graduation list. Information was obtained through a focus group discussion (three doctors), an email questionnaire (17, including the three focus group members), telephone interviews (six), and in-depth interviews (four).

Seventy seven doctors (58 men) graduated in 1984. Reliable information was obtained for 96% (74 (56 men), of whom 22 (19 men) are dead). Seven died between 1984 and 1989, six between 1990 and 1994, six between 1995 and 1999, and three since 2000. The presumed causes of death (death certificates were not available) were AIDS (11); suicide (six); road traffic injuries, hepatitis, and alcohol related disease (one each); and unknown (two). Five of the suicides were related to knowledge or fear of being HIV positive.

The table shows the country of residence, the form of employment and the nature of work for the 52 (37

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