

Equality and diversity in UK medical schools

October 2009

TEXTBOOK
OF
MEDICINE

TEXTBOOK
OF
MEDICINE

FOURTEENTH
EDITION

Equality and diversity in UK medical schools

October 2009

Editorial board

A publication from the BMA Science and Education department and the Equal Opportunities Committee

Chair, Equal Opportunities Committee	Professor Bhupinder Sandhu
Director of Professional Activities	Professor Vivienne Nathanson
Head of Science and Education & Project Lead	Nicky Jayesinghe
Deputy Head of Science and Education & Contributor	George Roycroft
Research and writing	Elizabeth Bohm Evelyn Simpson
Editorial secretariat	Thomas Ellinas Grace Foyle Luke Garland Darshna Gohil Rachael Panizzo

British Library Cataloguing-in-Publication Data.

A catalogue record for this book is available from the British Library.

ISBN: 978-1-905545-40-7

Cover photograph: Getty Images Creative.

© British Medical Association – 2009 all rights reserved. No part of this publication may be reproduced, stored in a retrievable system or transmitted in any form or by any other means that be electrical, mechanical, photocopying, recording or otherwise, without the prior permission in writing of the British Medical Association.

Equal Opportunities Committee

This report was prepared under the auspices of the Equal Opportunities Committee of the British Medical Association, whose membership for 2009/10 was as follows:

Professor Averil Mansfield	President, BMA
Dr Peter Bennie	Chair of the Representative Body, BMA
Dr Hamish Meldrum	Chair of Council
Dr David Pickersgill	Treasurer, BMA
Mr Tony Bourne	Chief Executive, BMA
Dr Kate Bullen	Deputy Chair of Council
Professor Bhupinder Sandhu	Chair, Equal Opportunities Committee
Dr Kailash Chand	
Dr Timothy Crocker-Buque	
Dr Melanie Davies	
Dr Gloria Esegbona	
Dr Scarlett McNally	
Dr Keith Brent (co-optee)	
Mr Paul Deemer (co-optee)	
Elizabeth Denny (co-optee)	
Dr Michelle Drage (co-optee)	
Mr Hilal Fareed (co-optee)	
Dr Umesh Prabhu (co-optee)	
Dr Minha Rajput-Ray (co-optee)	
Dr Rosalind Ramsay (co-optee)	
Dr Salim Razak (co-optee)	
Dr Justin Varney (co-optee)	
Mr Chris Darke (observer)	
Mr Danny Lambe (observer)	
Mr Kevin McFadden (observer)	
Mr Jonathan Waters (observer)	

Approval for publication as a BMA policy report was recommended by BMA Board of Professional Activities on 25 September 2009.

Acknowledgements

Acknowledgments

The association is grateful for the help provided by the BMA committees, outside experts and organisations. We would particularly like to thank:

Dr Pamela Garlick, Extended Medical Degree Programme Course Director, King's College London

Professor Chris McManus, Professor of Psychology and Medical Education, University College London

BMA Library for information and research support

Abbreviations

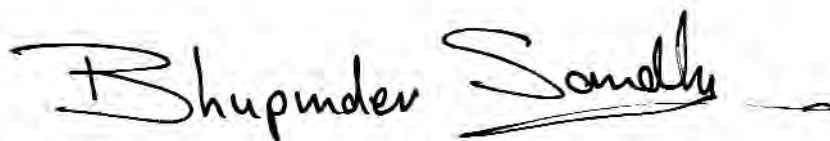
ARM	Annual representative meeting
BMAT	BioMedical Admissions Test
CHMS	Council of Heads of Medical Schools (now the Medical Schools Council)
DDA	Disability Discrimination Act
DED	Disability Equality Duty
DfES	Department for Education and Skills
DH	Department of Health
DIUS	Department for Innovation, Universities and Skills
EHRC	Equalities and Human Rights Commission
EOC	Equal Opportunities Committee
EWTD	European Working Time Directive
GAMSAT	Graduate Medical Schools Admissions Test
GLADD	Gay and Lesbian Association for Doctors and Dentists
GMC	General Medical Council
GP	General Practitioner
HEFCE	Higher Education Funding Council for England
HEI	Higher education institution
HESA	Higher Education Statistics Agency
LGB	Lesbian, gay or bisexual
MRCGP	Membership of the Royal Colleges of Physicians Examination
MSC	Medical Students Committee
NS-SEC	National Statistics Socio-economic Classification
OFFA	Office for Fair Access
OSCE	Objective Structured Clinical Examination
PQA	Post-qualification applications
QAA	Quality Assurance Agency for Higher Education
SPA	Supporting Professionalism in Admissions Programme
SpR	Specialty registrar
UCAS	Universities and Colleges Admissions Service
UCCA	Universities Central Council on Admissions
UK	United Kingdom
UKCAT	United Kingdom Clinical Aptitude Test
USA	United States of America

Foreword

In recent decades, the student composition of medical schools has changed with regards to the age, ethnicity and gender of students. Many of these changes have made a positive contribution to the medical profession and have gone some way to increasing the extent to which the profession reflects wider society. The demography of medical schools remains an enormously important topic of discussion. This report updates *The demography of medical schools* discussion paper which was published in 2004 under the auspices of the BMA Board of Medical Education. It examines issues faced by medical school applicants and students in relation to the following areas: socio-economic background, age, ethnicity, gender, sexual orientation, trans issues, disability and religion or belief. The report also examines admission policies and procedures.

As the 2009 report from the Panel on Fair Access to the professions recently highlighted, access to a professional career in the UK has become more and more inflexible over time.¹ Despite demographic changes in medical schools, the majority of medical school students are still drawn from professional and managerial backgrounds. The age, ethnicity and gender profile of medical school students continues to raise important questions, both about the structure of medical education and about the future composition of the profession.

This report is intended to outline the current demography of medical schools, to highlight important questions for discussion and to identify areas which would benefit from further research. It is hoped that it will be informative and form a basis for debate and future policy decisions. The BMA Equal Opportunities Committee is committed to promoting equality and diversity for the medical workforce, including a strong focus at the medical school level. The committee advises the BMA on matters relating to equality of opportunity within medical education.

A handwritten signature in black ink that reads "Bhupinder Sandhu". The signature is written in a cursive style with a long horizontal flourish at the end.

Professor Bhupinder Sandhu
Chair, Equal Opportunities Committee

Contents

Section summaries	1
Section 1: Introduction	6
Supporting equality of opportunity in medical school admissions and medical education	6
Equality and diversity issues in medical admissions and medical education	7
Structure and content of this report	10
Section 2: Socio-economic background	11
The quality of data on socio-economic background	11
The social composition of medical schools	12
Examining the policy context: widening participation in higher education	17
Why is medicine dominated by students from higher socio-economic grades?	18
Medical school initiatives to widen participation	20
The impact of graduate medical programmes on socio-economic diversity	24
The costs of studying medicine	24
Summary	28
Questions for discussion	28
Section 3: Age	30
Applications and acceptances to medical school by age	30
Access courses	33
New medical schools	34
Graduate entry to medical school	34
Implications of graduate entry and an increasing proportion of mature students	35
The impact of age discrimination legislation	38
Summary	40
Questions for discussion	40
Section 4: Ethnicity	42
Application and acceptance to medical school by ethnicity	42
Does the ethnicity of medical students matter?	47
Acceptance rates to medical school by ethnic origin	48
Ethnicity, educational attainment and aspirations	49
Ethnicity and social class	52
Disadvantage in selection and discrimination	54
Ensuring equality of opportunity	56
Performance at medical school	58
Summary	59
Questions for discussion	59

Section 5: Gender	61
The changing gender profile of medical schools	61
Understanding the changing gender ratio in UK medical schools	63
Gender and the experience of medical school	66
Implications of the gender ratio of medical students for the medical workforce	67
Gender representation across the medical specialties	69
Summary	71
Questions for discussion	71
Section 6: Disability	72
Defining disability	72
Disability and the UK medical profession	72
Disability equality legislation	73
Disabled students in applications and acceptances to UK medical schools	74
Disability equality in admissions to medical school	76
Disability equality in medical education	77
Summary	79
Questions for discussion	79
Section 7: Sexual orientation and trans issues	80
Sexual orientation and the medical workplace	80
Lesbian gay and bisexual students in medical education	82
Trans medical students	84
Summary	87
Questions for discussion	87
Section 8: Religion and belief	88
Students with a religion or belief in medical schools	88
Diversity and medical education	90
Summary	91
Questions for discussion	91
Section 9: Admissions policy and procedures	93
Selection for medical school	93
Academic record	95
Intellectual aptitude and psychometric testing	98
School and referee reports	100
Self reports	100
Personal interview	101
Structured tasks and observed group activity	102
Summary	103
Questions for discussion	103

Appendix 1	104
Number and percentage of applicants and accepted applicants to medical school by socio-economic group 2003-08	
Appendix 2	105
Number and percentage of UK applicants and accepted applicants to medical school by age 2003-08	
Appendix 3	106
Number and percentage of UK applicants and accepted applicants to medical school by ethnic origin 2003-08	
Appendix 4	107
Number and percentage of UK applicants and accepted applicants and acceptance rate by gender 2003-08	
References	108

Tables and figures

Figure 1	UK applicants to medical school by socio-economic group 2003-08	14
Figure 2	UK accepted applicants to medical school by socio-economic group 2003-08	14
Figure 3	UK acceptance rate by socio-economic group 2003-08	16
Figure 4	UK applicants to medical school by age group 1996-2008	31
Figure 5	UK accepted applicants to medical school by age group 1996-2008	31
Figure 6	UK acceptance rates to medical school by age group 1996-2008	33
Figure 7	UK applicants to medical school by ethnic origin 2003-08	44
Figure 8	UK accepted applicants to medical school by ethnic origin 2003-08	44
Figure 9	UK acceptance rates to medical school by ethnic origin 2003-08	46
Figure 10	Percentage of pupils achieving five or more A*-C grades at GCSE or equivalent by gender and ethnic group in England 2008	51
Figure 11	UK accepted applicants to medical school by ethnic origin and socio-economic group 2003	53
Figure 12	UK accepted applicants to medical school by ethnic origin and socio-economic group 2008	53
Figure 13	UK applicants and accepted applicants to medical school by gender 2003-08	62
Figure 14	UK acceptance rates to medical school by gender 2003-08	62
Table 1	Percentage of UK applicants and accepted applicants to medical school by socio-economic group 2003-08	13
Table 2	Acceptance rates of UK applicants to medical school by socio-economic group 2003-08	15
Table 3	Percentage of UK applicants and accepted applicants to medical school by age 1996-2008	30
Table 4	Acceptance rate to medical school by age 1996-2008	32
Table 5	Percentage of UK applicants and accepted applicants to medical school by ethnic origin 2003-08	43
Table 6	Acceptance rates of UK applicants to medical school by ethnic origin 2003-08	46
Table 7	Percentage of pupils achieving five or more A* to C grades at GCSE by gender and ethnicity	50
Table 8	Percentage of applicants and accepted applicants to all medical schools by gender and acceptance rates by gender 2003-08	61
Table 9	The four fundamental duties of medical schools to disabled people	74
Table 10	UK applicants and accepted applicants to medical school by disability 2003-07	75

Section summaries

Below are the summaries and questions for discussion for each diversity section.

Socio-economic background – summary

The socio-economic status of students at medical schools in the UK has changed very little over time. The majority of students still come from professional and managerial backgrounds. This reflects the situation across the professions in the UK as highlighted in the 2009 report from the Panel on Fair Access to the Professions. An important factor in the under-representation of other socio-economic groups seems to be their low rates of application – a phenomenon that is likely to be due to a complex combination of factors – and a consistently lower acceptance rate. Financial considerations may be one important barrier to a wider social mix of medical school applicants and this means that the heavy burden of debt experienced by most medical students is an increasingly serious issue. Initiatives to raise aspirations and to support applicants are likely to be important in widening access to medical school.

Socio-economic background – questions for discussion

- How can the key reasons behind the low application and acceptance rates to medical school from lower socio-economic groups be identified?
- How can medical schools ensure that they are getting the best candidates from the broadest socio-economic groups?
- What are the options for widening access to medical school?
- How can the effect of top-up tuition fees on the demography of medicine be monitored?
- What is the effect of students' increasing need to manage debt by seeking part-time employment during term time?
- How could the current bursary system be improved to support widening participation initiatives?
- Does the content of applications from students of different economic groups differ in style or substance?
- What impact does graduate entry have on widening participation?
- Would lowering the minimum academic criteria required for entry to medical school increase the number of applications received from students from lower socio-economic groups? Would this have any impact on the number of students successfully graduating from medical school?
- What effect does the absence of tuition fees for Scottish students studying at Scottish medical schools have on applications to medical schools? Does reducing the overall cost by removing tuition fees help encourage Scottish students from lower socio-economic groups?

Age – summary

A higher proportion of applicants under the age of 21 receive acceptances compared to other age groups; mature applicants sometimes appear to be at a disadvantage. At the same time, the past decade has seen a definite shift in the age pattern of medical students, so that about one in five students accepted into medical degrees is now aged 21 or over. This suggests that medical schools may be adopting a more favourable attitude towards older applicants. This changing demography of medical schools may be due partly to the effect of graduate-entry

programmes, new medical schools and access courses, all of which have helped to reduce barriers to medical school faced by older students. There are several perceived advantages of admitting mature students to medical school, such as a better developed communications skills and capacity to deal with others. There is little conclusive research, however, on the differences in outcome between older and more traditional students. Mature and graduate students still face problems in entering medicine, including financial barriers.

Age – questions for discussion

- Why is the acceptance rate of applicants aged under 21 higher than in any other age group?
- What is the optimal age range for entry to medical school?
- Should the UK increase the number of graduate-entry students?
- Why are all medical schools not offering graduate entry and widening access courses?

Ethnicity – summary

Medicine attracts a higher proportion of ethnic minority students when compared to the general university population. This proportion seems to have remained relatively stable in recent years. There are large differences in the acceptance rates among the different ethnic groups. This could be due to factors including educational differences, social class and direct or indirect discrimination. In the case of ethnicity it appears to be especially important that medical schools' selection and assessment processes are evaluated and made as transparent, fair and objective as possible. It is also crucial to ensure that discrimination does not reduce the chances of success at medical school for ethnic minority students.

Ethnicity – questions for discussion

- What are the best ways of raising expectations among pupils from under-represented minority ethnic groups to encourage them to apply for medical school?
- How can the ethnicity of medical school applicants and acceptances be monitored most robustly?
- What are the most important steps that should be taken to ensure equality of opportunity in medical schools?
- Why do some minority ethnic groups (eg Black-African) have a significantly lower acceptance rate compared to applicants from other ethnic origins?

Gender – summary

The number of female applicants and acceptances to medical schools has increased over time. From 2004 the trend of an increasing proportion of women applying to medical school seems to have stabilised. Although female students accepted to medical school are still in the majority (56% in 2008), there has been a slight reduction in the proportion of women accepted since 2004. Long-term social trends have contributed to the strong representation of women in UK medical schools. Other factors influencing this changing gender profile may include curricula and examination changes in schools and medical education, and the

changing nature of medical careers. Changing attitudes towards medical careers among men have not yet been adequately explored but this too may be a factor in the increasing proportion of female medical students. In terms of the experience of medical education it seems that both men and women may experience discrimination on account of their gender. Particularly important is the slight underachievement of male students in medical examinations, and the suggestion that students experience a 'hidden curriculum', which perpetuates gender stereotypes associated with certain medical career paths. The role of gender in medical education remains an important topic for future research. Recent years have seen concern about the implications of a higher proportion of women joining the medical workforce. There is a need to ensure that academia and all specialties address flexible training and childcare provision so that they attract the most talented students and doctors.

Gender – questions for discussion

- What are the main reasons for the consistently higher proportion of women applicants and medical students and lower proportion of male applicants and medical students?
- How can more students be attracted to apply to medical school from hard-to-reach demographic groups such as White and Black Caribbean young men?
- What are the future workforce and health policy implications of the increasing proportion of women medical students?
- What can be done to remove the barriers to women's career progression across all specialties and in academic medicine?
- How can we address the under-representation of women in leadership roles?
- How can the NHS be more family-friendly so that men and women can combine their career with looking after their children or dependent relatives?
- How can doctors who want to take a career break be facilitated to return back to the workforce?

Disability – summary

Medicine seems to attract a lower proportion of disabled students than that found in the general university population, although this may partly be due to the particular reluctance of applicants to disclose information on impairments. Traditionally medical schools were unwilling to accept disabled students and disabled medical students and doctors faced considerable attitudinal barriers from colleagues and patients. There has been some improvement since the mid 1990s, as legal and cultural shifts have led to a more positive view of disabled students and doctors. Although not every disabled student will meet the General Medical Council's (GMC) fitness to practice guidelines for medical students, medical schools now have a duty to encourage disabled people to apply. Medical schools must ensure that the course information they provide supports this duty. It is also important to ensure that application processes do not present unnecessary barriers to disabled applicants. Medical schools must also ensure that reasonable adjustments are made so that the needs of disabled students who are accepted into medical school are met.

Disability – questions for discussion

- What are the best ways to ensure there are no unnecessary barriers for disabled medical students?
- What is the best way to assess the under-reporting of impairments and the barriers to reporting?
- Should there be guidance on how specific impairments may affect an individual's ability to study and practise medicine?
- How can medicine be better promoted as a potential career for disabled people?

Sexual orientation and trans issues – summary

Research indicates that lesbian, gay or bisexual (LGB) students and trans medical students experience discrimination and harassment, from patients and from colleagues. There is a need for both LGB and trans students to be able to access strong pastoral support, especially those who choose to 'come out' or 'transition' at medical school. Encouraging LGB and trans role models and incorporating LGB and trans health issues throughout the medical education curricula are likely to be of particular benefit to LGB and trans medical students, as well as future patients and doctors. The lack of data on LGB and trans medical students needs to be addressed so that their experiences in medical school can be monitored, especially incidences of bullying or harassment. Medical schools should ensure that policies that condemn discrimination are published and frequently distributed.

Sexual orientation and trans issues – questions for discussion

- What would be the best way to support LGB and trans medical students?
- How can medical schools promote understanding of LGB and trans needs?
- What are the most important steps that should be taken to reduce discrimination within medical schools?

Religion and belief – summary

It is important that medical schools are aware of the needs of students with a religion or belief, and that appropriate provision for these students is made. In particular, pastoral care systems and policies on religion and belief should be well publicised. Where students wish to wear religious dress, ease of communication with patients should be a priority. This is unlikely to be impeded by the most commonly worn forms of religious dress in the UK.

Religion and belief – questions for discussion

- What are the best ways to ensure that patients are not disadvantaged by doctors' religions or beliefs?
- How can we improve teaching on religion and belief at all stages of medical education so that students and doctors are best prepared to look after patients from a diverse population?
- Would data collection on religion and belief improve the experience of students and patients?

Admissions policy and procedures – summary

The medical school selection process plays a vital role in determining the composition of the medical profession. The task of selecting students from a pool of well-qualified applicants is complex and demanding. There is evidence that certain groups of students seem to face disadvantage in selection to medical school. As a result, this has raised concern about the fairness of selection procedures and placed a stronger emphasis on the need for transparency and equal opportunity in the admissions process. In 2004, the Schwartz report recommended that merit should be the basis for entry to higher education, but that admissions procedures should also include a more holistic assessment of candidates' potential. There are many types of instruments used to select students for medical school; these may include academic record, school report, referees' reports, self reports, cognitive or intellectual aptitude tests, psychometric tests, structured tasks, organised group activity and interviews. There is considerable uncertainty about the weight given to these different aspects of the admissions process.

Admissions policy and procedures – questions for discussion

- What are the most effective instruments for selecting medical students?
- What steps, if any, should be taken to make selection as fair as possible?

Section 1: Introduction

Supporting equality of opportunity in medical school admissions and medical education

Medicine has long been one of the most popular, fulfilling and prestigious career choices in the United Kingdom (UK). It is essential that there is equality of opportunity to enter this rewarding career path and that the process of admission is transparent. The process of medical education should also allow students from all backgrounds an equitable chance to succeed as medical students and as doctors. This report aims to give a concise, accessible account of the major issues surrounding equality of access to medical school. It provides medical academics, policymakers, and current and prospective students with relevant statistics and with a focused discussion of the major barriers facing particular groups. The report highlights issues relevant to socio-economic background, age, ethnicity, gender, disability, sexual orientation, trans issues and religion or belief. For those wishing to work towards widening participation in medicine for all these groups, whether at a national, local or university level, this report will be a source of information and data that can be used to make the case for improvement.

This report addresses a resolution from the 2008 BMA's annual representative meeting (ARM) that the Association:

- (i) review the new medical school entry examination (UK Clinical Admissions Test (UKCAT)) with a view to effectiveness and the implications of the cost to candidates
- (ii) investigate the causes of any under-representation of minority ethnic groups and those from poorer socio-economic groups within medical schools
- (iii) lobby relevant bodies to acknowledge and address discrepancies in the representation of ethnic and socio-economic groups in medical schools.

This 2008 policy reflects a longstanding BMA commitment to equality and diversity in medical education. Several publications have demonstrated this commitment. In 2004, for example, the Board of Medical Education produced its report, *The demography of medical schools: a discussion paper*, which gave an in-depth account of the academic research into barriers facing students seeking entry to medical school.² The BMA Equal Opportunities Committee's (EOC) 2004 report, *Career barriers in medicine: doctors' experiences*, highlighted key barriers facing ethnic minority doctors, women doctors, disabled doctors, and lesbian, gay, and bisexual (LGB) or trans doctors. This report suggested that focusing on equality and diversity at the medical school level would have a profound effect in improving the situation for the profession as a whole.³ In 2008, the EOC and the BMA Medical Education Sub-Committee produced a web resource that identified a number of areas for action in the provision of equality and diversity education to medical students. These include that:

- explicit standards should be set by regulating bodies for equality and diversity in medical education and assessments developed in order to monitor their effectiveness
- all those involved in undergraduate and postgraduate medical education seek guidance from, and work with, the Equality and Human Rights Commission (EHRC) in developing equality and diversity education

- equality and diversity education should enable trainee doctors to develop and demonstrate diversity competence in tandem with their clinical knowledge and skills
- doctors should be required to demonstrate competence in equality and diversity throughout their medical career, and this should be addressed as part of assessment and appraisal.⁴

The EOC's terms of reference, shown below, emphasise its commitment to equality and diversity for the medical workforce, and this includes a strong focus at the medical school level. The EOC works in liaison with the BMA Medical Students Committee (MSC) to ensure that doctors in training are treated equitably. It should be noted that following revisions to legislation in recent years, equality and diversity responsibilities are increasingly a legal, as well as an ethical, responsibility. The EOC's report, *Valuing diversity, enabling equality: implementing the BMA's equal opportunities policy* (updated in 2008), is a valuable resource in understanding the new responsibilities faced by most public bodies, including universities.⁵

EOC terms of reference

- To promote equal opportunities for the medical workforce, and breaking down barriers to career progression, including by research and lobbying.
- To provide appropriate expert advice and guidance on equal opportunities issues for the medical profession in the NHS workplace and doctors in training.
- To monitor and review the equal opportunities issues being raised by the membership with the Association's local offices but not to be involved in advising on individual casework.
- To monitor and review relevant legislation and case law relating to equal opportunities that may impact on the medical profession.

Equality and diversity issues in medical school admissions and medical education

The average UK medical school is now likely to contain a far more diverse range of students than has been the case in the past, as the profile of UK medical students has changed rapidly in recent decades. In the mid-20th century most medical school students were male school-leavers from White, middle-class backgrounds. In the early 1960s, for example, fewer than one in three medical students were female and almost 80 per cent came from professional and 'intermediate' backgrounds (social classes I, II and III – see page 11).⁶ In comparison, in 2008:

- 56 per cent of all entrants to medical school (UK domiciled students) were women
- over a quarter (28%) of UK domiciled students offered a place at medical school were from ethnic minority backgrounds. There was significant variation in the application and acceptance rates between ethnic groups. Students from Asian backgrounds made up over two-thirds (69%) of all accepted ethnic minority students
- 31 per cent of those accepted to medical school were over 20 years old.

Since the 1970s, the UK medical student body has become increasingly diverse when it comes to gender, ethnicity and age, but less so in regard to socio-economic background. In 2008, medical schools still remained dominated by those from the higher socio-economic groups:

- 71 per cent of students accepted into medical school came from the top three socio-economic classes, while 15 per cent were from the lower four classes (the remaining students did not answer the question on socio-economic status)
- 38 per cent of students accepted into medical school were from socio-economic class I, indicating higher managerial and professional backgrounds
- 2 per cent of accepted students came from socio-economic class VII, indicating routine manual occupational backgrounds.¹⁷

Widening participation in higher education for all sections of society is now a central policy aim for the UK Governments. In England, for example, the strategies and rationale for achieving this have been set out in a series of publications including *Higher education in the 21st century* (1998),⁷ *The future of higher education* (2003),⁸ *Widening participation in higher education* (2003)⁹ and *Medical schools: delivering the doctors of the future* (2004).¹⁰ In 2004 the Department for Education and Skills (DfES) published its report on admissions to higher education, *Fair admissions to higher education: recommendations for good practice*. The report made recommendations for a fairer, more transparent and more accessible system of admission into higher education. It suggested that merit should remain the key criterion for entrance into higher education, but that merit could be defined more fairly, so as to extend access to candidates with high potential but without strong educational or familial support.¹¹

Debate about fair access to medical education and initiatives to promote it continue to feature in the higher education landscape. In early 2009, for example, the UK Government appointed a panel of experts and representatives of the professions (including medicine) to examine the best ways to increase social mobility into the professions.¹² The panel published a report of their findings in July 2009, which highlighted that members of the professions, particularly medicine and law, grew up in families with an income well above the average and that the professions need to take the lead so that 'opportunities become available to more people more of the time'.¹

The BMA supports efforts to attract medical students from a broader range of social backgrounds. For too long, various groups of individuals in society have been denied equality of opportunity in attending university or studying medicine. In some cases this has been caused by differences in prior educational opportunity or lack of exposure to the possibility of becoming a doctor. At other times this lack of opportunity has been perpetuated by bias and discrimination during the application and selection process.

Several different arguments have been made for increasing the diversity of the medical profession. There is a widely held belief, shared by the BMA, that doctors should be as representative as possible of the society they serve in order to provide the best possible care to the UK population.² An alternative argument for widening access can be made based on the case for ensuring that those who become doctors are the best suited to a career in medicine.

In September 2009, the General Medical Council (GMC) published a revised version of *Tomorrow's Doctors (2003)* setting out standards for undergraduate medical education in the UK. The revised version has a greater emphasis on equality and diversity than previous versions,¹³ in particular stating that medical schools 'will have policies which are aimed at ensuring that all applicants and students are treated fairly and have equality of opportunity, regardless of their diverse backgrounds and needs'. It also states that 'data relating to equality and diversity issues will be routinely collected and analysed to ensure that policies are being implemented and any concerns are identified'.¹⁴ There is likely to be a greater onus on medical schools to demonstrate that action is being taken to address equality and diversity and that they are fulfilling their legal duty.

Efforts to widen access, face some major barriers. Access to education in medicine is both increasingly competitive and expensive, which complicates medical schools' responsibility to promote equality of opportunity. In 2008, the ratio of accepted students to applicants was 1 to 2.1. Since the implementation of variable top-up fees in 2006, medical students have faced high levels of debt.¹⁵ In this context, it is imperative that policymakers and medical schools work to ensure that entrance to medical school does not become even more exclusive.

While the body of research into gender, age, social class and ethnicity in medical schools continues to grow, there is a clear need for more research. Papers on age and on the comparative success of graduate and school-leaver entrants to medical schools are rare and in examining these topics it is often necessary to rely on research conducted internationally. It is also imperative that valid and reliable data on the representation of different demographic groups in medical schools be collected. This report is based substantially on data from the Universities and Colleges Admissions Service (UCAS), which processes applications to higher education in the UK. Collecting usable data on socio-economic background is becoming an increasingly difficult challenge for UCAS. In 2008, the socio-economic status of nearly one in five applicants (17%) was unrecorded. This is thought to be partly due to the perception among applicants of positive discrimination in favour of disadvantaged students, leading to a general reluctance to answer this question.¹⁶ Aside from the issue of refusals to answer, UCAS's measurement of socio-economic status through a question on parental occupation is seen as increasingly problematic. The rising numbers of graduate students are difficult to classify on the basis of parental occupation, and modern occupations tend to defy easy categorisation.¹⁷ The goal of increasing the diversity of medical students requires that UCAS and medical schools conduct research into the best way of measuring socio-economic status, and collecting data on disability, sexual orientation and religion and belief so that the efficacy of widening participation programmes can be properly evaluated.

Structure and content of this report

This report addresses each of the key aspects of equality and diversity in UK medical schools, with sections on socio-economic background, age, ethnicity, gender, disability, sexual orientation and trans issues, and religion and belief. In addition, the report also has a section focusing on medical schools' admissions policies and procedures. Each section draws on the available data and academic research to highlight the current state of affairs in medical schools. It should be noted that each section is structured differently. This reflects the fact that each aspect of diversity raises very different issues, as well as the variation in the data available.

Discussion questions are provided at the end of each section to focus debate and identify areas for further research on the key issues. These questions have been formulated in consultation with a wide range of BMA committee members and expert reviewers who have contributed to the writing of this report.

The majority of the data provided in the report is drawn from the UCAS website's Statistical Services.¹⁷ It is important to note that UCAS data are based on applications and accepted applications, rather than on admissions. Acceptances are not the same as admissions, as universities make offers to students roughly based on the number of places available, but do not have control over how many of these students achieve the required grades for entry. The UCAS data used in the report are expressed in percentages. For detailed information please see the appendices which contain the raw data.

The report has also encompassed a wide literature search using Medline, PubMed and the *British Medical Journal* and *Student BMJ*. In addition, it includes short opinion pieces and original case studies from current BMA student members and lecturers, which provide an insider's perspective.

Section 2: Socio-economic background

This section discusses and presents data on the social class and socio-economic background of UK medical students.

The quality of data on socio-economic background

The main source of data for this section is UCAS, the organisation that processes applications to higher education institutions (HEIs) in the UK. In order to measure the representation of different social classes in the higher education sector, UCAS routinely collects data on socio-economic status. Since 2002, UCAS has used a version of the Standard Occupational Classification 2000 as its tool for measuring socio-economic status.¹⁷ The data prior to 2002 is not comparable to that after 2002. This section chiefly presents data on admissions from 2003 to 2008. Under the new UCAS system, socio-economic status is based on an applicant's parental occupation or the occupation of the person contributing the highest income to the household if the applicant is aged 21 years or over.

UCAS classification of socio-economic status

I	Higher managerial and professional occupations
II	Lower managerial and professional occupations
III	Intermediate occupations
IV	Small employers and own account workers
V	Lower supervisory and technical occupations
VI	Semi-routine occupations
VII	Routine occupations
VIII	Not classified – unknown

Source: UCAS 2009

The validity and reliability of the socio-economic status data recorded by UCAS is questionable. The classification relies on students providing a description of their parents' occupation, which is brief and open to subjective interpretation. It has been pointed out that answers such as 'manager' are ambiguous, with no indication as to whether the person involved manages a small retail venture or a large company.¹⁸ Relying on parental occupation alone excludes the variables of income and level of organisational responsibility, which systems such as the commonly used National Statistics Socio-economic Classification (NS-SEC) incorporate to produce a more accurate picture of socio-economic status.

The UCAS figures discussed in this section suggest a slight fall in the representation of the top three socio-economic groups from 74 per cent of accepted applicants in 2003 to 71 per cent in 2008. This has been countered by a slight increase in the bottom four socio-economic groups.¹⁷ It is not clear whether this is a long-term trend. In 2003, the socio-economic status of 13 per cent of accepted applicants to medicine was unknown; by 2006 this had risen to 17 per cent and in 2008 it was back to 13 per cent.

Given the high relevance of socio-economic status to political initiatives on widening participation in tertiary education, problems with the collection of data are of increasing relevance. It is thought that the reluctance of applicants to provide information about parental occupation to UCAS has partly arisen from a perception of positive discrimination in favour of disadvantaged students.¹⁶ This clearly needs to be addressed, for example through improved communications or by making the socio-economic status question on applications compulsory.

Aside from the issue of refusal to answer, the measurement of socio-economic status is increasingly problematic. Graduates, for example, who make up an increasing proportion of entrants to medical school, are asked to record their own occupation or that of their partner, rather than parental occupation. Those with temporary, low-paid jobs pursued while waiting for university entrance results may thus be counted as coming from a lower social class than might be accurate. Modern-day occupations are less likely to fit into a simple classification system of the type used by UCAS. Alternative measurements, such as evaluating socio-economic status by postcode, face similar problems, such as the high concentration of student accommodation in deprived inner-city areas, and the higher likelihood of Black and Asian applicants with parents in professional occupations living in deprived areas.¹⁶ The widely acknowledged importance of increasing the diversity of medical students urgently requires that UCAS and medical schools conduct research into the best way of measuring socio-economic status, so that the efficacy of widening participation programmes can be properly evaluated.

These qualifications should be borne in mind when using the analysis in this section. In the absence of better data, however, UCAS records are still able to provide a useful overview of the socio-economic composition of the medical student body.

The social composition of medical schools

It was recently asserted in the *British Medical Journal* that medicine has 'remained in the grip of the middle class',¹⁹ and analysis of UCAS data over the decades confirms this assertion. Research into medical school admissions between 1956 and 2001 shows 'little systematic change in social class of UK medical students over half a century', with minimal variation in the dominance of those from professional or managerial occupational backgrounds or in the under-representation of those from partly skilled or unskilled backgrounds.¹⁸

Medical school admissions and acceptances in the UK continue to be dominated by those from higher socio-economic backgrounds. Between 2003 and 2008, the top three socio-economic classes represented between 71 and 74 per cent of accepted applicants to medical school, but only between about 52 and 55 per cent of the UK working population. In contrast, lower socio-economic classes have represented between 14 and 15 per cent of accepted applicants to medical school, compared to between about 44 and 45 per cent of the UK working population.^{17, 20} Please note that comparisons against the UK working population are given for general context, but should not be relied upon as closely comparable to the UCAS figures, given that the data from the Office of National Statistics' Labour Force Survey uses a different classification system to that of UCAS.

Table 1 and **figures 1** and **2** show a detailed breakdown of applications and acceptances to medical school by socio-economic status between 2003 and 2008. It is clear from **figures 1** and **2** that the higher socio-economic classes (in particular the top two socio-economic groups) dominate medical applications, a dominance that is even more pronounced when it comes to acceptances.

Table 1 – Percentage of UK applicants and accepted applicants to medical school by socio-economic group 2003-08

Socio-economic group	Year					
	2003	2004	2005	2006	2007	2008
Higher managerial and professional occupations						
Applicants	34.9	33.8	31.0	32.0	31.1	31.2
Accepted applicants	39.2	40.0	36.8	38.3	38.2	37.6
Lower managerial and professional occupations						
Applicants	25.4	25.4	24.0	22.5	22.6	23.8
Accepted applicants	25.5	25.5	24.1	22.9	23.2	23.4
Intermediate occupations						
Applicants	9.3	9.6	9.1	9.2	9.2	10.2
Accepted applicants	9.2	9.6	9.4	9.6	8.9	10.3
Small employers and own account workers						
Applicants	3.8	3.8	3.5	3.3	3.6	3.7
Accepted applicants	4.2	3.8	3.8	3.3	3.7	3.2
Lower supervisory and technical occupations						
Applicants	2.0	2.2	1.7	1.6	1.9	1.9
Accepted applicants	2.1	2.1	1.6	1.6	1.8	1.9
Semi-routine occupations						
Applicants	5.7	7.0	7.3	7.0	8.3	9.5
Accepted applicants	5.4	6.2	6.3	6.1	6.6	8.3
Routine occupations						
Applicants	2.0	2.0	1.7	1.9	1.9	2.4
Accepted applicants	1.9	1.5	1.5	1.5	1.6	1.9
Unknown						
Applicants	16.8	16.2	21.7	22.4	21.5	17.2
Accepted applicants	12.6	11.2	16.5	16.7	16.0	13.4

Source: UCAS 2009

Figure 1 – UK applicants to medical school by socio-economic group 2003-08

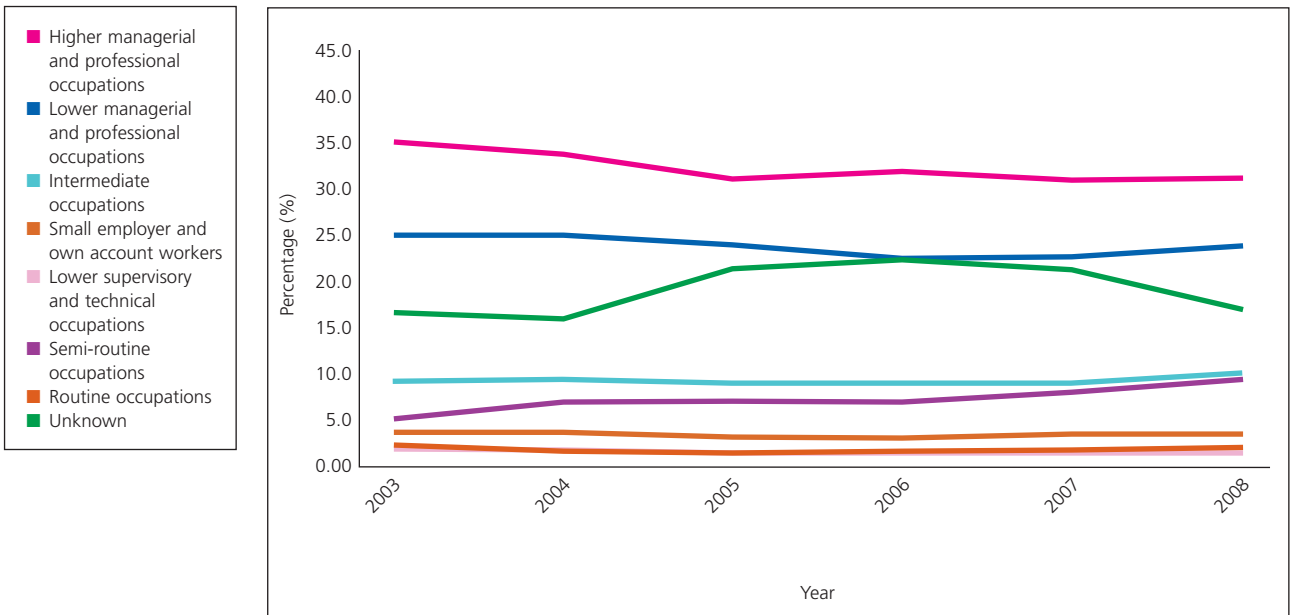


Figure 2 – UK accepted applicants to medical school by socio-economic group 2003-08

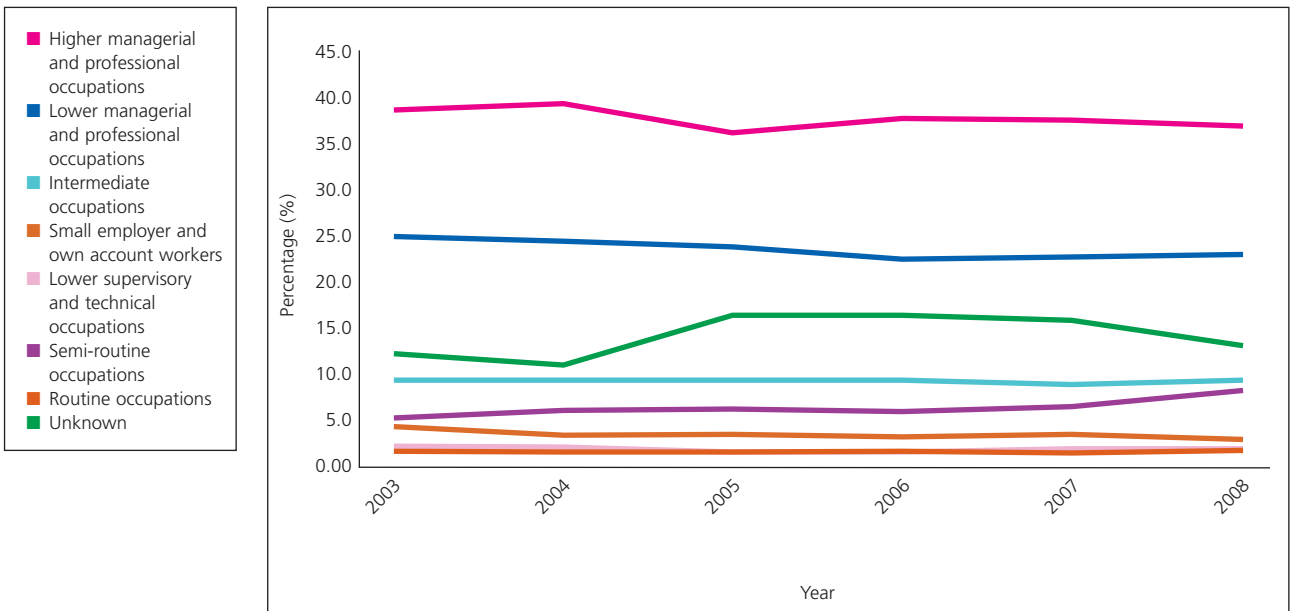
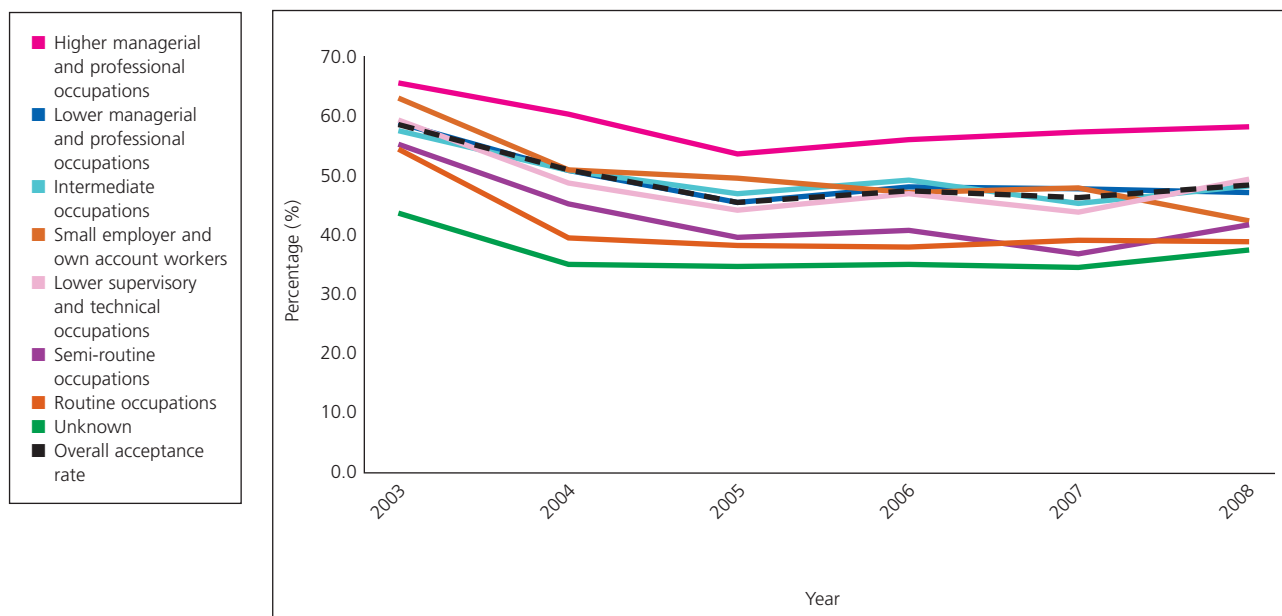


Table 2 and **figure 3** show the acceptance rate (ie acceptances as a percentage of applications) by socio-economic status. In 2008, applicants from class I achieved an acceptance rate of 58 per cent. In contrast, students in class VII, routine occupations, had an acceptance rate of only 39 per cent. As can be seen in **figure 3** the class I trend line is significantly above the overall acceptance rate and classes VI and VII (semi-routine and routine occupations) and unknowns fall significantly below.

Table 2 – Acceptance rates of UK applicants to medical school by socio-economic group 2003-08

Socio-economic group	Acceptance rates (%)					
	2003	2004	2005	2006	2007	2008
I. Higher managerial and professional occupations	65	60	54	56	57	58
II. Lower managerial and professional occupations	58	51	46	48	48	47
III. Intermediate occupations	58	51	47	49	45	48
IV. Small employers and own account workers	63	50	49	47	48	42
V. Lower supervisory and technical occupations	59	49	44	47	44	49
VI. Semi-routine occupations	55	45	40	41	37	42
VII. Routine occupations	54	39	38	38	39	39
Unknown	44	35	35	35	35	37
Overall acceptance rates	58	51	45	47	46	48

Source: UCAS 2009

Figure 3 – UK acceptance rate by socio-economic group 2003-08

Between 2003 and 2008 there was a rise of 24 per cent in applications to medical school, but a rise of only 3 per cent in accepted applications. This continues a trend observed since the start of the current decade of high growth in applications to medical schools.²¹ As a result, acceptance rates have fallen across all demographics, particularly in classes VI and VII, semi-routine and routine occupations. The higher socio-economic classes continue to maintain higher acceptance rates than the lower classes, especially in class I, higher managerial and professional occupations.

The over-representation of socio-economic classes I and II is particularly pronounced in medical school admissions acceptances when compared to the data on all degrees administered by UCAS. In 2008:

- the proportion of acceptances to medical school coming from socio-economic class I (31%) was almost twice that of acceptances to all other degrees from class I (16%)
- just 15 per cent of students accepted into medical school came from the four lower socio-economic classes (grades IV-VII), compared to 24 per cent of students accepted to all degrees.¹⁷

Examining the policy context: widening participation in higher education

Political attention in recent years has focused strongly on increasing participation in higher education, particularly among students from the lower socio-economic grades. This is a commitment that has been supported by the BMA.

In 2004, a public service agreement target of achieving 50 per cent overall participation in higher education for those between the ages of 18 and 30 was set, with an accompanying commitment to widening participation.²² In 2007 another public service agreement was set to 'narrow the gap in educational achievement between children from low income and disadvantaged backgrounds and their peers'.²³

In trying to achieve these policy aims, the Government has invested significant funds in its Widening Participation initiative. In 2005 to 2006, for example, £386m was invested, both through the Aimhigher^a programme to raise student aspirations and into HEIs directly.²⁴ The Department of Health (DH), the Department for Innovation, Universities and Skills^b (DIUS) and the Higher Education Funding Council for England (HEFCE) are jointly funding a targeted healthcare strand of the Aimhigher programme, designed to address access and diversity issues in the healthcare professions.²⁵ Initiatives funded under this programme include, for example, the Royal College of Surgeons' surgical taster scheme, which allows sixth form students in the East End of London and in Essex to gain insight into a surgical work environment. This scheme allows the students to make more informed career choices, and is also highly useful in that it builds the work experience component of their application to medical school.²⁶

The Higher Education Act 2004 also made the charging of variable 'top-up fees' to students of up to £3,000 per year contingent on HEIs making a fair access agreement with the Office for Fair Access (OFFA). In 2006 to 2007, OFFA made access agreements with 124 HEIs, with institutions using some of this additional income to provide bursaries for disadvantaged students and in most cases also to run outreach programmes.²⁴ The DIUS also ran an initiative entitled Gateway to the Professions between 2004 and 2008. The BMA supported this project, which allocated £4m to 24 projects designed to encourage wider participation in various professions.²⁷

There is relatively weak evidence that the Government's commitment to widening participation has made a difference to the under-representation of lower socio-economic groups in higher education. The Sutton Trust has found that a student in a state school has the same chance of going to one of the UK's leading 13 universities as a student from the independent sector who gets two grades lower at A-level.²⁸ In 2004 to 2005, 20 per cent of entrants to Russell Group institutions (a group of 20 elite, research-intensive universities) were from the four lowest class

a The Aimhigher programme seeks to raise awareness of the benefits that higher education can bring, irrelevant of students' backgrounds.

b The Department for Innovation, Universities and Skills is now part of the Department for Business, Innovation and Skills.

groups, compared to almost 30 per cent across all universities, and 50 per cent of the wider population.²⁹ There is some evidence of a stronger policy emphasis on widening participation: HEFCE surveyed HEIs and found that widening participation was entrenched as part of the core mission of the majority of institutions. Russell Group institutions, in particular, were more likely to rate the place of widening participation in their marketing strategy as strong or very strong.

The DIUS has claimed that there has been some progress made on narrowing the socio-economic gap in young entrants to higher education.²³ Other research suggests that when looking at overall accepted applicants between 2004 and 2008, there has been little change in age, ethnic or socio-economic profiles.³⁰ The recent report by the Panel on Fair Access to the Professions highlighted that there has been little change in terms of socio-economic groups, with the professions becoming more socially exclusive over time.¹

A major, formal study across the higher education sector, examining the impact of current widening participation schemes both in the short and medium-term (eg performance in medical school, drop-out rates etc) would provide a stronger evidence base for future policy in this area, and would help elucidate the factors preventing widening participation as they are likely to be multifactorial.

Why is medicine dominated by students from higher socio-economic grades?

At the most obvious level, entry into medicine is a competitive process, with many medical schools requiring two As and one B at A-level, and a few requiring three As.³¹ Students from lower socio-economic groups have a lower level of attainment at A-level. While 69 per cent of 18-year-olds from higher professional occupational backgrounds achieve two or more A-levels, only 23 per cent of those from routine occupational backgrounds do so. Young people from lower socio-economic groups achieve fewer A-levels, have lower rates of staying on at school post-16, achieve fewer GCSEs and have lower attainment at Key Stage 3.²¹

It is often acknowledged that the under-representation of students from less privileged backgrounds is connected to the nature of their aspirations and the kind of advice they receive, and not just to academic achievement.²⁹ Some state schools provide only limited guidance to pupils, and research has found that teacher advisers in disadvantaged areas can underestimate their pupils' chances of admission and success at elite universities.²⁹ Independent school pupils have access to facilities that are often better than those available in state schools³² and it is likely that independent schools and high performing state schools will provide more extensive support than state schools in disadvantaged areas with the writing of references and application forms. Sociological literature on the subject testifies to the inequitable distribution of the social networks that encourage aspiration to higher education.³³ State school students from less privileged backgrounds are more likely to lack familial understanding and support when applying to medical school. Where families from such backgrounds encourage children to apply, they are likely to be less able to provide help with writing applications or preparing for interviews.

Aside from familial and school support, there are also problems with disadvantaged students' perceptions of studying medicine and of a medical career. Qualitative research has found that students from lower socio-economic grades see medical school as being for 'posh' people, and significantly underestimate their own chances of acceptance and success. They also perceive medicine as a financially lucrative option, but one that is likely to involve prohibitive personal sacrifices. In contrast, students from the higher socio-economic grades cite high intrinsic rewards such as fulfilment and achievement as a benefit of a medical career.³⁴ Many students from disadvantaged backgrounds may psychologically exclude themselves as potential candidates for medicine at an early age, due to a lack of the social and cultural capital that gives middle-class students the confidence and familiarity to view themselves as future doctors.³⁵

Material factors are also likely to be more important to students from the lower socio-economic groups. A perceived high load in terms of study hours and cost is likely to be more daunting to students with less financial support. Research by the Sutton Trust with students from lower socio-economic groups also found that nearly four in five (78%) expected to work more than eight hours per week while studying, which would make studying medicine particularly difficult.³⁶ Evidence from the King's College London Extended Medical Degree Programme suggests that students from some families are expected to make a financial contribution to maintaining the family as a whole,³⁵ a difficult burden given medical students' heavy schedules, short holidays and the frequent requirement of holiday work.

Lack of support and guidance for applying to medical school is a major barrier for many students from less advantaged backgrounds. Lack of guidance in applying to medicine is not, however, a problem found exclusively among lower socio-economic groups. Here, a medical student explains her school's failure to provide support for her decision to study medicine.

As a current final-year student, who attended a very 'old-boys' boarding school which prided itself on its excellent academic record and Oxbridge acceptance rates – not extending to excellence in science subjects and in particular the study of medicine – I hit several large hurdles during my application process to medical college. Different schools 'rate' themselves in different ways including number of places gained at university per year, and in particular, the number of places gained to study at Oxbridge per year no matter in what subject. As far as my school was concerned, I was an easy bet to get accepted to Oxford to study English Literature. When I made it explicitly clear that this was not going to happen, the tack changed to the study of law, once more at Oxford. The motivation was clear – I was a clever girl and would be lost as a useful statistic if I applied to study medicine in London, which was what I wanted, and despite huge amounts of pressure, eventually came to do.

Medical school initiatives to widen participation

An obvious way to increase the proportion of medical school applicants from lower socio-economic backgrounds is to raise the aspirations of school pupils by ensuring they are aware of the benefits of a medical career. It is important to work with schools to ensure that those with the potential to meet the academic requirements are supported, in order to encourage both university application and an interest in medicine. The BMA supports all attempts to encourage medical school applications from a wider socio-economic base.³⁷ Much of this work may need to be focused on children at an early age, but schemes run by universities can still be effective. The BMA believes that all medical schools should seek to develop outreach programmes with schools and sixth form colleges to encourage suitable applicants who would not traditionally consider a career in medicine.³⁸ Medical schools have developed a variety of initiatives to attract students to medicine (see page 22). Some medical schools run outreach programmes in local schools to increase interest in medicine among secondary school pupils.³⁹ Some, such as summer schools, provide intensive support to capable students in low achieving schools, while others are designed to raise aspirations and challenge negative stereotypes about the accessibility of the medical profession to non-traditional entrants.⁴⁰ Ideally, in addition to raising aspirations, practical initiatives should be available to school students to provide some sort of compensation for disadvantage. This could include additional academic support and tutoring, making work experience available, and teaching students generic skills such as communication and interview technique.^{41, 42}

Three medical students comment on the barriers faced by students from disadvantaged backgrounds.

Medical schools need to get out the message to students from disadvantaged backgrounds that medicine can actually be an option! More foundation year courses could be made available, or alternative routes into medical school such as access courses. Also, clearer information on the sources of funding available would help, eg charities and university funds as well as loans.

Financial strain is not necessarily the main issue that affects people from disadvantaged backgrounds in applying to medical school. It's sometimes the other things, like friends and family not understanding the amount of study required, or the time commitments, or just not having much encouragement.

I think there's a great move on the surface to attract individuals from disadvantaged backgrounds but the effort is far from enough. More should be done in terms of outreach to schools, ensuring young people are aware of the benefits of doing medicine. They also need to be told that studying medicine is a real possibility if they want to do it and knowing that finances would not be a problem is only part of this.

Many of the challenges surrounding access to medical school, however, need to be met by secondary or even primary schools rather than by the higher education sector. It is vital that all students have access to the same quality of information about their chances of acceptance into particular universities or courses of study.⁴³ Students should also have a good understanding of what a medical career and medical education involves. This will help to minimise drop-out rates and disaffection during study. There is evidence to suggest that – with the exception of students with a doctor as a parent – socio-economic background does not seem to be significantly correlated with a student’s likelihood of dropping out of medical school. Research from Arulampalam et al concluded that the probability of students dropping out of medical school during their first year of study was largely influenced by both their A-level subject choices and corresponding grades.⁴⁴ In addition, the study found that it is likely that if medical schools’ entry requirements and/or admissions standards were relaxed, this would have a detrimental effect on retention rates unless this was accompanied by measures such as focused student support.⁴⁴

Medical schools are legally permitted to modify their admissions procedures in order to increase applications from under-represented groups and pre-admission positive action strategies are often supported by UK public funding.^{24, 45} Some medical schools run programmes to target a more diverse range of students, and to allow the participation of students from disadvantaged socio-economic backgrounds. Such schemes may take the form of foundation year or access to medicine programmes, which provide a preparatory year that may address deficits in science subjects. They may also extend to reducing the A-level requirements for candidates from non-traditional backgrounds. Most of these programmes also provide students with additional pastoral support, and several also extend the length of the medical degree. Pastoral support is a vital element of these programmes, as issues of confidence, identity and ‘fitting in’ at medical school are encountered by many non-traditional students.^{46, 47}

Three students comment on ‘fitting in’ at medical school.

There aren’t many people at medical school who are from a similar background to myself, and at times I have found that those from more affluent backgrounds have struggled to identify and understand patients who are less well off. In these situations my background can be an advantage.

I’ve not always done as much of the social stuff as perhaps others have – partly lack of money and partly spending too much time at work! I think I’ve found it quite hard to identify with the other students and the doctors because I don’t have much in common with them in some ways.

I guess I’ve been quite reserved at medical school, because I’ve always worried a little that other students have a very sheltered existence and how they’d react to knowing I’d been in care. I’ve always felt a little bit paranoid about asking for help from the med school with anything, in case people took that as a sign that I couldn’t cope and shouldn’t be doing medicine.

Examples of extended access schemes

- King's College London School of Medicine has run its Extended Medical Degree Programme since 2001. This programme is designed to encourage participation from talented students at low achieving state schools in inner London. Students complete a six-year course, allowing them to study at a slower pace and with more support for the first three years. The majority of students come from socio-economic groups III, IV and V. Applicants sit a cognitive reasoning and personality type test, followed by an extended interview. The ethnic mix of students on the programme is close to that of their age group in the local area, with 91 per cent coming from minority ethnic communities, compared with 50 per cent of the students on the conventional medical degree programme. Students on the programme have achieved examination results spread relatively evenly across their year groups, and pass rates in the clinical years of medicine are the same as those of conventional students.⁴⁷ (www.kcl.ac.uk)
- Sheffield University runs an Outreach and Access to Medicine Scheme that provides places and additional financial support to pupils with an aptitude for medicine and no family history of higher education. School students who complete the whole of the outreach to schools programme are guaranteed an interview for one of the 20 places ring-fenced for non-traditional applicants. (www.shef.ac.uk)
- Southampton's six-year medical degree, designed to widen access to the profession, includes an extra preparatory year of study before the degree course to prepare students for medicine. (www.som.soton.ac.uk)
- Pathways to the Professions project was set up in 2001 to widen access to law, medicine, veterinary medicine and architecture courses at the University of Edinburgh. The project was developed in conjunction with the faculties of law, medicine, veterinary medicine and architecture, school staff, careers staff and professional bodies. The project encourages progression by under-represented groups of students from the 46 state schools in Edinburgh and the Lothians into professional courses and subsequently the professions. The desired outcomes of the project are an increase in applications from the state sector and an increase in under-represented groups accessing the professions. (www.sra.ed.ac.uk/pathways)

- Since 2003 St George's Hospital Medical School has run a foundation year for medicine jointly with Kingston University. Entry level is GCSE with three years work experience and evidence of ability from the workplace. Successful students progress to year one of the MBBS. St George's has also run an Adjusted Criteria programme since 2002. Under this programme, applicants' academic qualifications are judged relative to their social peers rather than against the national average. Applicants with A-level results 60 per cent above the average at their school are guaranteed an interview, at which their educational background is not disclosed. Since the programme began in 2002, it has accounted for almost 7 per cent of St George's medical students. All participants come from comprehensive schools, and many are from families without previous experience of higher education. Results from first-year final exams between 2003 and 2006 showed that Adjusted Criteria students scored an average of 65.41 per cent, while standard-offer students scored an average of 65.69 per cent. (www.sgul.ac.uk; www.kingston.ac.uk).

The newest English medical schools have made a particular effort to encourage participation from non-traditional students, with many ring-fenced places for those from socially deprived backgrounds.⁵⁶ Four new medical schools opened in 2003: the Peninsula Medical School; University of East Anglia Medical School; Brighton and Sussex Medical School; and Hull York Medical School. In addition, four new centres of medical education have been established: the University of Durham, Queen's Campus, Stockton, the University of Keele, the University of Warwick and the University of Nottingham Medical School at Derby. The development of these medical schools and centres gave rise to opportunities for scrutiny of selection practice and the development of new approaches to recruitment.⁴⁵ The Peninsula Medical School, for example, interviews all applicants reaching its minimum academic standard. This structured interview is designed to reveal attributes such as cooperation, empathy and insight. The resulting intake is more diverse than most medical schools. Students at Brighton and Sussex are drawn from a wide range of backgrounds including post A-level students, those from access to medicine courses and mature students. Some of the new medical schools also have a strong focus on encouraging students from their home region.

The evidence on widening participation initiatives presents a strong case for measures to counter disadvantage, particularly regarding selection procedures and the disadvantage faced by applicants from lower socio-economic groups. It is important to acknowledge that some initiatives to widen participation in medicine are complex and expensive, and may be controversial. The 2004 Schwartz report on admissions to higher education pointed to the difficulty, with limited resources, of ensuring that programmes designed to benefit particular socio-economic groups are equally accessible to all members of those groups.¹¹ Some outreach programmes may benefit only a small group of local students, while students who live in other areas or who are disadvantaged pupils in better performing schools may miss out entirely. Programmes that relax entry criteria to admit non-traditional students may face criticism in the media for admitting less academically proven candidates.^{48, 49} Widening Participation programmes require sustainable funding in order to support non-traditional students through the course⁵⁰ – for example, the King's College London Extended

Medical Degree Programme accepts 50 new students each year, with approximately 270 students in the course at any one time and costs £190,000 per year to run.⁴⁷

The impact of graduate medical programmes on socio-economic diversity

It has often been suggested that graduate medical programmes have the potential to diversify the medical student body.⁵⁰⁻⁵³ These programmes, discussed on page 34, generally provide a shortened course to students who already have a degree, often in the sciences. In other countries, they have been proposed as a means of attracting students from non-traditional backgrounds, in order to better serve areas in need of more doctors. A study of the graduate medicine programme at the University of Nottingham Medical School found that graduate entrants were more likely to be male, White and from a more disadvantaged socio-economic background than entrants to the Nottingham undergraduate programme.⁵⁰ This particular group is particularly under-represented at medical school in comparison to the wider population.

The long-term effects of relatively recently introduced graduate programmes on the diversity of the medical profession are uncertain. It has been suggested that the rising levels of debt to be expected by the average medical student are likely to reduce the attractiveness of graduate programmes to non-traditional students.⁵⁰ The Australian experience suggests that graduate programmes may end up drawing from the same pool of students as undergraduate programmes, as students take a biological science degree with the ambition of entering graduate medicine.⁵³ While graduate programmes are likely to contribute to some degree to the diversity of the medical school population, the need for other strategies to widen participation remains⁵¹ and it is important not to conflate graduate medical education with diversity.⁵³

The costs of studying medicine

In 2004, the BMA's report *The demography of medical schools: a discussion paper* identified the cost of studying medicine as a significant issue for students from lower socio-economic groups.² It pointed out that medicine is significantly more expensive than other degrees, due to the additional costs for travel and equipment, and fewer opportunities to pursue paid employment while studying. In England and Wales, the Higher Education Act 2004, and in Northern Ireland, the Higher Education (Northern Ireland) Order 2005, allow universities to charge variable tuition fees of up to £3,000 per year (with payment deferred until after students graduate and are earning over £15,000 per year). Almost all institutions have chosen to charge fees at the highest possible rate. This has been accompanied by measures to protect students who are from lower socio-economic groups. As was detailed on page 17, access agreements have been implemented whereby in order to charge the new fees, institutions have had to demonstrate financial commitment to widening participation. Students from households with an income of less than £20,000 are automatically entitled to a £2,700 grant and a £300 bursary. The eligibility for grants does not take into consideration how many people within the household are attending university, which can make it difficult for households who have an income above the £20,000 threshold and have more than one child at university.

The burden of these new funding arrangements is high and this is particularly true for medical students. The BMA's MSC considers that the funding system in its current form has been designed for three-year degrees, whereas medical degrees are normally five years, with some extending to six, seven or even eight years.¹⁵ The MSC has modelled medical student debt to account for the new higher education funding system, and found that an average medical student at the end of a five-year degree is likely to owe the Student Loans Company £46,000 if they studied in London, and £37,000 if they studied elsewhere in England.¹⁵ There are differences by nation. In Scotland, domiciled students are not required to make a personal contribution to their tuition if they are studying for their first degree.

A medical student comments on financial burden of doing a medical degree.

One of the key problems facing all students is the level of financial burden that a four- to six-year course leaves you with. I think that this does deter good quality candidates from applying. My medical school does offer bursaries to assist but I think that the problem is on the initial application and so it's really a government issue with regards to fees for taking university courses. I think that if fees continue to increase this will have a detrimental effect on those from disadvantaged backgrounds. I think that current estimates for a five-year course are a debt of £20,000 to £30,000. This is a significant amount of debt for someone from a disadvantaged background.

Costs may be a particularly serious issue for graduate medical students, who enter medical school later and who are likely to have more financial commitments.⁵² The situation is particularly difficult for graduate medical students domiciled in Scotland and Northern Ireland, as their health departments have made no provision for four-year courses, whereas English and Welsh domiciled graduate students on four-year courses have their fees paid by the NHS for years two to four.¹⁵ Given that many see graduate programmes as an important tool for diversifying the student population (see page 24), this could further hinder efforts to encourage wider participation in medical education.

The Government proposes to review the cap on tuition fees in England and Wales in 2009, with the possibility of charging students higher than the existing £3,000 cap. Should the cap on fees be raised to £7,000, the average medical student outside London would face debt on graduation of almost £57,000, while a London student would owe £67,000. Neither group would be able to repay the loan within 25 years on current basic NHS salaries.¹⁵

A medical student comments on financial hurdles and the importance of encouragement.

Finances have been and continue to be the biggest hurdle for me. I was fortunate to come from a family where I was encouraged to do whatever I wanted to do, however impossible it seemed. I know that is not always the case. I think the best way to get more students from disadvantaged backgrounds into medical school is to encourage them to work for it and to show them that it's a plausible option. If no one in your family has ever been to school, it becomes almost impossible for you to think of going to university, let alone doing medicine. This must be made worse if you have financial worries too.

There is considerable tension between the UK Governments' aim of widening participation and its introduction of variable top-up fees for tuition in England, Wales and Northern Ireland. It is widely reported that cost is viewed as a prohibitive factor by students from lower socio-economic backgrounds. Qualitative research has found that students of all backgrounds are concerned about the high cost of medical education, but only those from lower socio-economic grades see study costs as a constraint on their choice of degree.³⁴ Those working to increase participation rates among lower socio-economic groups in medicine face a difficult task: encouraging the most debt-averse group of potential students to undertake what is likely to be the most expensive degree programme.⁴⁰ The BMA's MSC has called for an independent review of the medical student funding system, recognising the need to alleviate the very heavy debt pressures faced by all medical students, which are particularly likely to deter those from lower socio-economic backgrounds.

Despite several types of potential disadvantage faced by students from lower socio-economic groups, there are many examples of students from disadvantaged backgrounds who, determined to be doctors, ensured that they did everything within their power to achieve that goal. A fifth-year medical student from a non-professional background talks about her struggle to get into medical school.

Before I came to university, I spent three years at college doing my A-levels. Unfortunately my grades were A, B, C and D so I had to spend a year re-sitting the lower three A subjects as I was determined to be a doctor. I then got ABB but was rejected from my conditional offer as the A was not in chemistry. As I did not particularly want to go to university except to do medicine, I decided to reapply the following year when I was accepted. During this year I carried on working for Tesco and attended a Princes' Trust course for three months. I then started supporting adults with learning disabilities full-time until I started university aged 21. I am very grateful to my university for giving me the opportunity to study medicine, when it appeared very likely that I would not be accepted anywhere.

I found university a bit of a culture shock as I come from a working-class background, with no family history of university education. As a good performing fifth year with an intercalated BSc, I feel that I proved myself and would like to see allowances made for students from working-class backgrounds, like myself, who attended poor performing state schools.

In addition, I would like to see more support given by medical schools to those medical students who have limited finances. I have limited finances and support myself through studying. I supplement my income through a casual job as a support worker for adults with learning disabilities. Although I try not to let it interfere with my studies, it inevitably does. I often miss out on study or placement time if I need to go to work. Whereas most students enjoy their holidays as time off, I spend my time at work. I do not think medical school properly considers or supports students with a limited income.

Summary

The socio-economic status of students at medical schools in the UK has changed very little over time. The majority of students still come from professional and managerial backgrounds. This reflects the situation across the professions in the UK as highlighted in the 2009 report from the Panel on Fair Access to the Professions. An important factor in the under-representation of other socio-economic groups seems to be their low rates of application – a phenomenon that is likely to be due to a complex combination of factors – and a consistently lower acceptance rate. Financial considerations may be one important barrier to a wider social mix of medical school applicants and this means that the heavy burden of debt experienced by most medical students is an increasingly serious issue. Initiatives to raise aspirations and to support applicants are likely to be important in widening access to medical school.

Questions for discussion

- How can the key reasons behind the low application and acceptance rates to medical school from lower socio-economic groups be identified?
- How can medical schools ensure that they are getting the best candidates from the broadest socio-economic groups?
- What are the options for widening access to medical school?
- How can the effect of top-up tuition fees on the demography of medicine be monitored?
- What is the effect of students' increasing need to manage debt by seeking part-time employment during term time?
- How could the current bursary system be improved to support widening participation initiatives?
- Does the content of applications from students of different economic groups differ in style or substance?
- What impact does graduate-entry have on widening participation?
- Would lowering the minimum academic criteria required for entry to medical school increase the number of applications received from students from lower socio-economic groups? Would this have any impact on the number of students successfully graduating from medical school?
- What effect does the absence of tuition fees for Scottish students studying at Scottish medical schools have on applications to medical schools? Does reducing the overall cost by removing tuition fees help encourage Scottish students from lower socio-economic groups?

A medical student from a disadvantaged background discusses the hurdles she faced in attending medical school.

Gaining a place at medical school was down to my own personal determination and hard work. I was living in emergency accommodation, and although I am grateful that this was available to me, it is not an ideal place to live. I was surrounded by people suffering after troubled childhoods, dealing with addiction and mental illness and struggling to get into jobs and education. I had no family surrounding me to help or encourage me, and after leaving secondary school to go to sixth form, I felt my teachers cared more about my grades than about me or my future. My housing situation was always insecure and I was struggling to live on my income support. I knew I had to get into medical school, if I didn't then I wouldn't have anywhere to live.

It was difficult to start somewhere new not knowing anybody. I applied to the cheapest halls because I knew I couldn't afford the more expensive ones. I was the only medic living there. This meant that when we all began lectures I was on my own having not met anyone in halls. It can be quite intimidating, being surrounded by people that are so polarised from yourself. I really felt that my background, experience and also my political views really separated me from my peers. I did feel isolated, and found it hard to integrate. I found there was little pastoral care. I even considered dropping out or changing to another course, but again, I knew if I did I would have nowhere to live. There was no option but to stay, and now I'm glad I did.

Living on limited means, I am now very worried about how I am going to afford travel to placements. At medical school the admin and teaching staff seem to assume that you have a car and that you are upper middle class. Also, medical books and equipment are very expensive, and this is something I find difficult to budget for. There is a lot of banding about of the term 'lower socio-economic class' with little insight into what that might mean. I feel medical school is not tailored for people from my socio-economic background, and at times this has made me feel excluded and isolated.

My medical school sent me information regarding specific bursaries available to me. I applied to all I was eligible for, however I was not awarded anything, and was not given an explanation as to why this was. In addition, I've never been offered any sort of pastoral care save a 10-minute interview with a stranger once a year. I feel pastoral care is not something offered in any form by my medical school. Medical schools need to provide adequate support throughout the application process. Medical schools need to put out the message that medical school is for everyone. I believe that a more diverse workforce is a strength, not a weakness.

Section 3: Age

Age is an increasingly important issue in medical education. In recent years, graduate entry to medical school has become more common, while at the same time new legislation against age discrimination makes universities' responsibilities more complicated. This section explores these key issues for the discipline of medical education.

Applications and acceptances to medical school by age

Data on the age of medical school entrants is provided by UCAS and is broken down into four age groups: 20 and under, 21 to 24, 25 to 39, and 40 and over. **Table 3** shows the changing composition of applicants and acceptances to medical school by age between 1996 and 2008.

Table 3 – Percentage of UK applicants and accepted applicants to medical school by age 1996-2008

Year		Age (years)			
		20 and under	21 to 24	25 to 39	40 and over
1996	Applicants	83.3	9.4	7.2	0.1
	Accepted applicants	91.0	6.2	2.8	0.02
1997	Applicants	84.5	8.8	6.5	0.3
	Accepted applicants	92.0	5.2	2.8	0.0
1998	Applicants	84.6	8.7	6.5	0.2
	Accepted applicants	91.7	5.1	3.1	0.02
1999	Applicants	83.5	9.9	6.4	0.2
	Accepted applicants	90.0	6.8	3.2	0.02
2000	Applicants	80.3	11.5	7.9	0.4
	Accepted applicants	87.0	8.7	4.3	0.04
2001	Applicants	79.4	12.6	7.6	0.4
	Accepted applicants	85.3	10.4	4.2	0.1
2002	Applicants	75.5	14.3	9.5	0.7
	Accepted applicants	81.7	11.7	6.3	0.3
2003	Applicants	66.3	17.2	14.8	1.7
	Accepted applicants	78.0	12.8	8.8	0.4
2004	Applicants	66.5	17.2	15.0	1.3
	Accepted applicants	78.8	11.8	9.0	0.5
2005	Applicants	65.7	17.9	15.3	1.1
	Accepted applicants	76.2	13.4	10.1	0.4
2006	Applicants	65.7	18.5	14.7	1.1
	Accepted applicants	77.2	12.9	9.4	0.4
2007	Applicants	66.9	19.3	12.9	1.0
	Accepted applicants	78.6	13.0	8.1	0.4
2008	Applicants	68.8	19.8	10.6	0.9
	Accepted applicants	77.9	14.8	7.0	0.3

Source: UCAS 2009

Figure 4 – UK applicants to medical school by age group 1996-2008

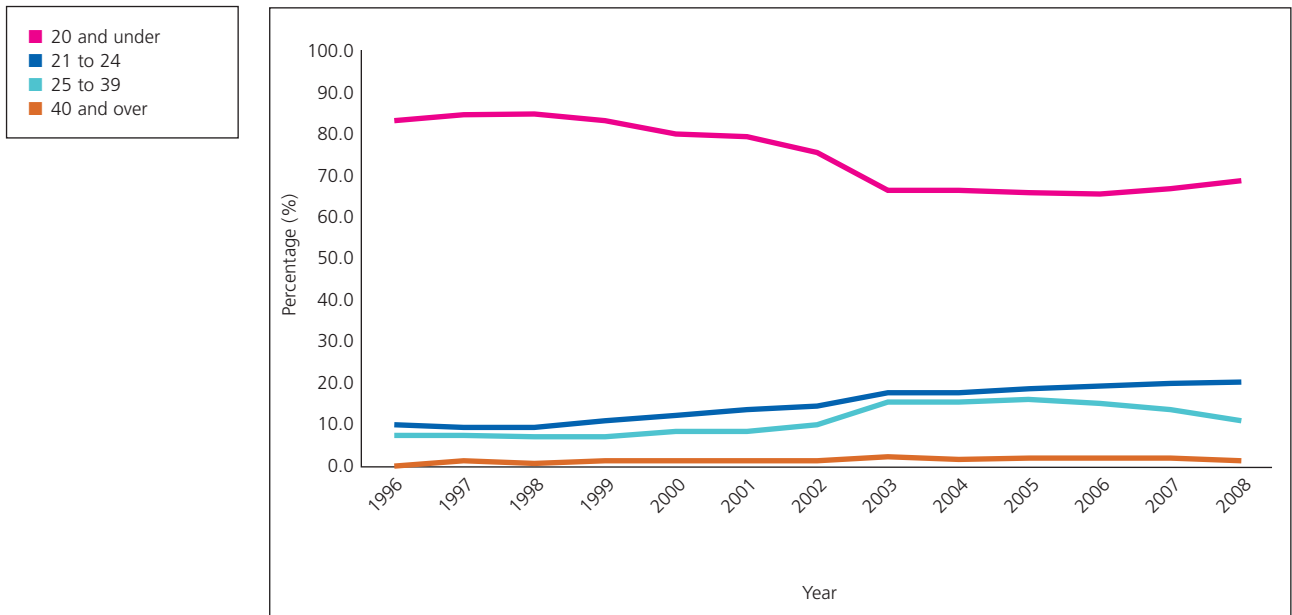
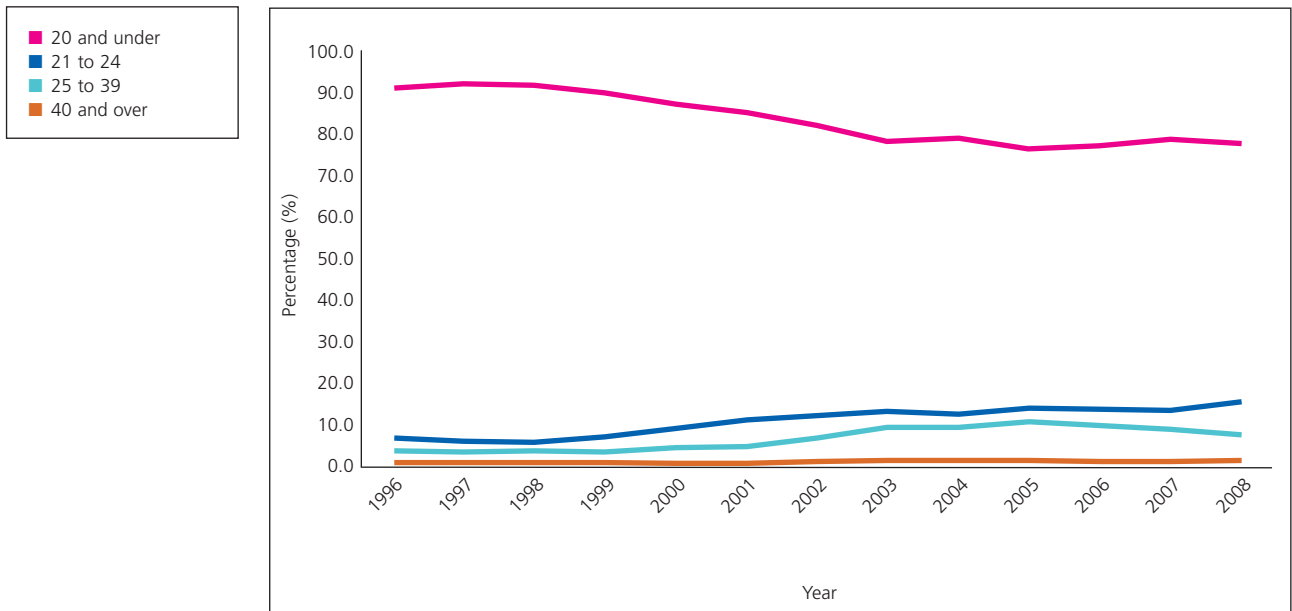


Figure 5 – UK accepted applicants to medical school by age group 1996-2008



Between 1996 and 2008 there has been an increase in the overall numbers of applicants and accepted applicants but there has been a decline in the proportion of students aged 20 or under applying to medical school. In 2008, 69 per cent of medical students were aged 20 or under, compared to 83 per cent in 1996. The proportion of applicants in the other age groups has correspondingly risen. From 1996 to 2008 applicants increased in both the 21 to 24 and 25 to 39 age groups, from nine per cent to 20 per cent and seven per cent to 11 per cent respectively. The proportion of applicants over 40 has risen slightly from 1996 to 2008, but remains very small (1% in 2008).

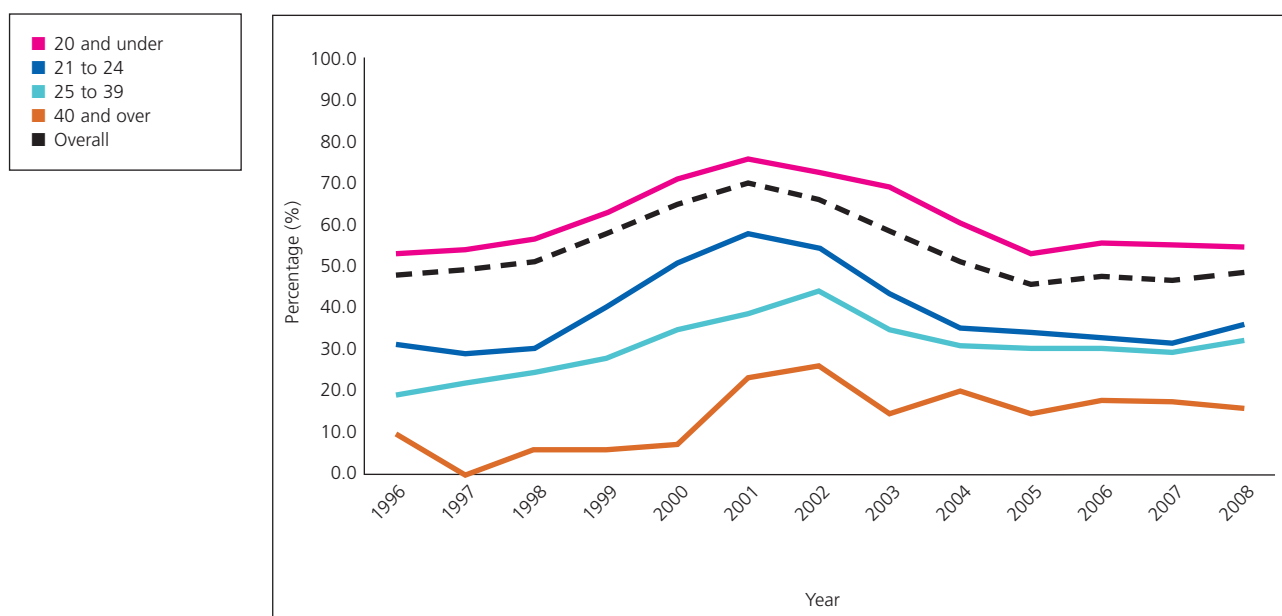
There was a gradual decrease in the proportion of applicants under 21 evident between 1996 and 2003, followed by a sharp decrease in 2003, which is probably explained by the opening that year of new medical schools. A number of these new schools actively encouraged applications from older students. Since 2003, however, the proportion of applicants aged 20 or under seems to have stabilised at about two-thirds of each annual intake, with the remaining third composed largely of those aged 21 to 39. These trends are described in **figures 4** and **5**.

Table 4 – Acceptance rate to medical school by age 1996-2008

Year	Acceptance rate (%)				Overall
	20 and under	21 to 24	25 to 39	40 and over	
1996	52	31	19	10	48
1997	53	29	21	0	49
1998	55	30	24	6	51
1999	62	39	28	6	57
2000	70	50	35	7	65
2001	75	57	38	23	70
2002	72	54	44	26	66
2003	69	43	35	15	58
2004	60	35	31	20	51
2005	53	34	30	15	45
2006	55	33	30	17	47
2007	55	31	29	17	47
2008	55	36	32	17	48

Source: UCAS 2009

Younger students commonly achieve higher acceptance rates than older students. In 2008, while only 69 per cent of applicants to pre-clinical medicine were aged 20 or under, of the total number of accepted students, 78 per cent were aged 20 and under. **Table 4** and **figure 6** shows acceptance rates since 1996.

Figure 6 – UK acceptance rates to medical school by age group 1996-2008

The much higher acceptance rate for those aged 20 and under raises the question of whether older age groups experience disadvantage in applying to medicine. Analysis of applications and admissions statistics from 1996 and 1997 (taking account of a range of variables) found significant evidence that applicants over the age of 21 were at a disadvantage when applying to four of the 27 medical schools included in the study (Dundee, Leicester, Queen Mary and Westfield College and St George's), while they were at an advantage in one medical school (Nottingham).⁵⁴ Other research has shown that age does not significantly affect selection.⁵⁵ There may be several reasons for the increase in older applicants and accepted students, including important recent changes in the structure of medical education.

Access courses

Access courses, sometimes geared specifically to medicine and normally lasting one year, are now available at a number of further and adult education colleges, and graduates of these courses are considered for entry by some medical schools. It has been predicted that growing numbers of mature students will enter medicine via access courses without having obtained the standard entry requirements, which still holds for the majority of traditional school-leaver entrants.⁵⁶ Higher Education Statistics Agency (HESA) data on students enrolled in pre-clinical medicine for the 2006/07 academic year shows that only 100 students were recorded as having an access course as their highest qualification.^{c, 57}

c Please note that HESA requires its data to be rounded to the nearest five students.

Access courses generally provide intensive grounding in the sciences, and are an important potential route into medicine for non-traditional students. Access courses often specifically aim to recruit mature students and students from less advantaged backgrounds and thus have a role to play in widening participation initiatives.⁵⁸ The access to medicine course run by City College Norwich, for example, is designed to cater for mature students.⁵⁹ Lambeth College specifies that applicants to its access course, for students hoping to enter medicine and dentistry, should have relevant work or other life experience, which is viewed as essential grounding for the intensive course of study offered.⁶⁰

New medical schools

Four new medical schools opened in England in 2003, and these schools have encouraged applications from older students. Hull York Medical School encourages applications from mature students and graduates, who usually account for over a quarter of their annual intake.⁶¹ New medical schools and their part in the changing demography of medicine have been discussed in greater detail on page 23.

Graduate entry to medical school

Graduate entry to medicine is not new. In 1976, around 1,000 graduates applied for places in medical school, and around one in six was successful. A minority of medical schools reserved a small proportion of places for older applicants, though only a very small minority of schools considered reducing the length of their course for graduate entrants. Around five per cent of medical students were graduates although certain newer medical schools (for example Southampton and Leicester) aimed to fill up to 15 per cent of places with graduates.⁶² Despite this, mature students often experienced considerable barriers to studying medicine such as lack of flexibility in entry requirements and course structure, lack of consideration of past experience and financial barriers.⁶³ Graduate students were rarely given any reduction in the time allowed to complete the course and frequently found that the financial barriers were insurmountable. A-level results were normally considered, making entry for mature students with experience or good degree results less flexible. Graduate applicants had a significantly lower rate of entry to medical school compared to all Universities Central Council on Admissions (UCCA)^d students.⁶²

Since the introduction of graduate-entry courses in the UK, graduate entrants have become commonplace in UK medical schools. A 1997 report by the Medical Workforce Standing Advisory Committee saw scope for developing graduate-entry schemes to allow faster expansion of the profession than traditional courses and to broaden the field from which doctors are recruited.⁶⁴ Leicester-Warwick and St George's medical schools began to run accelerated four-year medical courses for graduates in September 2000. By 2003/04 there were 622 entrants to four-year courses for graduates in England.¹⁰ The introduction of graduate-entry courses may also have encouraged general graduate entry. In 2006/07 HESA data showed 2,350 pre-clinical medicine students had a prior undergraduate degree from a UK institution. In comparison, in 1994 there were just 879 UK graduate applicants for entry (of whom 281 were accepted).¹⁰ At Swansea and Warwick Universities there has been a complete shift toward graduate-only medical programmes.

^d UCCA is the predecessor to UCAS.

Medical schools with graduate-entry programmes

Barts and The London Queen Mary's School	Liverpool
Birmingham	Newcastle
Bristol	Nottingham
Cambridge	Oxford
King's College London	Southampton
Imperial College, London	St George's, London
Keele	Swansea
Leicester	Warwick

Source: *Becoming a doctor: entry in 2009* (BMA 2008)

Implications of graduate entry and an increasing proportion of mature students

Graduate-entry programmes increase flexibility in career choice, allowing individuals to make the decision to become a doctor long after they have left school.⁶⁵ Research in Australia found that reasons for the delayed entry of mature students to medical school include late consideration of medicine as a career, financial considerations, dissatisfaction with previous career, poor academic results, or a combination of the above factors.⁶⁶ It has long been recognised that the fierce competition for places at medical schools means that large numbers of frustrated and capable applicants find their way into other university degrees while retaining a strong desire to study medicine.⁶² Graduate and mature entrants to medicine are less likely to have been influenced by parents or schools in their career choice than younger students.^{52, 65, 66} It is also often assumed that they have greater awareness of what constitutes a career in medicine. It has been suggested that mature and graduate students have and retain a higher motivation than their younger colleagues, as well as a dedicated approach to learning, high standards and breadth of experience.⁶⁷ They may also have better developed communication skills and capacity to deal with others,⁶⁸ both skills which are increasingly recognised as essential in medicine. Medical schools assume that graduate entrants have already developed study skills. Graduate-entry courses are often therefore based on small group and self-directed learning techniques including problem-based learning.⁶⁵ As was discussed on page 24, graduate programmes may also attract a more diverse group of students into medicine. Although graduate entry and widening participation should not be conflated. It has also been suggested that a trend towards graduate entry to medical education will equip practitioners to view medical education and practice more broadly and to value experience or qualifications in management and public health.⁶⁹

In the United States of America (USA) and Canada, prospective medical students are required to have a degree before they can enrol on a medical course. Since 1997, several Australian medical schools have also become exclusively graduate entry.⁶⁵ The Irish Government is also proposing to introduce graduate medical programmes.⁵² The increasing number of mature students being accepted onto medical courses, and the popularity of graduate-entry programmes suggests that there might be support within the UK for making more medical degrees graduate-entry courses.

Already some medical schools (such as St George's in London) have developed basic science first degree courses which are seen as a potential platform for later graduate entry to medical school.¹⁰

A graduate-entry student discusses why they came back as a graduate.

I always wanted to study medicine but didn't get the grades at A-levels. I chose a different degree and after completing this and a few years in a pharmacy department I realised that medicine was still burning in the back of my mind – so I took some professional advice and then went for it.

My medical school experience has mostly been positive and there was good academic as well as pastoral support, certainly for the first two years. The biggest challenge has been trying to get people to treat you as a mature adult. I've never come across any age-based discrimination either at medical school or on any of my clinical placements.

I think older and graduate medical students bring a wider life experience and for the most part have the ability to be more sympathetic and empathetic towards patients. They are often more confident (although sometimes this becomes arrogance) and have had experience just talking to people. Theoretically they work harder as they sometimes almost have something to prove because they have come into the profession later in life.

There is little conclusive evidence on differences in performance between graduates and non-graduates in UK medical schools.^{52, 65} As graduate entry becomes more established, research is needed to investigate the relationship between graduate entry and drop-out rates. At the moment there is little publicly available information on how this differs from undergraduate courses. Research is divided as to whether older students are more likely to fail exams but age does not predict clinical performance.⁷⁰ An Australian study of graduates from the first 16 years of the University of Newcastle admitting both graduates and non-graduates found no significant differences in academic performance, research outcomes or career progress.⁷¹

A graduate medical student describes her experience as an older student.

My age has never been an issue at medical school or on clinical placements. I don't know if my age has any association with my propensity to turn up on time, smartly dressed, and to be as helpful to the ward staff as I can be, but if it does then yes I would say that being older helps! I have heard of colleagues having some ageist banter but I've not experienced it. My only disappointment is that people often assume that I want to be a GP because I'm older. It does genuinely worry me that people have said that I might not get a place in specialty training as I won't be able to be a consultant for long enough before my retirement age.

It is sometimes suggested that graduates are likely to be attracted to different specialties than school-leaver entrants to medical school. Research in the UK in the early 1990s found no association between age at entry to medical school and choice of eventual specialty. Graduates at entry to medical school were a little more likely than non-graduates to choose general practice but this relationship was not strong.⁷²

A senior lecturer at St George's Medical School discusses the benefits of graduate entry.

The graduate-entry programme is more than a 'second chance' for students to study medicine. It is an opportunity for those who had not really contemplated medicine to move from arts or science subjects to then train to be a doctor. Graduate-entry programme students seem to have greater maturity and more confidence to say what they think. That is not to say that students on the traditional five-year medicine course are immature, rather that the graduate-entry programme students have come into medicine with fewer misconceptions and eyes wide open to the possibilities.

The graduate-entry programme course has a higher staff-student ratio than the five-year course at St George's. It allows the use of much more small group tutorial work, problem-/case-based learning and self-directed approaches. This is usually more satisfying for both teacher and student. It is fascinating to hear the broader range of ideas from outside science such as political, philosophical and sociological aspects discussed with some depth. This broadens medicine and encourages both students and teachers alike to focus on the various bigger pictures such as the NHS as an organisation, moral/ethical issues and the effect of spirituality on health and well being.

Mature medical students may experience more stress throughout the medical course, especially with regard to financial difficulties, family problems and loneliness or isolation from other students.^{52, 66, 73} Concerns about money, especially the prospect of beginning a career with large debts, is a possible reason that more mature students do not apply for medicine. The costs facing graduate students have been discussed on page 25. Research has also found that graduate students are less likely than non-graduates to feel stress due to uncertainty about wanting to be a doctor.⁷¹

The BMA recognises the positive experiences and attributes that mature students, graduates and students with children can bring to medical schools and to the medical profession.³⁷ It welcomes the development of graduate courses and the increasing number of such students on conventional medical courses. It also believes that these students should be encouraged and supported in applying for medical school.³⁷

A male, mature student studying medicine as a second degree explains his financial situation.

Academically, I was bright enough but financially, I was very weak. I had two big money problems, I could not get a grant (I had already received one for my first degree) and also, I would have to pay my own fees. I did, however, qualify for a student loan and a rather large professional studies bank loan. I come from a modest working class family (combined gross income ~£22,000), my Mam and Dad both help me out when they can but with sizeable commitments of their own I do not want to burden them further. Despite having had numerous part-time jobs and financial help from trusts and charities I will still finish my degree in about £50,000 worth of debt... if the current Government get their way, it will be impossible for people like me to get a decent education and to try to make a better life for ourselves.

The impact of age discrimination legislation

The Employment Equality (Age) Regulations 2006 in Great Britain and the Employment Equality (Age) Regulations (Northern Ireland) (2006) in Northern Ireland prohibit unjustified direct and indirect age discrimination, and the harassment or victimisation of any person on the grounds of age.⁷⁴ The enactment of this legislation has implications for institutions in relation to students of all ages. Those institutions attempting to foster access for older students need to be cautious that their admission policies do not discriminate against younger students. The Quality Assurance Agency for Higher Education (QAA) has, for example, advised institutions to remove minimum ages for entry to courses, or to ensure that where there are minimum or maximum ages, these can be justified objectively. Institutions such as those providing access courses designed for older students have responded to this by emphasising that courses are normally for mature students, but that all applicants will be considered on their individual merits, or else they have reviewed their entry criteria to reflect the skills, motivation and experience required, rather than focusing on age limits.⁷⁵

There have also been questions raised about whether it is still acceptable to treat mature students differently than school-leavers by considering different kinds of qualifications from each in the admissions process. The Equality Challenge Unit advises that this is acceptable, as it implies different but not discriminatory treatment. It is important that admissions policy for mature students should not have an absolute minimum age bar such as over 21, and that policy emphasises that students' individual merits will be considered.⁷⁵

Age discrimination legislation also removes the minimum age of 18 for entry to university. The Equality Challenge Unit suggests that, partly in response to this, it is advisable for institutions to develop a policy for safeguarding young people. This might include requiring Criminal Records Bureau checks for staff responsible for younger students, and providing information to parents on the nature of the institution's duty of care and the extent of responsibility it holds.⁷⁵ The University of Surrey has a procedure in place for interviewing applicants who would not reach the age of 18 before Christmas of their first year. This involves giving the student and his or her parents a tour of the university to emphasise that the young person will be entering an adult environment, and to identify together any potential risks. The university also sends a letter to parents detailing the respective responsibilities of parent and institution and requires a parental consent form to be signed.⁷⁵ Other guidance suggests that an institution's duty of care to students is likely to justify its refusal of admission to students much younger than 17 and a half or 18.⁷⁶

In its guidance to the health professions on the implications of age legislation, the Equality Challenge Unit suggests that the previously common practice in some medical schools of adopting caution in admitting applicants over the age of 40 is now inadvisable. Where institutions discourage older applicants, it is possible that claims of age discrimination will be registered against them.⁷⁶ Arguments used in the past such as the relatively higher cost of training older applicants, who will generally have shorter careers in the NHS, are now unlikely to be acceptable justifications for the imposition of maximum age limits.⁷⁶

An older student discusses the impact of the age discrimination legislation.

Despite age discrimination laws coming in before I applied I found that there was still explicit ageism in prospectuses and on talking to admissions tutors.

Summary

A higher proportion of applicants under the age of 21 receive acceptances compared to other age groups; mature applicants sometimes appear to be at a disadvantage. At the same time, the past decade has seen a definite shift in the age pattern of medical students, so that about one in five students accepted into medical degrees is now aged 21 or over. This suggests that medical schools may be adopting a more favourable attitude towards older applicants. This changing demography of medical schools may be due partly to the effect of graduate-entry programmes, new medical schools and access courses, all of which have helped to reduce barriers to medical school faced by older students. There are several perceived advantages of admitting mature students to medical school, such as a better developed communications skills and capacity to deal with others. There is little conclusive research, however, on the differences in outcome between older and more traditional students. Mature and graduate students still face problems in entering medicine, including financial barriers.

Questions for discussion

- Why is the acceptance rate of applicants aged under 21 higher than in any other age group?
- What is the optimal age range for entry to medical school?
- Should the UK increase the number of graduate-entry students?
- Why are all medical schools not offering graduate entry and widening access courses?

A medical student in his 40s shares his experiences of mature entry to medicine.

I was a professor of Physics but I reached a point when I felt I had done all the physics I wanted. I wanted to move on and learn about new areas of life. I decided medicine provided this, as well as providing the challenge and vocation that might justify throwing away a settled life as an academic – and living for five years on reduced income. I don't have any regrets.

Coming from an academic background it was quite easy to become a student. I was worried about the amount of material we have to learn but that proved not too taxing. I thought it would be easy to put the knowledge into practice but I think I have gone through the same difficulties that my younger colleagues have in the clinical years. In the first year I could see a big difference between myself and the 18-year-olds on the course in approach and study skills but by the end of the five years they had matured to such an extent that I felt no different from them.

I think there should be an upper limit – it is a vocational course training doctors for the future. I would put the upper limit at something like 45 to 50. Gone are the days when people could retire at 55 and most people will be working until they are 70. Most people who enjoy their career want to work, so someone starting at 50 can expect to contribute 15 years to the profession, which is more than some who start in their 20s and leave the profession. I am looking forward to being a doctor for 26 years... I was only a Physicist for 15... and yet I contributed more than most in those 15 years.

What can older people bring to the profession? Well there is the old cliché of more life experience. But I think one thing they bring is a fresh outlook. Having worked in other fields they know what is possible. Someone coming straight from school comes to a profession full of people who have never known anything but medicine and the NHS.

Section 4: Ethnicity

The UK medical profession is notable for its ethnic diversity, and recent research has highlighted the vital contribution of Black and ethnic minority physicians to the NHS.^{77, 78} In 2008, for example, 40 per cent of medical and dental staff (of known ethnic origin) working for the NHS in English hospital and community health services were from ethnic minority backgrounds and 60 per cent were White. Of the 40 per cent categorised as from an ethnic minority, 28 per cent were Asian.⁷⁹ To some extent, this reflects the historical dependence of the NHS on overseas-trained physicians. It is also a result of the strong representation of ethnic minority students in UK medical schools – in 2008, 29 per cent of students offered a place at medical school were from ethnic minority backgrounds. Challenges remain in preventing discrimination and ensuring equality of opportunity for ethnic minority students. These are highlighted in the discussion below.

Application and acceptance to medical school by ethnicity

In general, minority ethnic groups are strongly represented in UK medical schools and in the medical workforce. The strong representation of non-White applicants to medical schools – in 2008, 36 per cent of applicants and 28 per cent of acceptances were non-White students (see **table 5**) – is in part due to a strong tradition of and high esteem for medical careers in particular minority ethnic groups, especially those from Asian backgrounds.

To provide context, the ethnic composition of the UK population in 2001 was 92.1 per cent White and 7.9 per cent minority ethnic groups. In the latter group 4 per cent of the population was Asian or Asian-British, 2 per cent was Black or Black-British, 1.2 per cent were of mixed ethnicity, 0.4 per cent of the population were classified as Chinese and 0.4 per cent as 'other'. It should be noted that minority ethnic groups have a younger age structure than the White population, reflecting past immigration and fertility patterns.⁸⁰ In the younger age groups that dominate medical school applications, the proportion of ethnic minorities in the general population is therefore higher.

Medicine attracts a higher proportion of ethnic minorities than the general university population. The predecessor of UCAS, UCCA, only started collecting routine data on the ethnic origin of medicine applicants in 1989. Before this date, the proportion of ethnic minority applications and acceptances to medicine can be roughly estimated by indexing non-European surnames. These estimates indicate that the proportion of ethnic minority students applying to medicine increased from 11.2 per cent in 1981 to 22.9 per cent in 1986.⁵⁵ This is a much lower proportion than the 36 per cent of applicants received from minority ethnic groups in 2008.

Table 5 – Percentage of UK applicants and accepted applicants to medical school by ethnic origin 2003-08

Ethnic origin		Year					
		2003	2004	2005	2006	2007	2008
Asian-Bangladeshi	Applicants	1.5	1.4	1.5	1.4	1.4	1.6
	Accepted applicants	1.0	1.2	0.9	0.9	1.0	1.0
Asian-Chinese	Applicants	2.1	2.2	2.1	2.4	2.1	2.1
	Accepted applicants	2.0	2.2	2.0	2.5	2.4	2.0
Asian-Indian	Applicants	8.7	9.5	9.4	9.6	9.3	8.8
	Accepted applicants	8.6	8.3	9.1	9.1	9.3	8.1
Asian-Other	Applicants	4.6	4.5	4.6	5.0	5.0	5.2
Asian background	Accepted applicants	4.0	3.7	3.9	3.9	4.2	4.0
Asian-Pakistani	Applicants	5.9	6.1	6.2	6.5	5.9	5.8
	Accepted applicants	4.3	4.0	4.4	4.2	3.5	4.0
Black-African	Applicants	3.7	4.2	4.9	4.7	4.5	5.1
	Accepted applicants	2.1	2.0	2.5	2.1	2.1	2.5
Black-Caribbean	Applicants	0.6	0.7	0.7	0.6	0.6	0.7
	Accepted applicants	0.3	0.3	0.4	0.3	0.4	0.5
Black-Other	Applicants	0.3	0.2	0.3	0.3	0.3	0.2
Black background	Accepted applicants	0.2	0.2	0.1	0.1	0.1	0.1
Mixed-Other mixed background	Applicants	1.1	1.2	1.3	1.2	1.4	1.5
	Accepted applicants	0.9	0.9	1.1	1.1	1.1	1.4
Mixed-White and Asian	Applicants	1.6	1.5	1.6	1.7	1.8	1.7
	Accepted applicants	1.7	1.5	1.6	1.9	1.9	1.8
Mixed-White and Black African	Applicants	0.3	0.3	0.3	0.3	0.4	0.3
	Accepted applicants	0.3	0.3	0.2	0.2	0.4	0.2
Mixed-White and Black Caribbean	Applicants	0.2	0.3	0.3	0.3	0.4	0.3
	Accepted applicants	0.1	0.2	0.3	0.3	0.3	0.2
Other ethnic background	Applicants	1.6	2.1	2.4	2.5	2.5	2.3
	Accepted applicants	1.3	1.6	1.8	1.9	1.9	1.7
Unknown	Applicants	2.5	2.7	2.2	1.9	2.0	2.2
	Accepted applicants	1.5	1.8	1.4	2.0	1.8	1.9
White	Applicants	65.2	63.1	62.2	61.5	62.4	62.0
	Accepted applicants	71.7	71.9	70.4	69.5	69.6	70.5

Source: UCAS 2009

Figure 7 – UK applicants to medical school by ethnic origin 2003-08

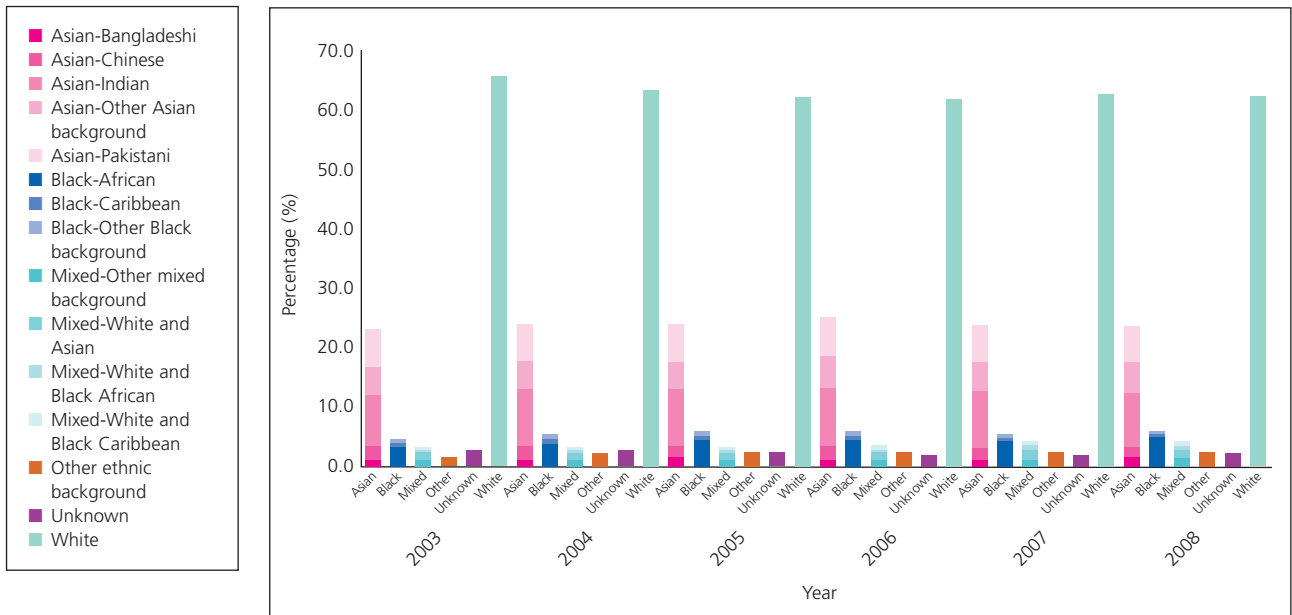
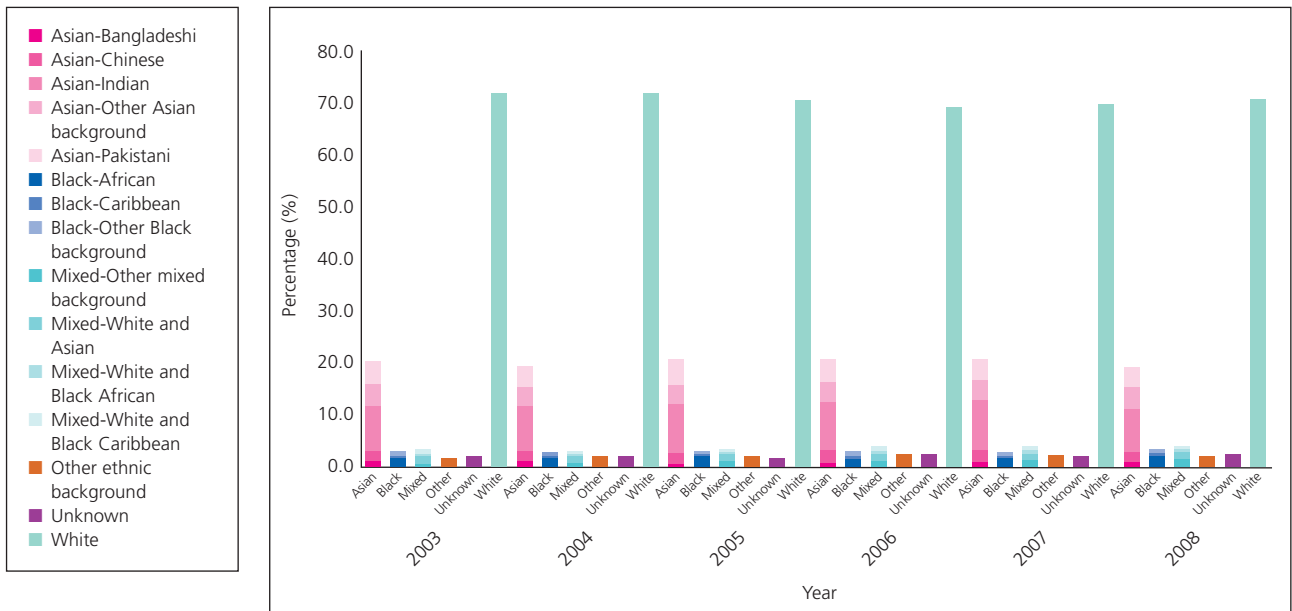


Figure 8 – UK accepted applicants to medical school by ethnic origin 2003-08



The proportion of ethnic minority students entering medical education appears to have been relatively stable over the past six years, with the proportions of applications and acceptances from White and Asian students remaining similar.

Table 5 and **figures 7** and **8** show a detailed breakdown of applications and acceptance to medical school by ethnic origin between 2003 and 2008. Asian students represent a high proportion of applicants and accepted applicants to medical school. In 2008, Asian students made up 24 per cent of applicants and 19 per cent of accepted applicants. Within this group, students of Indian origin are particularly well represented, making up 8 per cent of accepted applicants. Pakistani-origin students made up 4 per cent of accepted applicants, while those of Bangladeshi-origin made up 1 per cent and the remaining 6 per cent of students were from other Asian backgrounds. This high proportion of Asian applicants and students is likely to reflect the fact that a large number of Asian doctors work in the NHS as a result of the immigration policies of the 1960s and 1970s. As with White students in medicine, choice of profession among Asian groups is likely in part to reflect the views of their parents, many of who may be medical personnel.⁸¹

In the case of Black students, it is notable that although the proportion of applicants has increased over this period, the proportion of acceptances has not. In 2008, 6 per cent of applicants were Black but only 3 per cent of accepted applicants were Black.

It should be noted that the proportion of minority ethnic students differs between medical schools. In many cases this is a geographical issue. In the UK, minority ethnic groups are concentrated in England and in large urban centres. The 2001 census showed that 45 per cent of minority ethnic groups lived in London.⁸⁰ Since many students choose to study close to home, the proportion of ethnic minority students at any medical school will vary somewhat according to the ethnic composition of the surrounding area. This is also reflected in the medical workforce: in the London area in 2004, 51 per cent of specialist registrars were from minority ethnic backgrounds.⁸²

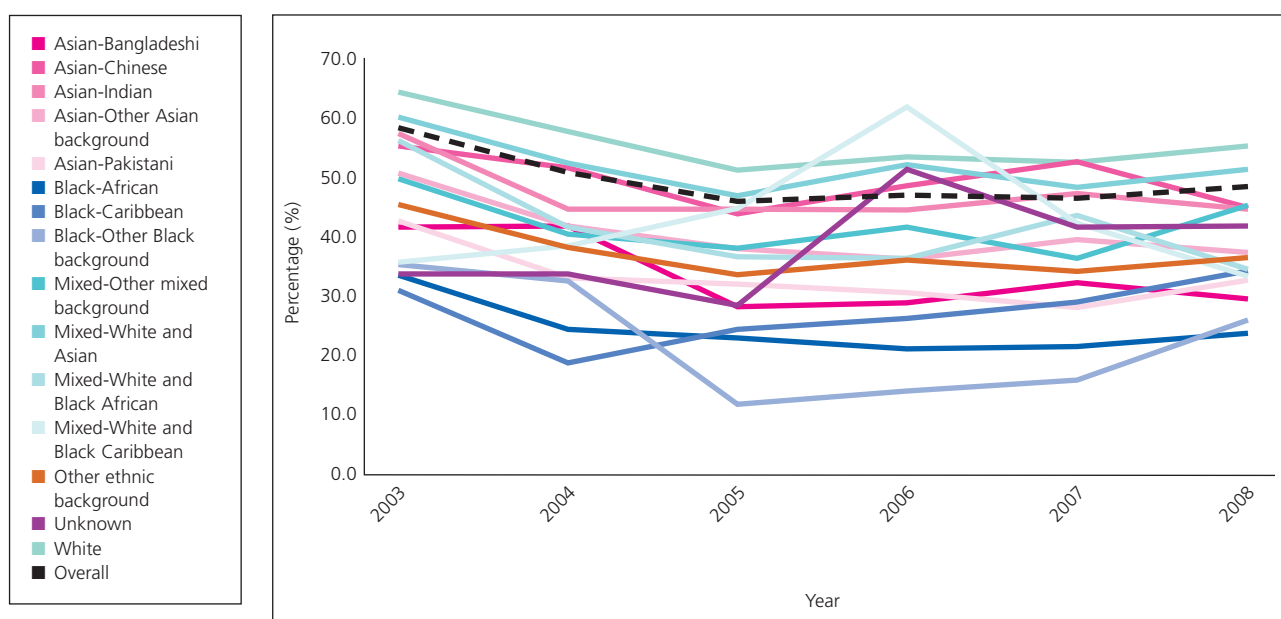
It is clear that overall, minority ethnic students are over-represented in medical schools in comparison with the UK population. It is important to recognise, however, that both application and acceptance rates differ widely between ethnic groups.

Table 6 – Acceptance rates of UK applicants to medical school by ethnic origin 2003-08

Ethnic origin	Acceptance rates (%)					
	2003	2004	2005	2006	2007	2008
Asian-Bangladeshi	41	41	28	29	32	30
Asian-Chinese	56	51	44	48	52	45
Asian-Indian	57	45	44	44	47	44
Asian-Other Asian background	50	42	38	36	40	37
Asian-Pakistani	43	33	32	30	28	33
Black-African	34	25	23	21	21	24
Black-Caribbean	31	19	25	26	29	34
Black-Other Black background	35	32	12	14	16	26
Mixed-Other mixed background	50	40	38	41	36	45
Mixed-White and Asian	60	52	47	52	48	51
Mixed-White and Black African	56	42	37	36	43	35
Mixed-White and Black Caribbean	36	38	44	62	42	33
Other ethnic background	45	38	34	36	34	36
Unknown	34	34	28	51	42	41
White	64	58	51	53	52	55
Overall acceptance rates	58	51	45	47	46	48

Source: UCAS 2009

Figure 9 – UK acceptance rates to medical school by ethnic origin 2003-08



The acceptance rate is the percentage of applicants who were accepted into medical school within that ethnic origin group. The acceptance rates vary considerably for the different ethnic origin groups, with some groups showing significant variations due to the small numbers of applicants in the data set. **Table 6** and **Figure 9** highlight the difference between White or mixed-White applicants whose acceptance rate is consistently above the overall acceptance rate in contrast to the Black applicants whose acceptance rate is consistently significantly lower than the overall acceptance rate. In 2008, for example, the acceptance rate for Black-African applicants was 24 per cent compared to 55 per cent for White applicants.

It is interesting to note also that the proportion of applicants and accepted applicants from each minority ethnic group varies considerably by gender. In 2007:

- the gender gap was highest for Black applicants, with 65 per cent of the accepted group being female
- the gender gap was lowest for Asian applicants, with 49 per cent of the accepted group being female
- among White accepted students, 59 per cent were female.¹⁷

Does the ethnicity of medical students matter?

The extent to which medical students should reflect the ethnic diversity of society is controversial. In some countries, views on this have influenced selection and admissions policies. The USA has a history of using affirmative action policies to increase the diversity of medical school students. This has led to a better representation of African-American and other underrepresented ethnic minority groups in medical schools. Research in the USA has shown that students who attended racially diverse medical schools felt better prepared to care for patients from racial and ethnic groups other than their own when compared to students at less diverse schools. It was concluded that student diversity in medical education is a key component in creating a physician workforce that can best meet the needs of an increasingly diverse population and could be a tool in helping to end disparities in health and health care.⁸³

A medical student comments on ethnic minorities in the NHS.

People in the community might have a better perception of the NHS if they see ethnic minorities are represented appropriately among doctors and other staff.

It has been suggested that those who believe that ethnic proportionality is important in medical schools, may offer three arguments:

- that a diverse student body enriches the university experience (this type of argument is often used in the UK to underpin widening access initiatives)
- that minority ethnic communities are better served by minority ethnic professionals – ie a balanced representation of minority groups among doctors would serve to improve the health service
- that ethnic minorities are needed in the profession to reflect the population at large.⁸¹

Each of these arguments is controversial. Although a good case can be made for each, there are also problems with these approaches. Esmail has drawn attention to these:

- the use of race as a proxy for diversity seems to confuse race with both ethnicity and culture, and fails to take into account differences within ethnic groups
- allowing the racial views of patients to dictate the choice of doctor could be very dangerous, not least to minority doctors. This argument also risks 'pigeon-holing' ethnic minorities and potentially denying opportunities to minority ethnic physicians in the most sought-after specialties in medicine. It is also highly questionable whether high-quality healthcare to minorities is dependent on minority physicians
- there is no neat relationship between discrimination and under-representation as not all under-represented groups are defined by racial categories. In the UK context, a strict proportionality argument could harm the chances of students from minority groups with high application rates.⁸¹

Since there is no strong argument for strict proportionality in medicine, the most important consideration must be that of equality of opportunity, both before application and during the selection process.

Acceptance rates to medical school by ethnic origin

Among ethnic groups, there are important differences in application and acceptances to medicine. Applicants of White and mixed White and Asian origin had the highest acceptance rates, 55 and 51 per cent respectively in 2008. In contrast, students from Black backgrounds had relatively low acceptance rates, 24 per cent for Black-African and 26 per cent for Black-Other Black background in 2008 (see **table 6** and **figure 9**).

These differential acceptance rates raise the question of whether some ethnic groups experience discrimination during the selection process. This is a difficult question to answer. For many years no data were collected on the ethnicity of medical students. When UCCA did begin collecting statistics from 1989, it did not have any strategy to analyse and report these, except in the aggregate, and no attempt was made to analyse the reasons for the apparent disadvantage faced by minority ethnic applicants.⁸¹ Possible explanations for the differential acceptance rate between ethnic groups are discussed in the following paragraphs.

A London medical school student of Asian descent discusses her perceptions of ethnicity at medical school.

Medical students in London are a mixed bunch on the surface of things – there are many brown faces among the white for example. But this does not mean that students from many different ethnic backgrounds are represented in medical school. While there are many Asian students there are just a handful of Afro-Caribbean students and when I think about it, very few East Asian/Far-East students. I don't think this is a reflection of racism in medical school admissions procedures but is more representative of the numbers of people of certain ethnicities applying to medical school in the first place.

I have never experienced racism in medical school (but definitely sexism!). There is a general medical student-ism that every student experiences when they enter hospitals, but on the whole no one is picked on or excluded because of their race. I feel that most of our generation of medical students are very open-minded and that only the much older generations have a trace of racism in them. But I must admit that in medical school there is sometimes an invisible divide between groups of students based on their ethnicity, these groups fuelled by societies exclusively for people of a certain ethnicity. Personally I think societies like this are more likely to separate people according to race. Mind you, for international students one would argue that they need societies like this, as it is harder for them to integrate. Does this mean that medical school, as a whole, is not welcoming to international students? I don't know. It seems to be a vicious circle.

Ethnicity, educational attainment and aspirations

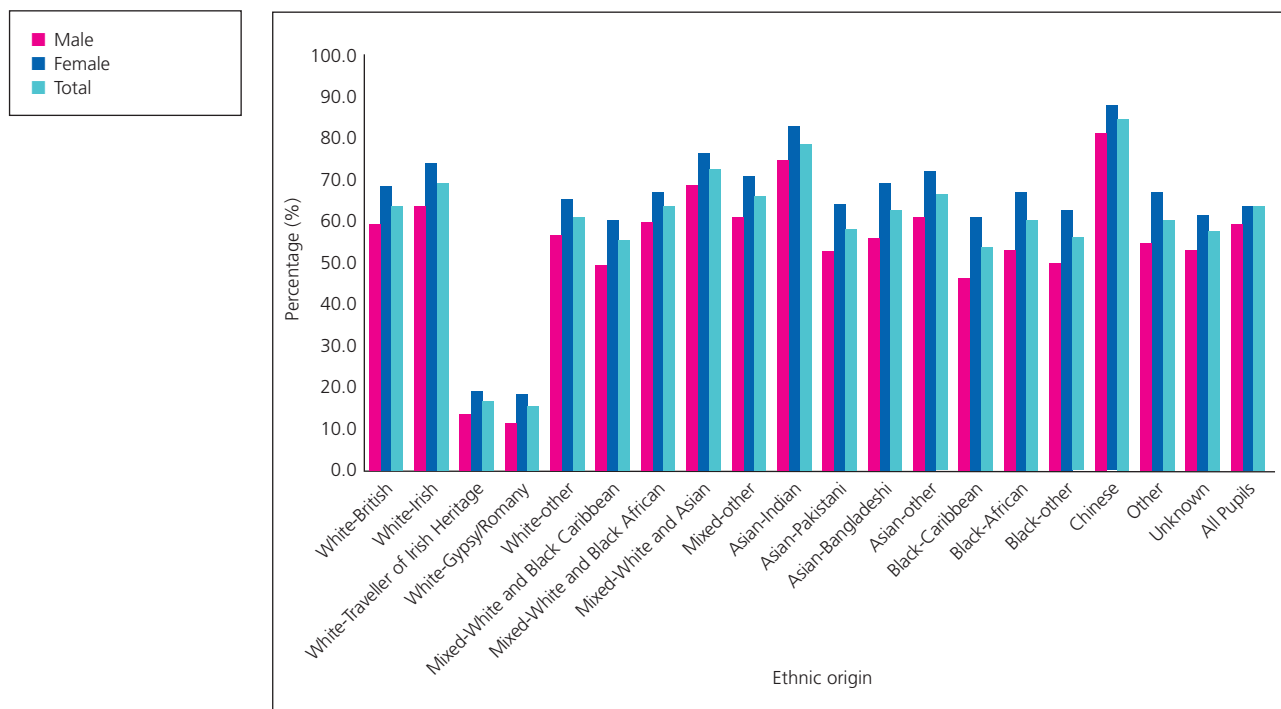
Differences in acceptance rates between minority ethnic groups can partly be explained by prior educational attainment. Data from England in 2008 for example, shows that pupils from some ethnic groups – in particular Chinese and Indian origin students – are more likely to achieve five or more A*-C grades at GCSE level (see **table 7** and **figure 10**). It is important to note that this graph includes data from all GSCE pupils, and not just medical school applicants or acceptances and is therefore only indicative of a possible reason for the differences in application and acceptances statistics by ethnic origin.

Table 7 – Percentage of pupils achieving five or more A* to C grades at GCSE by gender and ethnicity

Ethnic origin	Percentage achieving 5 or more A* to C grades at GCSE by gender		
	Male	Female	Total
White-British	59.5	68.2	63.8
White-Irish	63.8	74.1	69.0
White-Traveller of Irish Heritage	14.0	19.7	17.4
White-Gypsy/Romany	12.0	19.0	15.7
White-other	56.6	65.1	65.1
Mixed-White and Black Caribbean	49.7	60.6	60.6
Mixed-White and Black African	59.7	67.0	67.0
Mixed-White and Asian	68.4	76.0	76.0
Mixed-other	60.9	70.8	70.8
Asian-Indian	74.3	82.7	82.7
Asian-Pakistani	52.7	64.0	64.0
Asian-Bangladeshi	56.0	68.9	68.9
Asian-other	61.1	71.9	71.9
Black-Caribbean	46.9	60.8	60.8
Black-African	53.5	66.8	66.8
Black-other	49.9	62.5	62.5
Chinese	80.9	87.6	87.6
Other	55.0	67.1	67.1
Unknown	53.4	61.7	61.7
All Pupils	59.1	63.5	63.5

Source: Department for Children, Schools and Families (www.dcsf.gov.uk/)

Figure 10 – Percentage of pupils achieving five or more A*-C grades at GCSE or equivalent by gender and ethnic group in England 2008



Recent research has also concentrated on differences between White and non-White students in regard to educational aspirations. While there is clearly a need to examine differential acceptance rates by particular minority ethnic groups rather than using the blanket category of non-White students, this research does suggest some of the reasons behind the much higher acceptance rate for White candidates as compared to every other ethnic minority group except for Chinese students: in 2008, White candidates had an acceptance rate into medical school of 55 per cent, whereas the rate for non-White candidates was 37 per cent.

Students from non-White ethnic backgrounds generally have higher educational aspirations than White students. It has been shown that students from a non-White background are overwhelmingly more likely to enter higher education than White students with the same level of attainment.^{84, 85} At the secondary level, non-White students are more likely to take A-levels than White students at all levels of GCSE stage attainment.⁸⁶ They are also more likely to take the more difficult science and chemistry A-levels at every level of GCSE attainment.⁸⁶ The fact that a higher proportion of lower-performing non-White students are more likely to take more difficult A-levels goes some way to explain the lower mean performance at A-level of non-White students. It is perhaps unsurprising in light of this that non-White applicants to medical school have a lower mean A-level attainment than White applicants.⁸⁶ It is likely that aspirational differences among ethnic groups explain the lower A-level qualifications of non-White applicants to medical school, and thus, to a degree, their lower acceptance rates.⁸⁶

It has also been found that parental and familial influences are stronger on the higher education decisions of non-White students, particularly those from Asian backgrounds.⁸⁵ Such influences act not only on the decision to enter higher education, but also on the course of study, and non-White families are likely to place particularly high esteem on professional careers such as law and medicine. Candidates with lower levels of attainment from ethnic minority backgrounds may be more likely to apply than White candidates achieving at a similar level.

Ethnicity and social class

It is clear that there are complex interactions between ethnicity and social class, and it is likely that socio-economic disadvantage explains some of the differences in application to medical school among ethnic groups. One study examined ethnic variations in the social background of successful applicants to undergraduate medical and dental schools in the UK for the academic years 1994/95 to 1996/97.⁸⁷ There were significant inter-ethnic differences observed in the social background of students entering medicine. Black, Indian and White applicants generally shared a similar socio-economic profile, with fewer students from lower social class backgrounds. Recent research has investigated the representation of ethnic minorities by socio-economic background compared to their representation in the population as a whole.⁸⁸ White and Black pupils from social class I were 100 times more likely to be accepted at medical school than those from classes IV or V.^e Asian pupils from social class I were six to 10 times more likely to gain a place than those from classes IV or V. While some have questioned the methodology of this study – due to the limitations of UCAS data on class and its comparability with datasets on the wider population¹⁸ – it does provide a broad indication of the complex differences by social class inside different ethnic groups applying to medical school.

e This research refers to the system of social class classification in which class I is composed of professional occupations, class II of managerial and technical or intermediate occupations, class III of skilled manual and non-manual occupations, class IV of partly skilled occupations and class V of unskilled occupations. This classification system is different to the classification system used by UCAS described on page 11.

Figure 11 – UK accepted applicants to medical school by ethnic origin and socio-economic group 2003

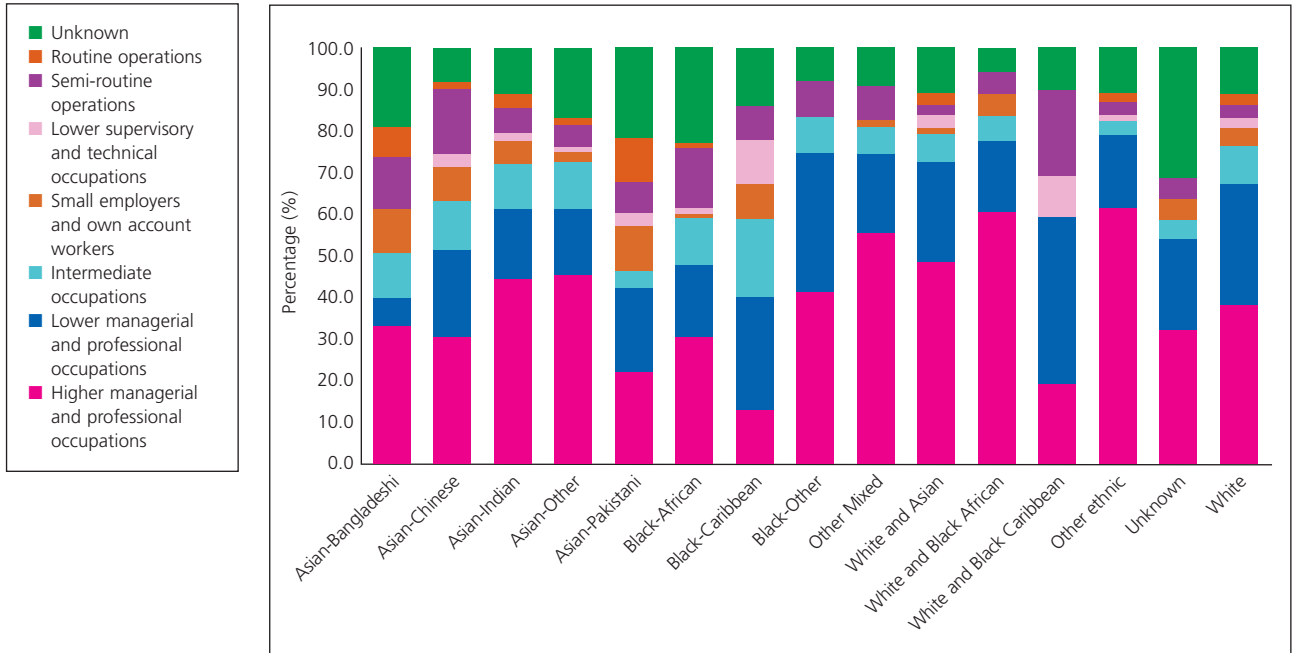
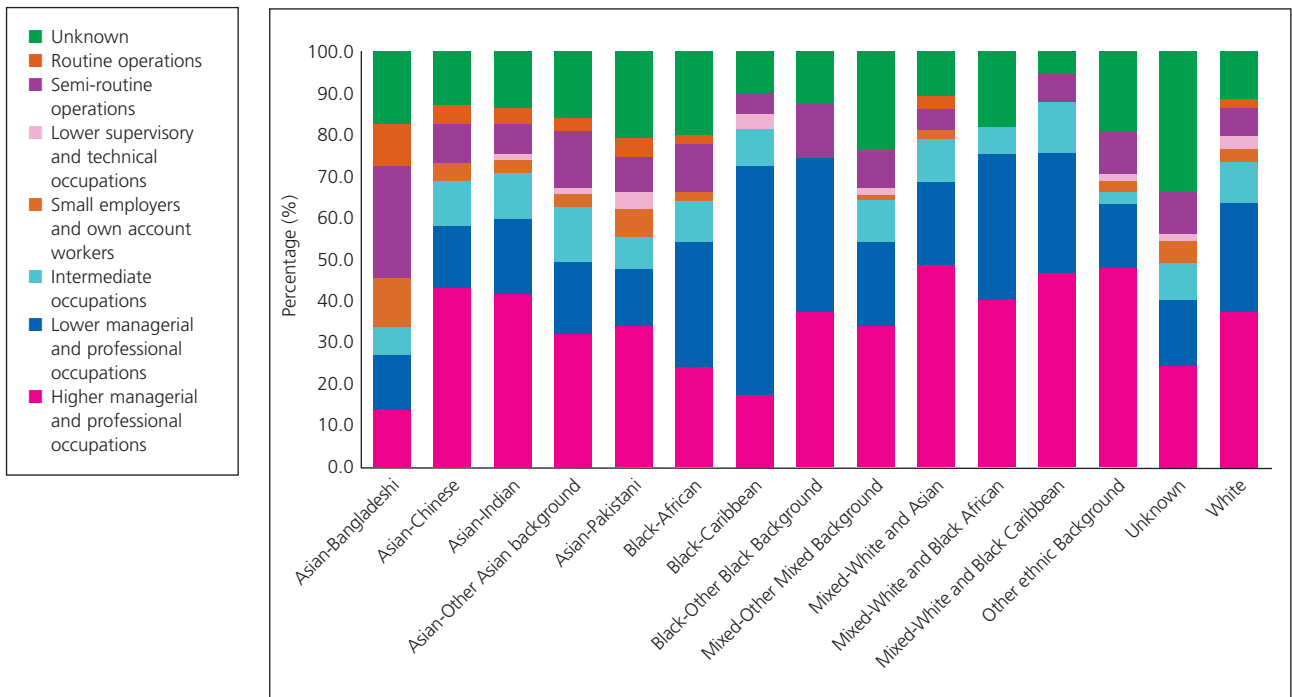


Figure 12 – UK accepted applicants to medical school by ethnic origin and socio-economic group 2008



Figures 11 and **12** show acceptances to medical school in 2003 and 2008 by ethnic origin and socio-economic group. They suggest that the socio-economic profile of medical students differs within ethnic groups. It must be noted that the validity of any analysis of these data is severely restricted by the proportion of applicants (17% in 2003 and 2008) who did not give their socio-economic status on their UCAS form. It appears that White students (both applicants and acceptances) may be more likely to come from the three higher socio-economic groups, while there may be a higher proportion of Asian-Bangladeshi students from the bottom four groups.

It is clear that researchers should consider the representation of minority ethnic groups at medical school in the context of social class issues. If social class does lie at the heart of ethnic differences in access to medicine, strategies to improve access to higher education based upon minority ethnic group alone will be inappropriate.⁸⁷

Disadvantage in selection and discrimination

It has been suggested that the overall 'over-representation' of ethnic minority groups in medical education has led to ambivalence and denial that discrimination could be involved in selection.⁸¹ This view, however, stems from an over-simplistic interpretation of the data. While ethnic minority students as an overarching group are well represented, there are differences in acceptance rates for particular ethnic groups. Many have argued that, in the context of the demography of medical schools, the main issue is that many students continue to be denied equal opportunities in accessing the career of their choice.⁸¹

Admissions rates for minority ethnic groups differ among medical schools. This suggests that structural factors in the process of selection at some medical schools are the cause, rather than (or in addition to) intrinsic differences between groups of applicants.⁸⁹ In 1986, Collier and Burke published one of the first studies claiming to find evidence of racial discrimination in selection to medical schools.⁹⁰ This study analysed the surnames of final-year students in London medical schools between 1982 and 1984. It found that in 1984 there was a five-fold difference in the percentage of non-European students sitting finals at different medical schools. These differences were interpreted as demonstrating that racial discrimination was operating during selection. They were thought unlikely to result from chance alone since differences tended to be consistent from year to year.

Collier and Burke's research has been followed by a series of studies with similar conclusions. In 1989 a study of applicants to St Mary's Hospital Medical School in London found applicants from ethnic minority groups were significantly disadvantaged, even after taking into account differences in achievement at O and A-level, the date of application, and application after A-levels.⁹¹ A 1995 study of medical school acceptance rates similarly found large differences between White and minority ethnic candidates in some medical schools, even after controlling for A-level grades.⁹² In some medical schools, the data suggested that White candidates were between two and five times more likely to be accepted for a place compared to minority ethnic candidates. This study concluded that a number of medical schools could be accused of discriminatory policies. Another paper, also published in 1995, showed that minority ethnic groups applying to study medicine in

1990 were significantly disadvantaged in nearly half of medical schools.⁹² Even after taking educational and some other predictors into account, applicants from ethnic minority groups were 1.46 times less likely to be accepted. Having a European surname was found to predict acceptance better than ethnic origin itself, implying direct discrimination rather than disadvantage secondary to other possible differences between White and non-White applicants. After taking other significant predictors into account, no significant differences were found in the success rates of Black, Asian and other minority ethnic groups, or between Asian subgroups.⁵⁵

A major research project published in 1998 analysed applications and admissions to medical school in 1996 and 1997.⁸⁹ This found significant evidence that, in some medical schools, non-White applicants were less likely to receive an offer across the whole range of A-level achievement, with a qualitatively similar effect in applicants taking the Scottish Highers. There were only small differences between minority ethnic groups. Interestingly, the interaction between sex and ethnic origin was also found to be significant, as women from minority ethnic groups were found less likely to receive an offer than expected. Overall, only nine medical schools were found not to disadvantage ethnic minority applicants. The study concluded that results at GCSE and predicted A-level grades were unlikely to explain the differences between White and minority ethnic applicants. Assessments of personal attributes were thought to be a possible explanation for the differences in admissions rate but this was not fully explored. Since schools showed different effects of ethnicity, structural differences in the process of selection – rather than intrinsic differences – were thought to be the most likely explanation of differences.⁸⁹ The report of the study was published in conjunction with a statement of aims from the Council of Heads of Medical Schools (CHMS – now called the Medical Schools Council), calling on medical schools to assess their selection procedures to make sure that discrimination was not occurring.⁸¹ Research undertaken in 2008 found that the likelihood of a non-White applicant being offered a place at medical school was lower than for White applicants at all levels of A-level achievement,⁸⁶ suggesting that candidates from minority ethnic backgrounds continue to be disadvantaged in the admissions process. According to this research, admission to medical school remains significantly more difficult for a non-White applicant with the same qualifications as a White applicant.

The proportion of medical school students from minority ethnic backgrounds is considerably higher than that in the UK population. It has been suggested that some medical schools may be trying to restrict the overall numbers of students from ethnic minority groups in an attempt to reflect population distributions in the UK.⁹² Some research suggests for example that minority ethnic disadvantage in selection to medicine is principally due to the fact that estimated A-level grades on application forms are given less weight in minority ethnic candidates.⁵⁵

Legally, direct and indirect discrimination are separate concepts. Direct discrimination hinges solely on an individual's race while indirect discrimination arises from some hurdle in the selection procedures that is more difficult for ethnic minority candidates to clear. Indirect discrimination has often been judged to be a more likely cause of the disadvantage faced by ethnic minority students, perhaps due to the assessment of educational achievement indirectly from estimated grades or from assessing motivational and personality factors indirectly through achievements and experiences with different meanings in different cultural groups.⁸⁹ Much of the previously discussed evidence implies direct discrimination by some medical schools, particularly in the past.

A medical student discusses the difficulty of addressing inappropriate comments.

I've not experienced any discrimination but I have had a few comments thrown at me and at colleagues and I've also heard some terms used that I thought were inappropriate. No action was taken on these because the only time I mentioned them, I was told they could have been completely innocent. So I felt like I was making something out of nothing. I find it's a lot easier to just carry on like you heard nothing.

Ensuring equality of opportunity

The BMA supports efforts to fulfil this duty by attracting students from a wide variety of cultural and social backgrounds into medicine. In some cases, the initiatives used to attract applications from lower socio-economic groups will also reach students in target minority groups. Some medical schools in London are based in areas with large Black populations. Hence any initiatives designed to attract students from local state schools are likely to help attract under-represented ethnic groups. The most important issue is one of equality of opportunity. Medicine should attract and recruit the people best suited to medical practice. Any discrimination in favour of one group of students over another may threaten the quality of the profession.

The BMA has called on medical schools to acknowledge that unintentional discrimination against certain groups can occur. It has suggested that medical schools should closely audit their selection procedures, and amend them accordingly to make sure that such discrimination is eliminated.³⁸ As previously noted, some research suggests that minority ethnic groups are disadvantaged in selection to some universities due to structural elements of the selection process. The Race Relations Act (1976) as amended by the Race Relations (Amendment) Act 2000 imposes on HEIs a statutory general duty to promote racial equality.⁹³ It is important to note that the duty imposed by the Race Relations (Amendment) Act 2000 on public organisations, including HEIs, includes removing discrimination and the possibility of discrimination, and also actively promoting equality of opportunity and good relations between people from different racial groups.^{24, 94, 95} The Medical Schools Council's guidance on admissions states that selection processes for medical students must be transparent and involve procedures that respect obligations under relevant diversity and equality legislation.⁹⁶

It is BMA policy to exclude the applicant's name from the written information considered by medical school short-listing panels.⁶⁷ This is supported by research showing that having a non-European surname predicts disadvantage in medical school admissions better than ethnic origin itself.⁹⁰ Evidence suggests that this approach may not work well in practice. For entry in 1998, Leeds School of Medicine assessed the feasibility of anonymising applications; UCAS forms had all references to name and nationality deleted before the form was scored by admissions tutors for shortlisting. This experiment found that deleting names was a cumbersome process. It also proved to be largely ineffective since admissions tutors were still able to identify ethnic minority of candidates by references to religious activities and certain GCSE subjects such as Asian languages. More thorough editing of the forms to omit these references could disadvantage minority ethnic candidates. Anonymity did not improve the evaluations of candidates with non-European names. The admissions tutors who conducted this experiment in Leeds concluded that anonymous assessment of applications could not be recommended.

Excluding the applicant's name from the application form would seem to have both strengths and weaknesses. There is an argument to go further and to remove all irrelevant information from the application form but this may result in disadvantaging the applicants. Other measures such as training admissions staff and panel interviewers in the duties implied by equality and diversity legislation, may provide better long-term solutions to selection bias.⁹⁷ Significant progress has been made in this respect. A recent survey of 22 medical schools found that 18 schools provided training to their interviewing panel, and that most schools aimed to include interview panellists from different ethnic backgrounds. Improvement may still be needed as only 11 schools in the survey trained the staff responsible for assessing application forms.³¹ As has been suggested, this may be the stage of the admissions process at which ethnic minority candidates are most likely to be disadvantaged, and it is therefore essential that those assessing applications receive appropriate equality and diversity training. It is also crucial that selection statistics are audited by medical schools to ensure that differences in admissions rates between ethnic (or socio-economic or gender) groups are not caused by discriminatory practices. At the moment few medical schools are systematically monitoring their application and admissions statistics and making changes based on the findings.

If, as some research suggests, minority ethnic candidates are disadvantaged due to the weight given to their predicted grades, increased graduate admissions (as discussed on page 34) may also help to make the medical school admissions process more equitable.

Performance at medical school

Students from ethnic minority backgrounds have frequently been found to perform less well overall than White students in both undergraduate and postgraduate medical examinations.^{86, 98-103} This is not exclusive to medicine, students from ethnic minority backgrounds perform less well across the whole of the higher education sector.⁸⁵ In medicine, differences in performance between ethnic groups are regarded as an increasingly important challenge to the discipline of medical education.⁸⁶ Some of this difference can be explained by the fact that White medical students have a higher mean achievement at A-level than non-White students, but prior educational achievement has not been found to account for the full extent of the gap between White and non-White students.⁸⁶ There is therefore a strong imperative for medical schools to ensure that examinations and assessments do not contain any source of potential bias that might lead to disadvantage.⁹⁸

Research suggests the importance of accounting for different communication styles in clinical examinations. A study of objective structured clinical examinations (OSCE) found that a small group of male students from ethnic minorities used particularly poorly rated communication styles. Although there were no obvious cultural and linguistic differences between White and ethnic minority students, those from ethnic minorities were more likely to have pronunciation, word stress and intonation influenced by their heritage language. The study found that some of the ethnic minority students used a medical model of consultation rather than a more social one preferred by examiners. It concluded that institutions might not be aware of hidden processes that reward some students and penalise others in final examinations.⁹⁸

In 2006 the BMA surveyed the medical royal colleges, and found that there was a generally poor level of monitoring of equality and diversity issues, which made it difficult for the colleges to defend themselves against the perception of racial discrimination in postgraduate examinations. The report of this survey also highlighted a particular need for effective equality and diversity training for interviewers.¹⁰⁴ A study published in 2007 examined performance in the Membership of the Royal Colleges of Physicians (MRCP) examinations and showed that White candidates performed better than other ethnic groups in all three parts of the examination. The authors concluded that the cause of the difference was most likely to be multifactorial, as it could not be readily explained in terms of previous educational experience or differential performance on particular parts of the examination. Analysis of the ethnicity of the examiners and candidates showed that there was only a significant interaction between candidate and examiner ethnicity in the assessment of communication skills and this was limited to assessments involving two non-White examiners and a non-White candidate. The authors suggested that this may be due to the style of discourse being more consistent, resulting in an opportunity for inadvertent positive bias in these limited circumstances. They concluded that overall it was unlikely that there was any conscious or unconscious bias on the part of examiners and that further research is required to elucidate the reasons for the differential performance.^{102, 105}

It is important for medical schools to ensure that examiners of their undergraduate students are appropriately trained, and that they collect equality and diversity data so that they can monitor assessment outcomes and investigate any marked differences in performance.

Differences in examination results are not confined to clinical aspects of assessment. Non-White students also perform less well in written or summative examinations. The reasons for this require further research. A recent qualitative research project examining the under-achievement of UK medical students from ethnic minority backgrounds found that teachers and students both held strong stereotypes about the 'typical' Asian student, who was thought to be too dependent on books, less skilled at communicating with patients, too quiet during clinical teaching and less motivated due to parental influence on the choice of a degree in medicine. The authors suggested that Asian students may be more likely than White students to be viewed through the lens of negative stereotypes, which may mean weaker or less positive relationships with teachers, and thus poorer outcomes.¹⁰⁶ Although the authors concluded that this suggested a need to improve student relationships with clinical teachers in particular, such stereotypes may also influence students' experiences of non-clinical aspects of their medical education. Another qualitative research project found that non-White students may face more conflict between the demands of families and those of their academic studies, may encounter dissonance between their own image and that of the 'typical' medical student, and may be disadvantaged by a lack of positive role models among academic staff.¹⁰⁷

Summary

Medicine attracts a higher proportion of ethnic minority students when compared to the general university population. This proportion seems to have remained relatively stable in recent years. There are large differences in the acceptance rates among the different ethnic groups. This could be due to factors including educational differences, social class and direct or indirect discrimination. In the case of ethnicity it appears to be especially important that medical schools' selection and assessment processes are evaluated and made as transparent, fair and objective as possible. It is also crucial to ensure that discrimination does not reduce the chances of success at medical school for ethnic minority students.

Questions for discussion

- What are the best ways of raising expectations among pupils from under-represented minority ethnic groups to encourage them to apply for medical school?
- How can the ethnicity of medical school applicants and acceptances be monitored most robustly?
- What are the most important steps that should be taken to ensure equality of opportunity in medical schools?
- Why do some minority ethnic groups (eg Black-African) have a significantly lower acceptance rate compared to applicants from other ethnic origins?

An Afro-Caribbean student describes her medical school experience.

I find it hard when doctors ask if your parents are from a medical background. This I suppose is fine if they want to find out why you came into medicine. However my parents aren't medical, so my answer is no, to which they often ask, 'So what do they do?' My parents aren't professionals. I can't understand how that is ever relevant unless they plan to pre-judge and label you. These situations give me a taste of the hierarchy and old boys club, that because of my lack of contacts and correct family name I will find extremely hard to enter. Occasionally when on the wards I have been mistaken for a nurse. This I know doesn't happen to many of my colleagues. It worries me that patients look at me and don't consider I could be a student doctor. What is so different about me that I don't fit a medical student image? The vast majority of the time I don't feel like my race has had any effect on the education I've received or the way I've been treated by medical staff. I work as hard as any other student and know I deserve to be at medical school. With all this though, racism is subtle, hidden and difficult to substantiate. There have been occasions when I wonder why I have had a seemingly worse experience with a member of staff or patient than one of my fellow students. There are 101 reasons why this is often the case though and I have to put it to the back of my mind, and ensure I give no cause to others to perpetuate any discrimination.

Section 5: Gender

This section discusses the changing gender profile of medical school students and the reasons for this change, the role of gender in medical education and the implications of the changing gender composition of the profession for the future workforce.

The changing gender profile of medical schools

The London School of Medicine for Women (later the Royal Free), founded in 1874, was the first UK medical school to accept women. Other medical schools in the UK did not become co-educational until 1947, three years after the Goodenough Committee had recommended that up to one-fifth of medical students should be women.¹⁰⁸ Forty-five years ago, medical careers and medical schools were both heavily male dominated. In 1963, when UCCA first collected data on university admissions, fewer than 34 per cent of applicants were women and women constituted only 29 per cent of acceptances to medical school.¹⁰⁹ The proportion of women students in the 1963/64 intake varied greatly between medical schools in Great Britain, from 8.5 per cent in Cambridge to about 38 per cent in Sheffield and 61 per cent at the Royal Free.⁶

Over the past four decades, the proportion of women in medicine and at medical school has increased dramatically; it has been predicted that women doctors will be in the majority between 2017 and 2022.¹¹⁰ The percentage of female medical school applicants increased to 35 per cent in 1977,⁹⁰ to over 40 per cent in 1980, to around 50 per cent in 1990 and to over 55 per cent in 2000.¹¹¹

Table 8 – Percentage of applicants and accepted applicants to all UK medical schools by gender and acceptance rates by gender 2003-08

	2003	2004	2005	2006	2007	2008
Applicants (%)						
Female applicants	59.0	57.0	55.7	55.6	56.3	55.7
Male applicants	41.0	43.0	44.3	44.4	43.7	44.3
Acceptances (%)						
Female acceptances	61.6	59.9	58.2	58.8	56.1	56.0
Male acceptances	38.4	40.1	41.8	41.2	43.9	44.0
Acceptance rate (%)						
Female	60.9	53.4	47.5	49.8	46.4	48.4
Male	54.6	47.5	42.9	43.7	46.6	47.8

Source: UCAS 2009

Figure 13 – UK applicants and accepted applicants to medical school by gender 2003-08

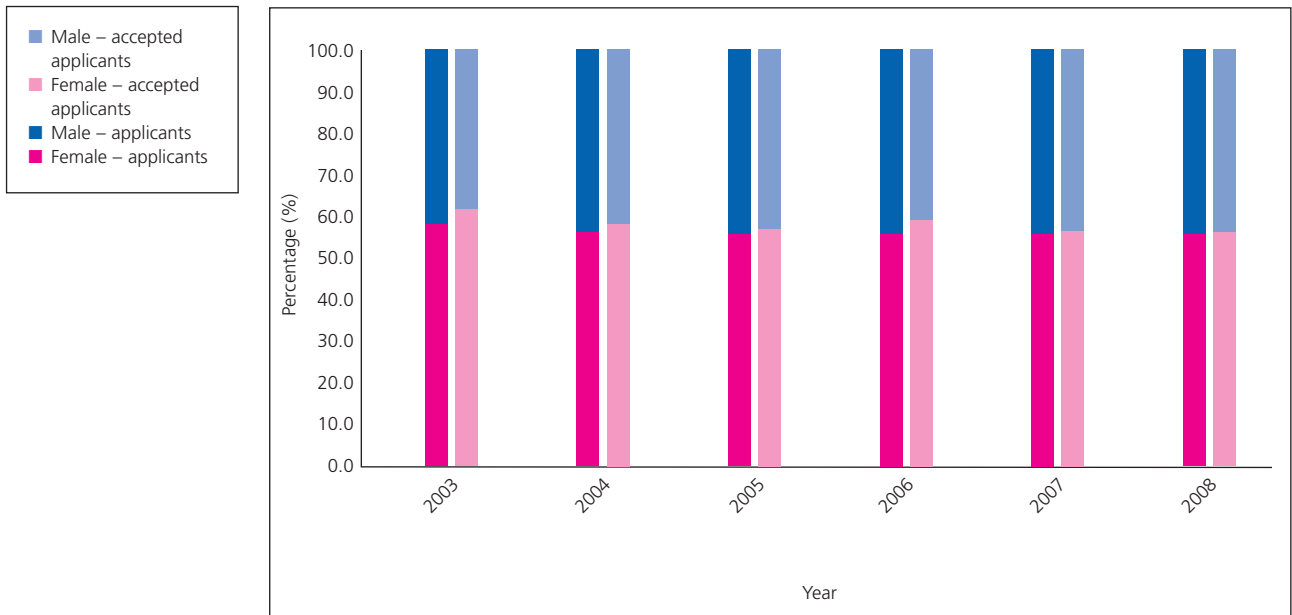


Figure 14 – UK acceptance rates to medical school by gender 2003-08

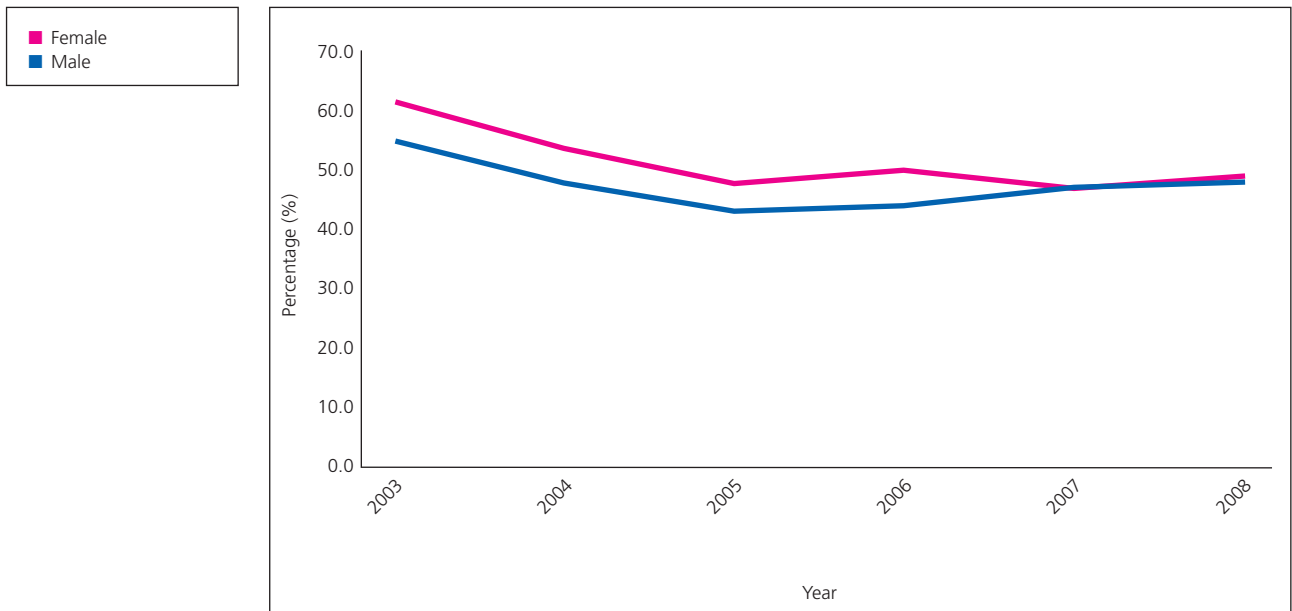


Table 8 and **figure 13** show data on applicants and accepted applicants to medical school by gender between 2003 and 2008. In 1996, a higher proportion of female applicants were already being accepted into medical school, but the numbers applying were about even. In ensuing years, however, women have come to outnumber men as applicants and as accepted applicants. As shown in **figure 14** the height of this trend may have been reached. In 2003, 59 per cent of applicants and 62 per cent of accepted applicants were women, which was greater than the rates for the general university population (53 and 52 per cent respectively). In 2008, 56 per cent of both applicants and accepted applicants were women, which was comparable to the rates for the general university population at 55 per cent for both applicants and accepted applicants.

Understanding the changing gender ratio in UK medical schools

The increasing proportion of female medical school entrants may have been partly determined by the modernisation of the university admissions process. In particular, the increase in female students over the past 40 years may have been influenced by the introduction of fairer selection processes, which reduced discrimination against female applicants.¹¹² There is evidence that discrimination against women candidates has existed in the past in selection to medical school. At the time of the 1968 report of the Royal Commission on Medical Education, medical schools were widely believed to apply more stringent selection criteria to women than to men.⁶ A study published in 1986 analysing the names of final-year London medical students from 1982 to 1984 also found large differences in the proportion of female students between medical schools. Although the mean percentage of women per year was 38, the London Hospital Medical College had only 30 per cent women while University College had 51 per cent. This study concluded that sexual discrimination was operating during selection for medical education at London colleges.⁹⁰ The data indicated that discrimination occurred both against and in favour of women.

Over the long term the increase in women applying to medical school is likely to have been influenced by changing social norms including economic factors, changing family composition and, perhaps, the feminist movement and equality legislation. This hypothesis is supported by the fact that the increasing proportion of female medical students partly reflects the trend seen in degree courses in general.¹¹³

In recent years there have been a higher proportion of women applicants, which has translated into a small majority of women medical students. The increasing proportion of women applicants appears to have stabilised in recent years at around 56 per cent, however the number of acceptances has decreased from 62 per cent in 2003 to 56 per cent in 2008. The reasons for the differences in gender composition of medical schools are unclear. Medicine seems to have become an increasingly attractive career option for women. There are probably several reasons for this. It could follow partly from the subject choices made by girls in school. In the 1960s, many girls did not take the relevant science subjects in the sixth form. It was also suggested that some teachers discouraged female pupils from applying to medicine.⁶ Although 30 years ago, women did not often study for the necessary science qualifications to enter medicine, this situation has now changed. The introduction of the National Curriculum in 1988 led to an increase in the number of girls studying science up to the age of 16. In 1987, about 26 per cent of girls and 34 per cent of

boys achieved a pass in a science subject equivalent to a GCSE A–C grade. In 1992, the percentage of girls and boys achieving a grade A–C in a science subject was roughly equal and by 1994, 41 per cent of girls achieved an A–C grade in a science subject against 40 per cent of boys.¹¹⁴ Female students now perform as well, or better, than male students in every science examination between age 11 and 18,¹¹⁵ a fact that may be partly attributable to the design of curricula.¹¹⁶ More female than male students now take A-level biology. If current trends continue, this could happen in chemistry as well.¹¹⁵ Girls are more likely than boys to score the top two grades in every science subject, and are more likely to achieve a pass.¹¹⁷

Women may be increasingly attracted to medicine by the changing nature of the profession. It is possible that the changes in medical school curricula towards problem-based learning, continuous assessment and the acquisition of a wider set of skills (for example, communication skills) are appealing to some women. Medical careers are also changing. Importantly, the proportion of female general practitioners (GPs) is rising year on year. With the employment of salaried GPs becoming increasingly common, part-time practice is more feasible, and women are entering general practice in increasing numbers. In 2008, 44 per cent of English GPs were women. Between 2004 and 2008, the average annual growth in female GPs was four per cent.¹¹⁸ If this trend continues then the most commonly encountered face of medicine, the potential applicants' local doctor, will be increasingly a female role model.

Policymakers' attention is increasingly being drawn to the underachievement of boys in the UK education system. It has been found that girls are outperforming boys in educational attainment at the secondary level in every social grade – so that middle-class girls are outperforming middle-class boys, and working-class girls are outperforming working-class boys.¹¹⁹ The problem, however, is particularly acute for White working-class boys. The Equalities and Human Rights Commission (EHRC) recently commented that the educational under-attainment of White working-class boys represents a compelling social problem. While around 66 per cent of Chinese heritage children and around 60 per cent Indian heritage children routinely get five good GCSEs, only 15 per cent of White boys from lower socio-economic groups do.¹²⁰ Following on from 2008 GCSE results, it was reported that throughout their education, White working class boys are now the lowest achievers apart from a small group of Traveller pupils.¹²¹

In medicine, the under-representation of White men has been the subject of comment in recent years. White males represented 28 per cent of accepted applicants to medical school in 2007, while they represented 44 per cent of the UK population. Just four per cent of all accepted applicants were White males from the lowest four socio-economic groups. It has been suggested that White working-class young men often view participation in higher education as incompatible with notions of working class masculinity.¹¹⁹ Qualitative research among high-achieving pupils at disadvantaged schools into perceptions of medical school and medical careers found that White working-class boys often expressed anti-academic identities, and were less likely to express understanding of or enthusiasm for a medical career.³⁴ Those working on the Extended Medical Degree Programme at King's College London have found White and Black Caribbean young men are the most difficult demographic groups to attract onto their programme.⁴⁶ In the future, access

to medicine initiatives may need to focus more substantially on these demographic groups. Some have also called for research into the general under-representation of White men at medical school.¹²²

Selection processes for medical school are also worth closer examination in the context of gender. Analysis of applications and admissions data from 1996 and 1997 indicated that male applicants experienced disadvantage during selection for some medical schools. McManus found significant evidence that female applicants were at an advantage when applying to Cambridge, Imperial, King's, Leeds, Liverpool, Newcastle, Nottingham, Queen Mary and Westfield, Royal Free and Sheffield medical schools. At no university did female applicants experience significant disadvantage during selection.⁸⁹

A medical graduate describes their experience of female applicants in interviews.

I've sat in on some interview panels and the female applicants in all cases were just better than the male ones – they were confident, intelligent, spoke knowledgeably about current medical issues, the university they were applying to, their plans for the future etc. They just came across a lot better than the males.

There have been anecdotal suggestions that some medical schools may be trying to restrict the overall numbers of female students entering medical school, in order to prevent gender imbalance in the medical workforce of the future. This may be reflected in the small decrease in the proportion of accepted applicants who are female since 2003 (62% of accepted applicants were female in 2003 compared to 56% in 2008). There was also a small decrease in the percentage of female applicants between 2003 and 2008 (see **figures 13 and 14**).

The law in the UK is clear that selection or rejection of a candidate must be based entirely on the student's merits. It should be noted that the Gender Equality Duty came into force in April 2007. This new legislation requires HEIs to work to eliminate unlawful sex discrimination and harassment, and to promote equality of opportunity between men and women. An important requirement of this is to prepare and publish a gender equality scheme, which shows how duties will be met and which specifies gender equality objectives. Institutions are required to gather information on how their policies and practices affect gender equality.¹²³ This implies a need to ensure equality of opportunity for men and women in both admissions processes and in medical education.

Gender and the experience of medical school

In the context of the changing gender ratio of medical students, it is important to consider the role played by gender in students' experiences of medical school. A study in 1986 of medical students qualifying in 1966, 1976 and 1981 found considerable evidence that women medical students were treated differently by staff at all levels in medical school. Women reported sexist remarks, 'prehistoric' attitudes and a refusal to take women medical students seriously or to rate them highly. There was evidence that women were often alienated from hospital medicine at medical school, particularly the acute specialties.¹²⁴ There is evidence that sexism against women still exists in medical education, though its effects are probably less pronounced than they were a few decades ago when there were fewer women in medical school. Discrimination against women has at times arisen in students' relationships with teaching staff, sometimes including instances of overt sexism.¹²⁵

Recent research has also pointed to more subtle and indirect discrimination, in the form of the perpetuation of gender stereotypes associated with different medical career routes. It has been found that women medical students are likely to have already mentally prepared to sacrifice high professional aspirations for their future families,^{126, 127} while men tacitly assume that their partner will be the one to care for their children.¹²⁶ It has also been found that medical students are likely to associate caring and sympathetic qualities with female doctors, and the physical strength and competitiveness associated with surgery with male doctors.¹⁰⁷ A subtle 'hidden curriculum' may reinforce these stereotypes and guide women towards part-time careers in specialties perceived as more likely to offer a good work-life balance, or which are associated with certain personality traits such as empathy and compassion. Women students are commonly reported to suffer from a lack of positive female role models at medical school, and a lack of positive career advice to balance these kinds of gender stereotypes.¹²⁶⁻¹³⁰ Better career advice and mentoring schemes such as the successful Women in Surgery^f initiative, are likely to help address these problems.¹³¹

The lack of positive role models and career advice for women is likely to be at least partly due to the under-representation of women in clinical academia. In 2006, women made up only 21 per cent of clinical academics, and just 11 per cent of professorial staff.¹³⁰ A study reviewing workforce data within academic medicine for 2004 and 2005 in England found that only 1 in 10 medical clinical professors were women, and that at the onset of the study period, six medical schools employed no female professors.¹³² The authors of the study concluded that the large variations between schools suggest that some workforce practices may be detrimental to women's academic careers. The European Commission recommends that women should make up at least 40 per cent of all clinical academic staff.¹³³ The BMA has called for an end to the under-representation of women in this field and to discrimination against academic women doctors in relation to pay and conditions.¹³³

f Women in Surgery is a national organisation working to promote surgery as a career for women and to enable women who have chosen a career in surgery to realise their professional goals. Further information can be found at www.rcseng.ac.uk/career/wins

Gender issues in medical education are not confined to women's experiences. Sex discrimination against men has been reported in the form of unequal learning opportunities, such as reduced access to patients when training in obstetrics and gynaecology.¹³⁴ There are also widely reported findings that women are outperforming men at medical school, in both clinical and summative or written examinations^{99-101, 135} and in MRCP examinations.¹⁰² Although differences are often slight, there is a need to understand what factors are causing the under-achievement of male students.

Female and male medical students comment on gender issues in medical training.

I'm a guy – so Obstetrics and Gynaecology is out of my reach – even though it's an excellent specialty.

I think in medical school, male and female students are treated equally but on clinical placements this is not the case. I have met a couple of surgeons who wouldn't really speak to me but addressed everything to my male placement buddy. Similarly, male students find it much tougher in places like genito-urinary medicine clinics or on obstetrics and gynaecology placements.

Implications of the gender ratio of medical students for the medical workforce

The 2006 Annual Report of the Chief Medical Officer for England, Sir Liam Donaldson, outlines the difficulties women doctors face in terms of career progression and opportunity of access to some branches of medicine. The report questions why women are not better represented in senior positions in the medical workforce:

'Today the problem is not access to medical school but rather how we ensure the female medical workforce is able to fulfil its potential once in employment'¹³¹

The consequences of the increasing proportion of female medical students have been the subject of heated debate in recent years. In 2004, the then President of the Royal College of Physicians, Dame Carol Black, brought the issue of the increasing role of women in medicine into the spotlight with a front-page interview in *The Independent* newspaper which warned that the 'feminisation' of medicine may threaten the profession's status and influence.¹³⁶ An editorial in the *British Medical Journal* cited the continuing unequal status of women in society.¹³⁷ In addition, 2008 saw the publication and citation of research claiming the lower productivity of women consultants,¹³⁸ the greater statistical likelihood of male consultants experiencing disciplinary procedures,¹⁰⁵ and the greater likelihood of women doctors being more caring and better communicators.^{105, 128} It is clear that some anxiety has been generated about the growing female proportion of the medical workforce.

Underlying this debate is the need to confront the issue of adapting medical education and the NHS in general to suit a workforce with a higher proportion of women doctors, who are likely to seek more part-time working and career breaks than their male counterparts. It has been claimed that at 15 years post graduation, 60 per cent of women doctors are likely to be working full-time compared with 80 per cent of men.¹³¹ Among the medical graduates of 1977, almost half the women worked part-time in the NHS 18 years after qualifying.¹³⁹ A study in 2001 of female trainees found that 92 per cent expressed an interest in part-time work.¹⁴⁰ In general practice in 2003 the proportion of male principals working full-time was over 90 per cent, compared to 53 per cent of female GP principals.¹⁴¹ In 2009, a study comparing the career progression in male and female NHS doctors found that 'within general practice, 97 per cent of men, 99 per cent of women, who had always worked full-time throughout their career, and 87 per cent of all women were principals.' The study concluded that 'women not progressing as far and as fast as men was, generally, a reflection of not having always worked full-time rather than their gender. The findings suggest that women do not generally encounter direct discrimination. The possibility that indirect discrimination, such as lack of opportunities for part-time work, has influenced choice of specialty cannot be ruled out.'¹⁴²

There is a clear need to understand and to plan for women's part-time working intentions. In the next few years it is likely that there will be more doctors than available positions, so some women doctors' preference for part-time work may in fact represent an opportunity for effective, creative workforce planning.¹²⁸

A medical student comments on female doctors and work force planning.

I think that there will come a time when there are so many women doctors all planning and having families at similar times that there could be an issue with staff shortages, particularly if the number of female entrants to medical school continues to rise.

Policy options have been suggested to address concerns regarding the future human resource capacity of the NHS. Some have argued that there is a case for biasing entry to medicine towards men. This argument has been justified chiefly on the grounds of women's likely future preference for flexible working.¹⁴³ This is founded on a questionable basis. It is possible that in the future flexible training and practice will appeal increasingly to men, as well as to women, so that discussion of 'female' oriented policy will become increasingly obsolete.¹⁴⁴ More importantly rationing medical school places by gender is illegal under UK legislation as it would be discrimination against female entrants to medical school on the grounds of gender.¹⁴⁵

It is interesting to note that the option of restricting the number of female medical students was considered in 1968 by the Royal Commission on Medical Education. Many of the sentiments expressed by this publication remain relevant today:

'As long as there are shortages both of doctors and of places in medical schools a case can be made for giving some preference to male candidates for admission. There is, as might be expected, a higher rate of "wastage" of women doctors from the profession... the shortage of doctors might be eased to some extent if a limit were imposed on the proportion of women admitted to undergraduate medical schools, provided there were enough male applicants suitable to fill all the remaining places available. In our view, however, the main criterion for admission to a university medical course should be the ability of the applicant to profit from the course and to become a good doctor... We think the imposition of an arbitrary upper limit on the number of women admitted to the medical course would imply that obstacles which at present prevent full use of the capacities of women doctors were being accepted as insurmountable: the adoption of such a defeatist attitude is, in our view, unnecessary and would have most unfortunate consequences for medicine.'⁶

Gender representation across the medical specialties

In addition to concerns about part-time working and career breaks, a potential problem with the current gender balance in medical schools is that women doctors are unevenly represented across different medical specialties. There is some evidence that the situation is improving in this regard. Figures for 2007 show that growth in the number of women consultant physicians is outpacing average workforce growth. Women currently represent 25 per cent of the consultant physician workforce as a whole, but 45 per cent of specialty registrars (SpRs). In the under-34 age group, 57 per cent of the consultant workforce is female.¹⁴⁶

The representation of women across different medical specialties remains uneven, with some referring to medicine as gender-segregated in this respect. Research has found the channelling of women into certain specialties and away from others to be the result of both direct and indirect discrimination.¹²⁷ In clinical genetics 80 per cent of SpRs are women, as are 76 per cent in dermatology, 75 per cent in genito-urinary medicine and 85 per cent in palliative medicine. In comparison, in general surgery in England, just 8 per cent of consultants and 26 per cent of SpRs are women.⁷⁹ Only 20 per cent of SpRs in cardiology are women, as are 27 per cent in gastroenterology, 21 per cent in hepatology, 25 per cent in medical ophthalmology and 27 per cent in nuclear medicine.¹⁴⁷ In addition to this 'horizontal' segregation, it has also been found that women are subject to 'vertical' segregation, with less chance of promotion to senior career grades.^{3, 127}

It is possible that particularly male-dominated specialties will struggle to meet demand if they do not find a way to attract young female doctors into their ranks, thus putting at risk the future health of the UK's population.^{127, 130} The changing gender composition of the medical profession makes it imperative for the NHS to create a working environment across all specialties that suits women doctors' needs. There is already evidence from the UK and abroad that talented women doctors are not taking up specialty clinical or academic careers due to perceived gender barriers.^{127, 141, 146, 148, 149} Given the increasing proportion of doctors who are women, this will become an increasingly damaging cost. The BMA has called for trainers in all specialties to make positive efforts to attract women students.

It has been suggested that the NHS must pay urgent attention to the provision of flexible, high quality childcare and of easily accessible and funded part-time training options.¹²⁸ It is widely acknowledged that, while the NHS was an early leader in flexible working and the provision of childcare, neither of these measures have yet been developed to a stage where they can address the fundamental barriers to women's progression in their medical careers.¹³¹ Flexible training (defined by European law as part-time training which involves participation in medical activities for at least half the time of a full-time trainee),¹⁵⁰ has particular potential to improve the retention of female doctors.¹⁵¹ It is possible that the benefits of family friendly work practices designed to increase the retention of women doctors and their entrance into certain specialties would benefit retention and morale across the workforce as a whole. There is some evidence of a growing preference among male doctors for a better work-life balance.¹⁵² Some concern still exists, however, that introducing more flexibility to medical careers may result in a less stable and less skilled workforce, with adverse consequences for clinical care.¹⁵¹

Comments from a male medical student on career progression.

I don't think my gender would stop me getting any jobs I wanted but culturally and traditionally, if I wanted a family, I would have to assume a role which might make me rethink my career path... Having children would definitely delay career progression. I would be attracted towards flexible or part-time working.

Aside from NHS interventions, the recently implemented European working time directive (EWTD) now means that it is a legal requirement that doctors (including junior doctors) cannot exceed a 48-hour working week,⁹ thus possibly reducing the barriers to women entering some specialties. The EWTD has been described as the most important recent change to benefit women doctors.¹⁴¹ Others have also identified the need for a widespread cultural change in the medical profession, moving away from the traditional career path that encourages full-time working, sacrifice of personal life and little space for flexibility.^{127, 141}

g Individuals can choose to opt out. The 48-hour maximum working week was fully introduced in August 2009. The requirement to comply with the EWTD may in exceptional cases be extended, remaining at 52 hours for another three years, with 48 hours then being implemented in 2012, eg 24-hour critical care units.

Summary

The number of female applicants and acceptances to medical schools has increased over time. From 2004 the trend of an increasing proportion of women applying to medical school seems to have stabilised. Although female students accepted to medical school are still in the majority (56% in 2008), there has been a slight reduction in the proportion of women accepted since 2004. Long-term social trends have contributed to the strong representation of women in UK medical schools. Other factors influencing this changing gender profile may include curricula and examination changes in schools and medical education, and the changing nature of medical careers. Changing attitudes towards medical careers among men have not yet been adequately explored but this too may be a factor in the increasing proportion of female medical students. In terms of the experience of medical education it seems that both men and women may experience discrimination on account of their gender. Particularly important is the slight underachievement of male students in medical examinations, and the suggestion that students experience a 'hidden curriculum', which perpetuates gender stereotypes associated with certain medical career paths. The role of gender in medical education remains an important topic for future research. Recent years have seen concern about the implications of a higher proportion of women joining the medical workforce. There is a need to ensure that academia and all specialties address flexible training and childcare provision so that they attract the most talented students and doctors.

Questions for discussion

- What are the main reasons for the consistently higher proportion of women applicants and medical students and lower proportion of male applicants and medical students?
- How can more students be attracted to apply to medical school from hard-to-reach demographic groups such as White young men and Black Caribbean young men?
- What are the future workforce and health policy implications of the increasing proportion of women medical students?
- What can be done to remove the barriers to women's career progression across all specialties and in academic medicine?
- How can we address the under-representation of women in leadership roles?
- How can the NHS be more family-friendly so that men and women can combine their career with looking after their children or dependent relatives?
- How can doctors who want to take a career break be facilitated to return back to the workforce?

Section 6: Disability

Disabled doctors and disabled medical students are an important resource for the medical profession. Their experience of living with an impairment and of associated discrimination means they are uniquely equipped to respond to the healthcare needs of disabled people and to foster an inclusive environment.¹⁵³⁻¹⁵⁵ This section discusses the representation of disabled people in medical education and the experiences of disabled people entering or wishing to enter the profession.

Defining disability

The Disability Discrimination Act 1995 (DDA) as amended in 2005 provides that 'a person has a disability if he or she has a physical or mental impairment, which has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities'.¹⁵⁶ It is important to recognise that the population of disabled people covered by this definition is highly diverse. Impairments differ in their causes, nature, timing and implications, and as a result it cannot be assumed that all disabled people encounter similar barriers and difficulties.

In defining disability, the BMA's 2007 report, *Disability equality in the medical profession*, has emphasised the importance of doctors understanding the social model of disability.¹⁵³ The social model of disability recognises that an individual is disabled by society through attitudinal, environmental and organisational barriers and not as an inevitable result of their impairment or medical condition.

Disability and the UK medical profession

Disabled students have long attended UK medical schools.¹⁵⁷ Until the mid 1990s there was little recognition of the need to collect data or to research the needs of disabled medical students and doctors.¹⁵⁸ In 1996 the BMA established a working group, about half of whom were themselves disabled, to consider the issues faced by disabled medical students and doctors. This group produced one of the first reports in 1997 on the issue, *Meeting the needs of doctors with disabilities*.¹⁵⁹ This report highlighted the absence of data on disability and the profession, and also drew attention to some of the obstacles encountered by disabled doctors and students working in the NHS. These included direct discrimination, hostility from colleagues and a lack of support, help and advice. Around the time this report was published, the enactment of the DDA 1995 made it imperative for the profession to address the issue of disability equality.

There have since been a number of studies indicating that healthcare professionals often fail to recognise and address disability concerns.¹⁶⁰⁻¹⁶² Disabled doctors continue to face a range of difficulties similar to those identified in the BMA's 1997 report, including inflexible working patterns, poor contingency cover and unsympathetic colleagues.^{3, 153} Some also experience direct discrimination, particularly in recruitment.³ It has been suggested that the medical profession is insufficiently supportive and enabling to those who do not conform to the perceived normative standard, with a professional culture that works against disability equality.^{3, 153} It is widely acknowledged that disability equality in the medical profession has failed to receive the same emphasis as race and gender equality, and thus relatively little progress has been made.¹⁵³ It is likely that attitudinal barriers in the medical profession contribute to the general lack of data on

disabled doctors and medical students as it is thought that disabled doctors may be unwilling to identify themselves due to a perception that this could hinder their career progression.^{3, 153}

Recently there has been a stronger focus on encouraging disabled students into medicine and on addressing some of the historical barriers. In 2004 for example, the DH report *Sharing the challenge, sharing the benefits – equality and diversity in the medical workforce* identified improving access for disabled people to medical education as one of the key challenges to providing equality and diversity in the medical workforce.¹⁶³ This report was superseded in 2005 by *Equal values: equal outcomes* which set out a number of commitments for NHS Employers and other stakeholders in relation to disabled access.¹⁶⁴ In 2008, the GMC and the DIUS, in cooperation with 11 UK medical schools, published *Gateways to the professions: advising medical schools: encouraging disabled students*¹⁶⁵ which provides comprehensive advice for medical schools on encouraging disabled students. The proactive and positive focus of the new guidance and its emphasis on the involvement of disabled medical students in its preparation is welcome. It is to be hoped that the guidance will help break down the barriers experienced by disabled students in medical school admissions in the past. The GMC does not have any legal powers over admissions, as these belong to universities, but as the curriculum setting authority, its advice carries considerable weight. In September 2009, the GMC revised its undergraduate medical standards document, *Tomorrow's Doctors (2003)* which now includes a much stronger emphasis on disability equality.¹⁴

A medical student discusses support for students with disability at medical school.

I think that medical schools try to ensure that they adhere to equality and diversity legislation. I do not believe that they discriminate against gender or ethnicity. We have a wide diversity within the medical school and I believe that they support those with needs such as dyslexia. There is a certain requirement of an ability to be fit to practice that clearly does impact on this but I think this is only right due to the nature of work of a qualified doctor.

Disability equality legislation

Universities have duties under the DDA 1995, which was amended and extended in 2005 to introduce the Disability Equality Duty (DED). The DED requires public authorities to promote equality of opportunity for disabled people.¹⁶⁵

Table 9 gives a broad indication of the legal responsibilities held by medical schools as part of universities or by schools themselves where they are legally separate from the university.^h

^h Please note that the information provided here is for general guidance only, does not constitute legal advice, and should not be relied upon as a substitute for such advice.

Table 9 – The four fundamental duties of medical schools to disabled people

Duty	Implications
Avoiding disability discrimination	The following types of discrimination must be avoided: direct discrimination, disability-related discrimination, the failure to make reasonable adjustments, victimisation, and harassment. The DED underpins responses to these types of discrimination.
The anticipatory duty	There is a duty to ensure as far as possible that the need for reasonable adjustments for disabled people has been anticipated in advance. This covers checking policies, practices, facilities and procedures as well as providing auxiliary aids and services such as ramps, hearing loops and accessible print formats.
Reasonable adjustments	There is a duty to make reasonable adjustments to policies, practices, facilities and procedures to meet the individual requirements of disabled people. University disability officers should have full information on the rapidly developing technology available to assist disabled people (known as assistive technology).
The Disability Equality Duty	The duty to promote equality and to eliminate discrimination

Source: *Gateways to the professions: advising medical schools: encouraging disabled students* (GMC 2008)

Universities also have a duty as public authorities to publish a Disability Equality Scheme every three years, setting out the institutional vision, goals and progress on the elimination of disability discrimination. These schemes imply a requirement for institutions to collect and monitor data on the representation, support and educational outcomes of disabled students.¹⁵⁵ The DDA 1995 (as amended) also requires the publication by universities of disability statements outlining the provisions made for disabled people.¹⁵⁶

Disabled students in applications and acceptances to UK medical schools

There is considerable difficulty in judging the extent to which disabled students may be under-represented at medical school, given the acknowledged unreliability of the data collected. Current statistics suggest that seven per cent of students in higher education overall are disabled; compared to about 19 per cent of people of working age in the UK.¹⁵⁵ In general, the number of students declaring an impairment is rising and the increase in declared disabled students is also much higher than the general increase in student numbers (68% compared to 14%).¹⁵⁵ This might be due to a change in the disclosure rate, rather than an increase in the number of disabled students.¹⁵⁵ In 2007, the proportion of medical school applicants and accepted applicants disclosing an impairment was just three per cent which is lower than the six per cent for all applicants and accepted applicants on all degree courses (see **table 10**).¹⁷

In recent years, UCAS has taken action to increase students' willingness to disclose disability. They have provided guidance to students emphasising the importance and benefits of disclosure. From 2006, it has provided all applicants with additional information on disability, including case studies of successful disabled students, details of disability officers at universities, and details of the Disabled Students' Allowance.¹⁵³

Table 10 shows the numbers of medical students who declared particular impairments between 2002 and 2007. Learning difficulties such as dyslexia are consistently the most common impairments, but a small number of students with other impairments apply and are accepted into medical school each year.

Table 10 – Percentage of UK applicants and accepted applicants to medical school by disability 2003-07

Disability	2003		2004		2005		2006		2007	
	Applicants	Accepted Applicants	Applicants	Accepted Applicants	Applicants	Accepted Applicants	Applicants	Accepted Applicants	Applicants	Accepted Applicants
1 None or none disclosed	97.0	97.0	97.3	97.5	97.2	97.2	97.1	97.1	96.7	96.7
2 Any form of disability	2.9	2.8	2.6	2.5	2.8	2.8	2.9	2.9	3.3	3.3
3 A specific learning difficulty (eg dyslexia)	1.3	1.3	1.1	1.2	1.3	1.3	1.6	1.6	1.7	1.7
4 Blind or partially sighted	~	~	~	~	~	~	~	~	~	~
5 Deaf or hard of hearing	~	~	~	~	~	~	~	~	~	~
6 Uses a wheelchair or has mobility difficulties	~	~	~	~	~	~	~	~	~	~
7 Has mental health difficulties	~	~	~	~	~	~	~	~	~	~
8 Has a disability that cannot be seen, eg diabetes, epilepsy or a heart condition	0.7	0.6	0.7	0.5	0.6	0.6	0.5	0.5	0.5	0.5
9 Has Autistic Spectrum Disorder/Asperger Syndrome	~	~	~	~	~	~	~	~	~	~
10 Has two or more of the conditions listed in 3-9	~	~	~	~	~	~	~	~	~	~
11 Has a disability, special need or medical condition that is not listed in 3-9	0.5	~	0.5	~	0.5	0.5	0.6	0.6	0.6	0.6

Source: UCAS 2009 ~ Indicates less than half a per cent

Disability equality in admissions to medical school

The new GMC guidance highlights the need for medical schools to encourage disabled students to apply and to assist them appropriately through the applications process. Medical schools' responsibilities start with the provision of course information that makes it clear that disabled students will be welcomed as applicants and that contains positive stories and images of disabled people. Such information should be accessible, for example being offered in both visual and audible formats and produced in different font sizes.¹⁵⁵ The provision of adequate information to disabled students has long been regarded as a problem. The BMA has in the past encouraged medical schools and the GMC to develop innovative approaches to demonstrate the ways in which disabled students can meet the requirements of medical education, and to ensure that they are aware of the adjustments that can be made to allow them to study medicine.^{3, 153} The QAA has also emphasised the need for accessibility, clarity and effective communication with prospective disabled students.¹⁶⁶ The 2002 report produced by the Higher Education Academy, *Pushing the boat out*, identified continuing inadequacies in the provision of disability-related information to medical school applicants (although this report was acknowledged as having several limitations, including that it only assessed the information available on the internet and that there was minimal contact with staff in medical schools and universities).¹⁶⁷ The follow-up survey in 2003, *The sequel to pushing the boat out* found there had been considerable improvement since the original study in the number of medical schools providing adequate disability-related information, although negative attitudes to the admission of disabled students to medical schools persisted in a minority of cases.¹⁶⁸ It is hoped that the introduction of the DED in 2005 – with its requirement that universities proactively encourage disabled applicants – and the new GMC guidance will promote continuing improvement in communications between universities and disabled students.

The issue of disclosure of impairments is also crucial to consider in the admissions process, as encouraging disclosure allows appropriate adjustments to be made and ensures that the sector can track its work in encouraging disability equality. The GMC advises that schools should actively encourage applicants to disclose their impairments, while appropriately accommodating requests for confidentiality.¹⁵⁵ Similarly, the Medical Schools Council strongly encourages candidates to disclose an impairment to allow appropriate support to be in place by the time the student joins a medical school.¹⁶⁹ In encouraging applicants to be open about their impairments, it is important to emphasise that the disclosure will not influence evaluations of academic performance and personal qualities, but will be used to help assess physical and mental ability to practise as a doctor.^{155, 169} The competencies believed to constitute this ability should be transparent and openly publicised.¹⁵⁵

Addressing the issue of under-reporting of impairments by applicants, medical students and doctors is, however, complex, and it is likely to require a fundamental shift to a culture that encourages openness about impairment and views disability positively.¹⁵³ It is encouraging in this light that recent qualitative research with doctors, medical students and the general public (disabled and non-disabled participants were included in each group) found increasingly positive attitudes to the admission of disabled students to study medicine.¹⁷⁰

Tests and interviews for entry to medical school should be carefully reviewed to ensure they are non-discriminatory and are accessible to disabled applicants. Where interviews are held, reasonable adjustments requested by applicants should be made. This process should focus on the adjustment, not on the impairment, and where possible adjustments should be anticipated in advance and be able to be implemented quickly.^{155, 169} The interview panel should avoid questions about applicants' impairments, as the panel will rarely be qualified to judge their impact on capacity to study medicine, and as such questions may unfairly reduce the time spent asking the candidate the standard interview questions.¹⁵⁵ Conversations about the impact of an impairment and the required adjustments should be had with a university's disabilities officer or with occupational health and safety staff, not with an interview panel.

It is permissible for a disabled applicant to be rejected for an offer of a place at medical school if it is judged that they would not be capable of meeting the required competencies, even after all reasonable adjustments have been made. This is likely to be problematic particularly as interview panels are unlikely to be able confidently to assess what a candidate could achieve with reasonable adjustments. Judging barriers to disabled students' achievement is complex and difficult, and it may be the case that students themselves will have the best understanding of their capabilities.¹⁵⁵

Disability equality in medical education

The BMA has called for medical schools to foster greater awareness of and provision for disability equality during medical training.³ While disability is a recognised theme in the undergraduate medical curriculum, a review of the teaching of disability and rehabilitation in the UK found it to be patchy and sporadic and that it rarely had clearly defined aims and objectives.¹⁷¹ There have been a number of innovative projects aiming to develop curricula, which engage students in the subject of disability, find ways of exploring the social model of disability and challenge students' perceptions of disabled people.¹⁷² A common theme of such initiatives is that they involve disabled people directly, either as teachers, in curriculum development and/or through direct contact with disabled people's lives.

It is also important to provide role models who exemplify the possibility of success as disabled doctors and who can provide advice and mentoring. There is a general lack of suitable career guidance and advice for disabled students.¹⁵⁵ This must be addressed so as to prevent disabled students reaching the end of their medical education and finding few clear postgraduate options open to them.

Medical schools must ensure that they have fulfilled their duty to make reasonable adjustments. This duty arises when disabled students are placed at a substantial disadvantage when compared to people who are not disabled, in relation to the environment, procedures, practices, policies and the provision of auxiliary aids and services. Courses and services must be adapted to meet disabled students' requirements. This may mean avoiding treating disabled students less favourably, but it may also mean providing facilities such as free car parking that non-disabled people are not entitled to.¹⁵⁵ Reasonable adjustments are likely to include the adaptation of the physical environment and the provision of student induction and support. Teaching and learning must be

inclusive, and this needs to extend to laboratory sessions, lectures, provision of information technology, examinations and assessments, research facilities and work placements in the UK or overseas. It is important to note in this respect that institutions have an anticipatory duty; they must prepare in advance to accommodate disabled students' needs.¹⁵⁵

Although the general professional guidance on fitness to practice is considered to contain the principles that should form the basis of medical education¹⁷⁴ the GMC and the Medical Schools Council have produced specific guidance on fitness to practice requirements for medical students.¹⁷³ The guidance for medical students contains advice on the effect of ill health on fitness to practice. It is important to note that many disabled students will not suffer ill health, but also that long-term health conditions come under the definition of 'disabled person' in the DDA.¹⁵⁵

Particularly relevant aspects of this guidance include that students should:

- seek medical or occupational health advice if there is a concern about their health
- accept that they may not be able to assess their own health, and be willing to be referred for treatment and to engage in any recommended treatment programmes
- be aware that they are not required to perform exposure prone procedures in order to achieve the expectations set out in *Tomorrow's Doctors (2003)*; students with blood-borne viruses can study medicine but they may have restrictions on their clinical placements, and will need to limit their medical practice when they graduate
- be aware that medical graduates must let it be known if their health poses a risk to patients or the public.¹⁷³

Tomorrow's Doctors (2003) lists 18 key clinical and practical skills.¹³ The GMC stipulates that while adjustments cannot be made to these standards, adjustments can be made to the method of learning and to the assessment through which the student demonstrates the skill. A revised version of *Tomorrow's Doctors (2003)* was published in September 2009 – during consultation prior to its publication the GMC revealed that one of the six main considerations in revising the document was disability. The revision considers carefully the competencies required of graduates to ensure they do not pose unnecessary barriers to disabled students.¹⁴

It is important to note that not all disabled medical students will have an impairment upon entry to medical school. Where medical students become disabled during their training, they should be provided with rehabilitation and support to continue with their training in line with the treatment doctors would receive.³ The revised *Tomorrow's Doctors* stipulates that the GMC can assist medical schools to ensure that their graduates are not unfairly disadvantaged by their disability when they enter Foundation Year One training, and to ensure that appropriate arrangements are made.¹⁴

Summary

Medicine seems to attract a lower proportion of disabled students than that found in the general university population, although this may partly be due to the particular reluctance of applicants to disclose information on impairments. Traditionally medical schools were unwilling to accept disabled students and disabled medical students and doctors faced considerable attitudinal barriers from colleagues and patients. There has been some improvement since the mid 1990s, as legal and cultural shifts have led to a more positive view of disabled students and doctors. Although not every disabled student will meet the GMC's fitness to practice guidelines for medical students, medical schools now have a duty to encourage disabled people to apply. Medical schools must ensure that the course information they provide supports this duty. It is also important to ensure that application processes do not present unnecessary barriers to disabled applicants. Medical schools must also ensure that reasonable adjustments are made so that the needs of disabled students who are accepted into medical school are met.

Questions for discussion

- What are the best ways to ensure there are no unnecessary barriers for disabled medical students?
- What is the best way to assess the under-reporting of impairments and the barriers to reporting?
- Should there be guidance on how specific impairments may affect an individual's ability to study and practise medicine?
- How can medicine be better promoted as a potential career for disabled people?

Section 7: Sexual orientation and trans issues

This section discusses the issues facing LGB and trans students in medical schools. It highlights the challenges they face, and the advantages they may bring to a medical career. Given that little if any data are collected on LGB and trans healthcare professionals, this section cannot discuss the representation of LGB and trans students in UK medical schools.

The Gay and Lesbian Association for Doctors and Dentists (GLADD), in its guidelines for LGB doctors, puts forward a useful definition of sexual orientation, which acknowledges the complex crossover of the personal and the professional in defining the term in this context:

The term 'sexual orientation' is used to define that part of an individual's sexuality concerned with the gender of persons found to be erotically arousing in fantasy or behaviour. Homosexual is taken to mean mainly or exclusively aroused by same sex persons (gay or lesbian), heterosexual by different sex persons, and bisexual by persons of either sex. However, the perception of a person's sexuality by his/her self and by society goes far beyond the merely erotic, and, in using these definitions, we do not intend to reduce in any way the complexity of person-hood to a sexual act or fantasy. We also acknowledge that there are both professional and personal aspects to exposure to homophobia. However, the experiences of our members suggest that these two aspects are too closely interwoven to be clearly separable, indeed we are not sure that they can be separated in a truly integrated doctor.¹⁷⁵

Trans people clearly do not fit neatly within this definition. Although trans people may experience issues in common with LGB people based on their sexual orientation, they may also experience issues related to their gender identity (this is discussed further on page 84).

Sexual orientation and the medical workplace

Recent years have seen a strengthening of legal protection in the UK in relation to sexual orientation. In 2003, the Employment Equality (Sexual Orientation) Regulations in Great Britain and the Employment Equality (Sexual Orientation) Regulations (Northern Ireland) became law and made it illegal to discriminate in employment or training on the grounds of sexual orientation. This means that the estimated 1.7 million LGB people in the UK workplace now have similar legal protection to that given to women, disabled and Black and ethnic minority staff.¹⁷⁶ In 2007, the Equality Act (Sexual Orientation) Regulations were passed prohibiting discrimination on grounds of sexual orientation in the provision of goods, facilities and services, education, the use and disposal of premises and the exercise of public functions. The regulations made it unlawful for providers of goods, facilities and services to:

- treat someone less favourably because of their sexual orientation – whether perceived or actual (direct discrimination)
- apply a criterion, provision or practice which disadvantages people of a particular sexual orientation without a good reason (indirect discrimination)
- victimise someone because they have made a complaint or allegation or have given evidence against someone else in relation to a complaint of discrimination (victimisation).¹⁷⁵

Legislative protection has been accompanied by a considerable commitment from UK Governments and from key health and medical organisations to improve the situation for LGB and trans health professionals. In 2005, for example, the DH established its Sexual Orientation and Gender Identity Advisory Group to provide a national steering group to work on a comprehensive strategy for improving health and social care services for LGB and trans individuals and to improve the experiences of those working within the NHS. In 2002, GLADD produced its guidance on avoiding discrimination against LGB medical students, *Dignity at work for lesbian and gay doctors and dentists, medical and dental students*.¹⁷⁵ The BMA and the GMC both supported this guidance and used it to inform their own position on LGB issues.

Such developments are both timely and necessary, as doctors have commonly reported experiencing discrimination and harassment in relation to their sexual orientation. A qualitative study conducted in 1994 found that 27 of 28 gay and non-gay participants thought that there was prejudice against gay doctors in the medical profession.¹⁷⁷ Qualitative research conducted by the BMA in 2004 found that gay doctors experienced both direct discrimination (for example homophobic comments from colleagues) and indirect discrimination (for example being offered accommodation suitable for single people despite having a partner). Some doctors felt that they were unable to be open about their sexuality in the same way as heterosexual colleagues, while others described choosing specialties on the basis that they were 'safe', or more welcoming.³ A 2007 Stonewallⁱ qualitative project funded by the DH found deep-rooted homophobic practices across the healthcare sector. Interviewees reported hearing derision of patients and colleagues by other staff, and a number felt that tackling homophobia was not a priority for their employer.¹⁷⁸

International research has also produced evidence of widespread discrimination against doctors in relation to sexual orientation. In Canada national surveys found that 40 per cent of general internists¹⁷⁹ and 50 per cent of internal medicine residents¹⁸⁰ had witnessed homophobic remarks. A study by the American Association of Physicians for Human Rights found that 17 per cent of physicians had been refused medical privileges, employment, referrals or educational opportunities due to their sexual orientation.¹⁸¹ In Australia, 47 per cent of the members of the Australian Lesbian Medical Association reported experiencing discrimination on the basis of their sexuality.¹⁸² In September 2000, the Council of Europe voted to support a series of recommendations to support gay and lesbian rights, including the need to combat homophobic attitudes in the medical profession in member countries.¹⁸²

i Stonewall is a campaigning and lobbying charity working to promote equality and justice for lesbians, gay men and bisexual people in the UK. Further information can be found at www.stonewall.org.uk

Lesbian gay and bisexual students in medical education

There are no data currently collected on the proportion of UK medical students who are LGB. The collection of data on sexuality remains challenging in a society in which disclosure can mean exposure to homophobic attitudes. The proportion is likely, however, to be roughly similar to that found in broader UK society. A 2001 study of sexual behaviour in the UK found that about five per cent of respondents had ever had homosexual partnerships.¹⁸³ Others cite the US Kinsey study figure of around 10 per cent.¹⁸⁴ Stonewall quotes Government estimates that there are approximately 3.6 million LGB people living in the UK, and 1.7 million in the workforce.¹⁷⁶

The experiences of LGB medical students in the UK are also under-researched, and relatively little is known about the extent of pressures faced by this group in their work and study environments.¹⁸⁵ It has been reported that UK medical students commonly experience homophobia.¹⁸⁶ A study of 428 male and female students at a London medical school between 1994 and 1997 found that 10 to 15 per cent held very negative views towards male homosexuality and bisexuality.¹⁸⁷ Studies from the US have similarly found harassment and discrimination to be serious issues for LGB medical students.¹⁸⁸ One study found that one quarter of 291 directors of family practice residency programmes interviewed said they would rank openly homosexual or bisexual candidates lower than heterosexual applicants.¹⁸⁸

Two medical students discuss their medical schools attitude to discrimination on the basis of sexual orientation.

I feel that my medical school does not tolerate any sort of discrimination, but are not particularly active in prevention. However, I do feel like they deal with any issues as they appear.

Unlike their staunch position against racism, my medical school doesn't seem to be that bothered about LGB and trans discrimination. Reporting discrimination is not actively encouraged, however, I suppose if it did happen to me I would receive the full support of the medical school.

Research has found that the disclosure of LGB sexuality at medical school is perceived as challenging and difficult, with many students fearing negative repercussions for their studies and future careers.^{177, 189, 190} There is therefore a particular need for support to be provided to students experiencing this process. In terms of pastoral care, GLADD recommends identifying a member of medical school staff who is supportive and knowledgeable about sexual orientation, and who can provide the opportunity for confidential discussion of particular issues.¹⁷⁵ Lesbian, gay and bisexual role models from among staff or senior students are in general highly valued.¹⁷⁵ Support groups for LGB students have also been recommended as a means of helping them to cope with the issues experienced at medical school.¹⁸⁹ The GMC's 2009 revision to *Tomorrow's Doctors (2003)* places a particularly strong emphasis on the provision of appropriate pastoral care and counselling to medical students, and this may particularly benefit LGB students.¹⁴

An LGB medical student comments on the support services at university.

I feel there isn't a need for a specific LGB service at my medical school, but the usual counselling services should make a point that it deals with LGB issues as well as other non-LGB issues. There's not really any mention of LGB issues within the medical school at all. Within the university itself, there is an LGB society, which I joined in my second year. It was mainly a social society, but I joined the committee this year and I'm on the committee again next year. We're trying to advertise the society more and introduce more support for students, including 'safe spaces' for students to come and talk to trained committee members and reduce homophobia as a whole within the university.

The publication and frequent distribution of equal opportunities policies condemning discrimination against LGB students has also been recommended.¹⁸⁹ It is vital that these policies should be supported by the development of effective ways of monitoring the experiences of LGB students. An important aspect of this is recording and publicising action taken on incidents of homophobic bullying and harassment.¹⁷⁵ The responsibility to take action on this is increasingly strong; the 2009 revision of *Tomorrow's Doctors (2003)* stipulates that medical schools must have clear policies, guidance and action plans for tackling discrimination and harassment.¹⁴

It is also generally agreed that there is a strong need to address sexual orientation and homophobia in the medical school curriculum.^{3, 175, 182} Best practice is to teach this throughout the curriculum, rather than as a discrete topic area. In the past, many schools have restricted their teaching on sexual orientation to HIV/AIDS or psychiatry, reinforcing stereotypes associated with LGB patients.¹⁷⁵ It is regarded as more productive to address sexual orientation issues as they arise when studying subject areas such as neuroscience, psychology, reproduction or doctor-patient communication.

Improved curricula and the life experiences of LGB doctors are particularly important and valuable in light of recent research finding that LGB patients present particular health needs. A 2007 Stonewall survey of 6,000 lesbian and bisexual women found that lesbian women were more likely than heterosexual women to smoke, to drink three times a week, and to have taken drugs, and were less likely than heterosexual women to have had a cervical smear test. Only three in 10 of the lesbian and bisexual women surveyed said that healthcare workers did not make inappropriate comments when they came out.¹⁹¹ This research is supported by similar findings among lesbian women in Australia.¹⁸²

Research has found that LGB medical students are likely to feel they have particular skills to offer, including an enhanced ability to empathise with others from minority groups, a strong ability to recognise inner conflict in patients, skill in using inclusive language and a particular understanding of the impact of biases in patient care.¹⁸⁹

An LGB medical student comments on the support required at university.

As a LGB student I have to say that I don't think what we need is extra support, we just need not to be discriminated against in the first place! If there is a problem, for example on a clinical placement, or even during our pre-clinical training then yes, the medical school should have a protocol for complaint if necessary and for pastoral support. Most medical schools are within or attached to universities, most of which have LGBT societies who can offer further support if necessary.

Trans medical students

The prevalence of the 'six strand' approach to equality and diversity means that trans people are often discussed together with those who are LGB. Trans people face discrimination on the basis of their gender identity, not just their sexual orientation. The DH provides the following overview of the definitional questions and practices surrounding trans:

'Trans' is used to capture experiences of being gender variant in behaviour and preference, as well as social and legal gender change or transformation. Trans is primarily a UK term, developed in a political context to refer to a diverse and inclusive community of people ranging from part-time cross-dressers to transsexual people who undergo gender reassignment surgeries. Trans is used in the context of personal rights: that is, to support the claim that all trans people are entitled to have their human rights upheld. 'Trans' is an alternative umbrella term used in many parts of Europe and North America. In the UK, transgender is used as a policy term to describe those people who live part or all of their lives in their preferred gender role – they may or may not use hormonal or surgical treatments. Trans can also be used to refer to cross-dressers and transvestites.

'Transsexual' describes those people who seek gender reassignment treatments, including genital reconstructive surgery where possible. Someone who is transitioning from female to male may self identify as a trans man, while male to female transsexual people may self identify as a trans women. After successfully transitioning to live permanently in their preferred gender role, many prefer to be considered simply as men or women.^j In the past, these people would 'merge' into the community at large (known as living in 'stealth'). However, nowadays many use the internet to keep in touch with the trans community in order to continue to get information about their legal rights and protections.¹⁹²

j See www.gires.org.uk

It is generally acknowledged that the degree of 'de-pathologisation' that has been achieved for LGBT people has not applied to trans people, who still suffer extensive discrimination. In recent years, however, there have been a number of positive developments for trans people in the UK. In Great Britain, the Sex Discrimination Act was amended in May 1999 to protect transsexual people against discrimination in employment and vocational training. The UK-wide Gender Recognition Act 2004, which came into force on 4 April 2005, gave trans people the right to change their legal gender by means of a Gender Recognition Certificate. This certificate automatically leads to a new birth certificate in the acquired gender with all the accompanying rights and responsibilities, including the right to marry. This Act also imposes new responsibilities in terms of confidentiality – making it a criminal act for any individual who has obtained information in an official capacity to divulge that someone is a trans person (although there are exceptions for healthcare professionals, where either consent has been given or that consent cannot be given by that person, or where the disclosure is made to a health professional for medical purposes).¹⁹²

The EHRC states that 'transsexualism affects an estimated 5,000 people in the UK,¹⁹³ while the Gender Identity Research and Education Society gives the figure of 6,200 people who had undertaken gender reassignment by 2008.¹⁹⁴ It is not known how many trans medical students there are in the UK. It is likely that trans medical students will require support during the transitioning process; in discussing how to inform staff and other students, how to register a change of name, using single-sex facilities, and in anticipating and discouraging hostile reactions.

It is important to recognise that not all experiences of LGBT and trans medical students will be negative. In February 2009 the BMA published a web resource celebrating the contribution of LGBT and trans doctors to the NHS, and a number of those interviewed cited a considerable improvement in the experiences of LGBT and trans doctors in recent years.^k

k www.bma.org.uk

A trans medical student interviewed for the BMA's resource, 'A Celebration of lesbian, gay, bisexual and transgender doctors' describes her experiences.

I came out as bisexual in freshers' week at medical school, and I am very glad I did so; I faced very few problems as a result. I have yet to come out about my gender identity and that's something that causes me some anxiety. I have no idea how my medical school will respond to my name change, pronoun change and change in gender identity. I don't know of anyone who's transitioned at the school before; I'm probably the first. I've come out to a few friends within medicine, and have faced not only a lack of understanding but unfortunately also a lack of willingness to understand. Most medics have never come across a trans person and particularly not a trans person who identifies outside of the gender binary. Whenever gender or sex is discussed within a medical context – or often by medics in any context – it's only ever in terms of 'men/women' and 'male/female.' People who don't fit into those categories, be it physically, socially, or personally, are never mentioned or thought about. I think that can make it harder for people to get their heads around living outside of a gender binary. It took me years!

I don't know how things will work for me when I'm back in clinical placements; it will depend on which gender people perceive me at the time and what name is used most. I don't intend to come out to the doctors and other medical staff I meet in my placements at work – it probably wouldn't be appropriate or relevant. I don't have the confidence and – if I'm honest – I'm unsure what the repercussions might be. However, I have met a trans woman gynaecologist who recently transitioned publicly and had positive stories of this; she's somewhat of an inspiration for me.¹⁹⁵

As with LGB issues, it is important that trans issues are also covered in medical curricula, particularly given the rising rates of applications for gender reassignment.¹⁹⁴ It has been suggested that health professionals need to be made more aware of the possibility that not all patients will self-identify simply as men or women, or as straightforwardly straight or lesbian/gay.¹⁹⁶ As with LGB people, trans people also have particular health needs: they are more likely to be victims of violence, have high risk rates for HIV and high rates of self-harm and suicide.¹⁹² Trans people have also identified particular problems in interacting with the medical profession, which have included misuse of names, titles and gender pronouns, incorrect assumptions about sexual behaviour, incorrect assumptions about mental health histories, inflexible single-sex services and incorrect assumptions about parenting responsibilities.¹⁹⁶ A DH leaflet on trans health issues claims that 17 per cent of trans people have been refused non trans-related medical treatment by a doctor or nurse who did not approve of gender reassignment, while 29 per cent felt that being trans negatively affected the way they were treated by a doctor or a nurse.¹⁹² There is clear potential to highlight such issues at the stage of medical school.

Summary

Research indicates that LGB and trans medical students experience discrimination and harassment, from patients and from colleagues. There is a need for both LGB and trans students to be able to access strong pastoral support, especially those who choose to 'come out' or 'transition' at medical school. Encouraging LGB and trans role models and incorporating LGB and trans health issues throughout the medical education curricula are likely to be of particular benefit to LGB and trans medical students, as well as future patients and doctors. The lack of data on LGB and trans medical students needs to be addressed so that their experiences in medical school can be monitored, especially incidences of bullying or harassment. Medical schools should ensure that policies that condemn discrimination are published and frequently distributed.

Questions for discussion

- What would be the best way to support LGB and trans medical students?
- How can medical schools promote understanding of LGB and trans needs?
- What are the most important steps that should be taken to reduce discrimination within medical schools?

Section 8: Religion and belief

The Equality Act 2006, which applies across the UK, makes it illegal to discriminate against someone because of their religion or belief. Broadly, in order to be accepted as a religion for the purposes of the Act, a faith must be 'recognised as being cogent, serious, cohesive and compatible with human dignity'. Belief is defined as including philosophical beliefs, such as humanism, which are considered to be similar to a religion.⁹⁴ Other categories of beliefs, such as support for a political party, are not protected by the Equality Act 2006. This section considers the experiences and particular needs of students with a religion or belief at medical school.

Students with a religion or belief in medical schools

There is little published data available on the religious backgrounds of medical students, and only minimal research into the experiences of students with a religion or belief. In 2006, the BMA undertook research into religion or belief at medical school. Its national survey of UK medical students, which attracted 297 responses, found that 60 per cent of students identified themselves as Christian, four per cent as Hindu and three per cent as Muslim. Twenty-seven per cent said they had no religion. Eighty-four per cent agreed that their medical school's course and curriculum supported students of all faiths and reflected a society of different religions and beliefs. This survey was conducted with a very small sample which was unrepresentative. In terms of ethnicity (79% of respondents gave their ethnic background as White, a higher proportion than is likely to be found across the medical student body) and further research would be needed to reach any conclusions about the religious identification of medical students.¹⁹⁷

A medical student discusses the impact of maintaining their belief on their studies.

I think religious students need support from medical schools when making ethical and clinical decisions where there may be perceived conflicts of interest, as well as helping them feel more accepted generally. Medical school has an intensely alcohol soaked social atmosphere meaning many students feel left out from med school life. In educational terms, many courses such as Medical Ethics and Law assist students, which is very beneficial. The biggest challenge for me has been trying to fit praying and attending lectures but usually if it's feasible, leaving the lecture theatre is the best option. Otherwise, rarely any difficulties.

Focus group research undertaken in 2006 by the BMA with eight medical students of different religious beliefs suggested little experience of faith-based discrimination. Most respondents in the group felt that their religion had little impact on patient care. A problem that was identified was the clash of religious events or festivals with significant dates on the academic calendar, but this was not viewed as a major impediment to success at medical school. Some participants did feel that increased awareness raising of different religions and faiths among medical staff and the general student body would lead to a more welcoming environment for students of non-Christian religious backgrounds. Where there were policies and procedures relating to religion, such as the option to request time off for religious observance, it was felt by some that all staff needed to be made aware of this. Some also felt that pastoral support systems were important and needed to be well publicised to students.¹⁹⁷

A Christian medical student comments on religious holidays and medical school timetabling.

Being Christian it's not too difficult to keep holy days of obligation because the holidays tend to be based around these. So, I have no complaints. I imagine it must be really hard being of another faith though. Like Muslims have to go to the mosque on Fridays when everyone is on placement or there are lectures on and have their feast days when everything is on at school.

A medical student who converted to Islam in the middle of her second year explains the difficulty in combining her faith with aspects of medical school.

Since converting I have become aware of the size of the Muslim population in medical school, and it is large and increasing each year. This must be considered more when planning things around religious festivals. For example, the Eid festival at the end of the Month of Ramadan, falls on my final exam for Obstetrics and Gynaecology, Paediatrics and Child Health, and the OSCE is a day later, so it has not only been making revision more difficult, but I imagine it will make celebrating more difficult too! Can you imagine having your finals on Christmas Day and your OSCE the day after Boxing Day? I do understand that it is difficult and I am not complaining as such because we are living in a predominantly non-Muslim land, but I think it is something people in power need to be aware of. Also the introductory day of our Paediatrics course (which is the day where you find all the vital information on what to do and who to contact etc) was on Yom Kippur, which is the big Jewish festival which requires people to be in the synagogues all day.

The wearing of religious dress may also be an issue, in particular for women medical students from Muslim backgrounds who may wish to wear the hijab or other items of religious dress. The BMA's MSC and the Medical Schools Council included recommendations on this issue in their joint 2006 charter.¹⁹⁸ They suggest that consideration for patients should affect how students choose to appear. They emphasise that dress and appearance should not interfere with students' ability to communicate with patients and their supporters. General appearance, facial expression and other non-verbal signals are key components of effective communication and any form of dress that interferes with this (such as covering the face or wearing excessive jewellery) should be avoided. The Charter also states that students must be prepared to respond to a patient's individual needs and must take steps to anticipate and overcome any barriers to communication. This may at times require students to set aside their personal and cultural preferences in order to provide effective patient care. Given that the most commonly worn form of covering for Muslim women medical students and doctors is the hijab, a square scarf that covers the head and neck leaving the face clear, religious dress is likely to cause obstacles to communication only in exceptional circumstances.¹⁹⁹

The GMC's 2009 revision of *Tomorrow's Doctors (2003)* places an increased emphasis on sensitivity to the needs of religious students. It stipulates that medical schools should ensure that their policies for student assessment account for students' varied cultural, social and religious backgrounds, while maintaining consistency in educational standards. Medical schools are advised to produce clear guidance on the action to be taken if a student's culture or religion conflicts with usual practice or usual rules, such as dress codes or the scheduling of assessments.¹⁴

The BMA Medical Students Committee has made the following recommendations:

Medical schools should aim to show respect for the observance of religious festivals and holidays. Medical students should not be penalised for participation in religious or cultural events.

Medical students should discuss with their medical school any ethical or religious beliefs that might require adjustment to their training. Medical schools should aim to accommodate all students, so long as they still meet the requirements for graduation and provisional registration with the GMC.

Medical students should not be prohibited from wearing religious garments that do not interfere in patient care. Innovation from medical schools and teaching hospitals to allow students to observe their religious freedom, such as ensuring the availability of specially designed scrubs to cover or form religious headdress in theatre, is encouraged and should be developed further.³⁸

Diversity and medical education

The increasing ethnic and religious heterogeneity of medical schools may necessitate a re-evaluation of medical school practices. It may be helpful to increase teaching on cultural awareness in medical schools. This could assist medical students from different religious and ethnic backgrounds, but also may improve the standards of care provided by doctors to the diverse UK population. Research has shown the damaging effects of inaccurate cultural stereotyping on patients,²⁰⁰ and tackling this issue in medical school may have positive results.

Summary

It is important that medical schools are aware of the needs of students with a religion or belief, and that appropriate provision for these students is made. In particular, pastoral care systems and policies on religion and belief should be well publicised. Where students wish to wear religious dress, ease of communication with patients should be a priority. This is unlikely to be impeded by the most commonly worn forms of religious dress in the UK.

Questions for discussion

- What are the best ways to ensure that patients are not disadvantaged by doctors' religions or beliefs?
- How can we improve teaching on religion and belief at all stages of medical education so that students and doctors are best prepared to look after patients from a diverse population?
- Would data collection on religion and belief improve the experience of students and patients?

A Sikh medical student comments on the impact that his religion had on his study of medicine.

Sikhism begins and ends my day, and as much as possible I try to integrate its principles into my work at university too. Studying in a small city which doesn't have many practising Sikhs results in people often staring at me in the street or in the hospital due to my outwardly appearance (namely my turban). I've learnt to deal with this over the years, and I find it refreshing that a lot of other students at my university are keen to ask and learn about why I wear a turban and what faith I belong to rather than avoiding direct eye contact!

Medical schools need to encourage tolerance and respect for anyone's religious beliefs. On the whole this is provided – most people are very accepting and polite. However if the situation arises where a student has felt any sort of discrimination, there should be channels of help available whether through the form of personal/pastoral tutors, or student representatives. In my university I started a Sikh Society in an effort to bring the students together and provide an additional forum for any issues affecting the Sikh students to be discussed.

As a Sikh I don't drink alcohol or use any other intoxicants. I've noticed that in medical school there is an increasing drink-centred culture, and as a first year it can be hard to find friends who share similar social beliefs to you. Our university has an 'academic family' system where older students are matched up with younger students to help them integrate into medical school. It was possible to opt for non-alcoholic older students; however the initial meeting where you were given the names and contact details of your older students was arranged to take place in a pub! Almost every social event in the medical school involves a copious amount of alcohol. I've been lucky in this respect and have about a dozen friends who don't drink alcohol when they socialise, and respect that I'm not comfortable in that type of scene.

A number of religious doctors are from diverse backgrounds, as are patients. Many are also bilingual which can be helpful in areas of Britain where new immigrants aren't yet familiar with English. Religious healthcare professionals may also have a set of beliefs, which can often be significant in practising good medical ethics and patient care. Being a Sikh has made me think about many issues such as euthanasia, palliation and patient dignity and I'm confident that it has encouraged me to treat my future patients with compassion and respect, no matter what their beliefs and lifestyle habits are.

Section 9: Admissions policy and procedures

Selection for medical school

Medical schools are the gatekeepers to medical practice, as such, the selection process plays a vital role in determining the composition of the medical profession. The task of selecting medical students from a pool of well-qualified applicants is complex and demanding. Not all analyses of medical schools' selection policies and procedures are negative. The currently competitive and challenging selection processes for medicine may contribute to the fact that the subject group of medicine, dentistry and veterinary science has the lowest non-continuation rates of all degrees.²⁰¹

Many factors contribute to the changing demography of medical schools. The application rate from various groups is of primary importance in determining the composition of medical schools and the profession. Analysis of applications and admissions statistics in previous sections of this discussion paper has also shown that certain groups of students seem to face disadvantage in selection to medical schools. This has raised concern about selection procedures and has led to considerable attention being devoted to the fairness of these procedures.

Dissatisfaction with the basis for selection to medical school is not new. In the 1960s many believed that disproportionate weight was given to family connections in medicine.⁶ In recent years, there has been a stronger emphasis on transparency and equal opportunity in the admissions process. The publication in 2004 by the DfES of its report on admissions to higher education, *Fair admissions to higher education: recommendations for good practice* (referred to as the Schwartz report, after the leader of the review, Professor Steven Schwartz), was an important driver of this. The report made recommendations for a fairer, more transparent and more accessible system of admission into higher education. While it agreed that merit should be the basis for entry to higher education, it felt that merit could be defined more fairly, so as to extend access to candidates with high potential but without strong educational or familial support.¹¹ It recommended that, particularly where courses were over-subscribed and subject to large numbers of applications from almost identically qualified candidates, attention could be paid to contextual information, such as the type of school attended or an applicant's rank in his or her class. It advocated holistic assessment of candidates' potential, defined as assessment that considers a broad range of additional information, including relevant skills and contextual factors as well as academic achievement. Such holistic assessment of candidates needed to employ instruments proven to be reliable and valid. Following on from the recommendations of the report, the Government established its Supporting Professionalism in Admissions programme (SPA) in mid 2006, to support institutions in the development of fair admissions and to promote best practice.²⁰²

The BMA supported the recommendations of the Schwartz report, and advocated their application in medical schools. In the BMA submission to the consultation held in advance of the report's publication, it was agreed that it was desirable to consider contextual information such as attending a low-achieving school or experiencing family problems, so long as this is done in a transparent, explicitly stated manner defined in advance of the admissions period.²⁰³ The BMA feels that medicine represents a case where qualities other than educational achievement are particularly relevant, including communication skills and determination to serve society.^{37, 203}

The BMA is particularly keen to emphasise the need for admissions processes in medical schools to be completely transparent and explicitly documented. This needs to be accompanied by close monitoring of universities' procedures for short-listing and selection.²⁰⁴ The BMA's MSC supports increased national conformity in selection procedures, and has called on the Government to make procedures standardised and transparent.

In 2006 the Medical Schools Council updated its guidance to medical schools in line with the principles of the Schwartz report to state that admissions must be transparent and that schools must make available to prospective applicants details of their admissions policies and explanations of the admissions process.⁹⁶ This is supported by the GMC's 2009 revision of *Tomorrow's Doctors (2003)*, which stipulates that medical schools should publish information about their admissions system, including guidance on the basis on which places will be offered and on the selection process.¹⁴ It is still the case that there is considerable uncertainty about the weight given to different aspects of the admissions process, such as academic results, cognitive testing, interviews and personal statements. Requirements for admission to medical school are still far from entirely transparent. Some have gone so far as to describe entry criteria as 'secretive and varied'.²⁰⁵ Research has found that universities use UCAS forms in a wide variety of different ways and that they are likely to use different criteria for shortlisting applicants.³¹ These practices are not normally made public.

In 2006, the Medical Schools Council updated its guiding principles for the selection and admission of students to medical school in line with the principles expressed in the Schwartz report, identified as selection for merit, potential and diversity; reliability, validity and relevance; the minimising of barriers and professionalism. The revised principles are:

1. selection for medical school implies selection for the medical profession
2. the selection process attempts to identify the core academic and non-academic qualities of a doctor
3. a high level of academic attainment will be expected
4. the practice of medicine requires the highest standards of professional and personal conduct
5. the practice of medicine requires the highest standards of professional competence
6. candidates should demonstrate some understanding of what a career in medicine involves and their suitability for a caring profession
7. medical schools have agreed that the selection process for medical students must be transparent, involve procedures that respect obligations under relevant diversity and equality legislation
8. the primary duty of care is to patients
9. failure to declare information that has a material influence on a student's fitness to practise may lead to termination of their medical course.⁹⁶

Admissions instruments are often debated in the context of creating barriers to the selection of non-traditional students (ie facilitating or obstructing widened access to medicine). There are many types of instruments used to select students for medical school; these may include academic record, school report, referees' reports, self reports, cognitive or intellectual aptitude tests, psychometric tests, structured tasks, organised group activity and interviews. The BMA has supported the use and development of assessment procedures other than educational achievement, with the important qualification that such procedures must be valid, ie they must be proven to predict the right qualities needed for success as a medical student and a doctor. It also needs to be borne in mind that if an institution uses too many selection instruments, it may be likely to deter candidates from lower socio-economic backgrounds, who often have less support in satisfying the requirements of admission.

Those involved in selecting medical students, across the diverse range of possible selection instruments, need to be appropriately trained to select students consistently and fairly, to observe equality and diversity legislation and to promote equality and diversity. The GMC's 2009 revision to *Tomorrow's Doctors (2003)* stipulates that all those responsible for student selection should receive this training.¹⁴

Academic record

Assessing an applicant's academic record is normally the main criterion for selection to medical school. Very often it is used as the first means of limiting the number of potential entrants. Achieving the required qualification grades continue to be crucial in gaining admittance to medical school. In 2004, to have had a greater than even chance of gaining a place, a candidate would have needed 360 UCAS tariff points, which is equivalent to three A grades at A-level.²⁰⁶ The strong reliance on academic record to select medical students has aroused some controversy, with some questioning whether the highest level of academic achievement is a good predictor of success as a doctor. It has been suggested that three arguments underpin the use of academic record in selection:

- the achievement argument – academic records are said to ensure a minimum competence in the sciences basic to medicine
- the ability argument – academic success depends mainly on intellectual ability, and achievement tests, such as A-levels, indirectly assess intelligence
- the motivation argument – academic record is an effective method of selection because university education requires not only intellectual ability but also good study skills and motivation, which are demonstrated through past achievement.²⁰⁷

Intellectual ability is generally regarded a crucial part of predicting a student's ability to complete the medical course²⁰⁸ and become a good doctor. There are few prospective studies testing the validity of using achievement tests, such as A-levels, in relation to outcomes in medical careers.²⁰⁷ There is evidence from retrospective studies, however, that A-levels have predictive validity for success in both undergraduate and postgraduate medicine.^{100, 207, 209, 210} A-level results have been correlated with drop-out from medical school,²⁰⁷ and performance in basic medical science examinations, finals and postgraduate membership and fellowship exams;²¹¹ although some A-level

subjects may predict later exam success better than others.⁷² Overall, previous academic performance seems to be a good predictor of achievement in medical training, particularly during undergraduate education.²⁰⁹

Despite the apparent predictive validity of A-level results, it is not clear whether public examination results and predictions are the best and fairest means of establishing the intellectual ability of medical school applicants. The BMA agrees with the suggestion of the Schwartz report that school examination results may be influenced by a number of factors including educational background and personal circumstances, and may not reflect candidates' true academic potential.^{11, 203} Research suggests that academic attainment in secondary education is correlated with ethnicity and socio-economic background.^{21, 86, 206} For this reason, an over-reliance on academic records may disadvantage intellectually able students from non-traditional backgrounds.

One alternative to heavy reliance on educational achievement has been the institution of systems of intellectual aptitude and psychometric testing as a requirement for entry to most UK medical schools (discussed on page 98). Another suggestion has been the lowering of academic entry requirements in order to widen participation in medical school across society. This approach has been used with some success in specific programmes in a number of UK universities, as was discussed in the section on socio-economic background. Some have suggested making this approach more widespread and systematised, by setting a basic threshold of minimum educational achievement, such as three C grades in science subjects, with applicants then chosen from this pool using other selection procedures.⁵¹ The BMA has expressed cautious support for this type of approach.²⁰³ Implementing such a system would require extensive research to set an appropriate minimum standard and to identify the other selection procedures to be used. This approach brings the risk of an increased attrition rate or the longer-term risk of less well qualified medical students becoming less competent doctors;¹¹¹ risks that must be carefully assessed and guarded against.

Another ongoing issue surrounding the use of educational achievement in university entrance is the fact that applicants apply to university before they receive their results. Universities thus consider applications on the basis of teachers' grade predictions, AS level results and GCSE results. This practice has been criticised as unfair, given that some candidates with lower than expected grades may receive offers, while those with higher grades miss out due to faulty predictions. The Schwartz report strongly advised a move to a system of post-qualification applications (PQA) and an initial commitment was made by the Government to implement this by 2012. In subsequent years this commitment has waned, and it is now uncertain that PQA will go ahead at all.^{212, 213} Some suggest that PQA could benefit applicants from lower socio-economic groups,²¹⁴ although this has been contested by leading universities and independent schools.^{43, 215} The BMA has supported the introduction of PQA on the grounds that actual results are a fairer criterion for entry than teachers' estimates, and that such a system has the potential to encourage a greater diversity of applicants.^{37, 203} The BMA has warned, however, that the use of PQA must not lead to the placement of further emphasis on academic achievement at the expense of exploring students' non-academic potential.

Applicants to medical school are normally expected to have proven subject knowledge of science subjects, particularly chemistry. Only a small proportion of university applicants, however, gain the required science grades to gain entrance to medical school. The necessity of several science qualifications as a prerequisite to a medical degree has long been questioned.¹¹¹ Some commentators have identified a new trend in which personal qualities and commitment are just as essential as chemistry, biology and physics.²¹⁶ At present, most universities continue to require at least one or two science A-levels/Advanced Highers, however, this is something that may need re-examination unless the uptake of science subjects at secondary level increases.³⁸

Comments on a review of one medical school's selection procedure.

When we examined our admissions criteria following accusations of discrimination on the grounds of ethnicity we found that the initial screening process attempted to assess several things. One of these was leadership potential. The criteria used were evidence of responsibility at school, for example being a prefect. State schools and sixth form colleges do not operate a prefect system, yet students were being given extra marks as part of the screening process if they had this evidence.

Also we found that students from selective schools (the majority of which are private schools) were predicted to get higher grades. One of our criterion for selection for interview was predicted grades of two As and a B. If the teacher predicts three Bs then the student is less likely to be invited for interview.

At interview the student from the private school performs well and is offered the standard 2 'A's and a 'B'. The student from the state school does not even get an interview even though getting 3 'B's at some state schools must be a huge achievement. Come the exams the student from the private school gets an 'A' and 2 'B' grades. She or he is however in a pool from which students will be selected, having already been interviewed. Because not all students offered a place will obtain the required grades, that student gets a place. In the meantime, the student from the state school who also got an 'A' and 2 'B's was never interviewed so was never even offered a place. Who has the greater potential? The state school student who surmounted adversity having obtained higher grades in an inner city school or the student who got all the benefits of private education?

The fact remains that about 20 per cent of our students do not get the required offer yet still get given a place at medical school. The majority of these are from selective/private schools.

Intellectual aptitude and psychometric testing

Twenty-six out of the UK's thirty-two medical schools now ask applicants to sit the UK Clinical Aptitude Test (UKCAT).²¹⁷ Cambridge, Imperial College London, Oxford and University College London medical schools require applicants to sit the Biomedical Admissions Test (BMAT).²¹⁸ The BMAT was developed at Cambridge with the intention of providing fair assessments of applicants from a range of backgrounds by addressing generic academic skills and the capacity to apply basic science knowledge. The UKCAT was developed by the private educational company, Pearson Vue, which won a tender put out by a consortium of heads of medical and dental schools planning to use the test. The test is overseen by a Board elected from representatives of these schools. The rationale for the establishment of the UKCAT test was the increasing difficulty of distinguishing between academically able candidates with close to identical grades, and a desire to measure attributes such as problem-solving skills, conscientiousness, empathy, resilience and other qualities seen as important to the role of doctors and dentists.²¹⁹

Some medical schools in Australia have lowered the threshold for academic marks and instead select students based on an interview and psychometric tests similar to UKCAT, known as the Graduate Medical Schools Admissions Test (GAMSAT).²²⁰ This test measures cognitive skills, ethical orientation and aspects of empathy and creativity and is now used in five UK medical schools for graduate-entry candidates. Evaluation studies performed 10 years after this was introduced at the University of Newcastle in Australia, found it to be a superior selection procedure in terms of how far students achieved the medical programme objectives.²²¹

There have been strong reservations expressed about the use of aptitude tests in the UK, and at its 2008 annual conference, the BMA's MSC called for the Medical Schools Council to abolish the use of UKCAT in the admissions process. This followed major errors in the processing of results in 2007, which meant that thousands of applicants that year might have been disadvantaged by incorrect results reported to the schools to which they applied.²²²

Concern has also been raised about the validity of these aptitude tests as identifiers of the characteristics a successful medical student and a good doctor will require. The UKCAT Consortium itself admits that evidence for the predictive validity of cognitive admission tests is lacking.²¹⁹ It has been suggested on these grounds that it is preferable to use A-level results exclusively, given that they have been proven to be a valid indicator of success at medical school.²²³

A medical student comments on the UKCAT.

I think the UKCAT should be scrapped because it confuses applicants about their competence and provides no indication of how good a medical student or doctor they will make, I didn't do very well on my UKCAT but I am among the top 25 students in my year. What the UK needs is a US-style Medical College Admission Test (MCAT), which covers a broader base of physics, maths, chemistry and biology.

UKCAT is designed as a measure of intellectual aptitude, as opposed to attainment, and the UKCAT Consortium claims that it has the potential to offer a greater chance of selection to students with high academic potential from disadvantaged educational backgrounds.²¹⁹ This may be negated by the policy of charging a fee of between £60 and £75 (2008 figures) to sit the test (although UKCAT paid bursaries to cover this fee to 4.7% of candidates who took the test in 2006).²¹⁹ The BMAT test cost between £32.10 and £64.20 (2008 figures) but fees will be reimbursed if the applicant is in receipt of Education Maintenance Allowance, Job Seeker's Allowance or Income Support.²²⁴ It is BMA policy that medical students should not be asked to pay the cost of fees for additional stages in selection required by some schools.³⁷ The decision to charge applicants to sit the UKCAT test has been especially criticised; as it is deemed likely to deter applicants from lower socio-economic groups from applying for medical school.²²² There is a growth industry around coaching and preparation for the test, which is anecdotally seen to benefit those who are capable of paying for such assistance, although UKCAT claims it is not possible to study for the test. The SPA programme suggests that practice on application tests benefits applicants, and cites instances of state schools using Government-allocated widening participation funds to send students to attend private coaching courses.²²⁵

Others have argued that the pool of applicants to medicine is highly pre-selected, and that cognitive testing is unlikely to make much difference, either to differentiating effectively between candidates or to attracting a more diverse range of applicants. It has been suggested that the use of more narrowly graded A-levels offer the best means of selecting medical students fairly and effectively.²²³ The recent addition of an A* grade at A-level may add weight to this argument.

The GMC's 2009 revision to *Tomorrow's Doctors (2003)* states as a key principle of the selection process that 'selection processes will be valid, reliable and objective',¹⁴ and it is as yet unclear that UKCAT or BMAT satisfies these criteria. The BMA has emphasised the need for the selection process of medical students to be transparent, but medical schools have been criticised for their failure to indicate to what degree UKCAT results are taken into account in conjunction with educational achievement, personal statements and candidate interviews. The SPA programme has advised that institutions using admissions tests need to ensure that they make it clear to applicants how results will be used.²²⁵

A medical student comments on the admission process.

There's not enough transparency in the admissions process. I think students should be told why and how a decision was reached. This could help in future decisions about their career choices and their personal development.

School and referee reports

Reports from applicants' schools may provide universities with information about abilities, attitudes and behaviours. They may be biased or omit uncomplimentary material. School reports can also make comparisons between candidates difficult.⁸⁹ Research has found that the academic reference has no predictive value in subsequent achievement.²⁰⁹ The motivation of the referee is often uncertain. It has also been suggested that schools feel compromised by the recent requirement to make references available to the student, and that this is likely to further reduce the usefulness of these reports.^{36, 101}

Self reports

Self reports usually form part of the university selection procedures. The UCAS application form contains a personal statement section that allows applicants to write about their interests, motivations and aspirations. There is little substantial research on the predictive power of personal statements.²⁰⁹ One study did find that information in the personal statement was predictive of success in clinical aspects of training.²²⁶ Another study found evidence that the assessment of non-academic activities was actually predictive of poorer performance in the first three years of medicine.¹⁰⁰ A study in 2005 examined the validity of medical school applicants' personal statements and referee reports for predicting future unhappiness or dissatisfaction with a career in medicine. This found that 'although widely used in medical student selection to assess motivation, interest and commitment to a medical career, the personal statement and the referee's report cannot validly be used by assessors, including experienced medical school selectors, to identify doctors who will subsequently be dissatisfied with a medical career'.²²⁴

Personal statements may give some insight into candidate's interests, but do not facilitate objective comparisons between candidates. Like academic records, the use of self reports may bias the selection process in favour of students with better school or parental support and guidance. Self reports give candidates an opportunity to demonstrate non-academic achievements. This frequently includes work experience as well as participation in sports and music. The BMA has expressed concern about the use of work experience or work observation as criteria for selection because students do not have equal access to these opportunities. There are certainly anecdotal reports of very able, disadvantaged students being rejected from medical school due to the lack of extra-curricular activities on their applications. It has been reported that a small number of medical schools choose not to use the non-academic section of the UCAS form at all in their admissions process, due to concerns about this possibility of bias.³¹ Research has also found that while most medical schools offer training to members of their interviewing panels, only about half train those who assess UCAS forms in order to shortlist applicants.³¹ Admissions deans at a Medical Schools Council meeting in 2008 discussed their concern that personal statements are now so influenced by others that they are without any reliability or usefulness as a selection tool.²²⁷

A medical student discusses the use of personal statements and interviews in candidate selection.

There are some good points about the current admissions process. The personal statement and interview give applicants a chance to express themselves as best as possible although this also means that applicants who are perhaps not so articulate but could still make good doctors are weeded out. The UKCAT exam fee is a bane on applicants because of its fee and incongruence with anything medical. The process isn't very transparent as unsuccessful applicants don't find out why they were rejected.

Personal interview

The BMA's MSC recommends that medical schools interview all prospective students. This is particularly important now that medical students have access to patients at the earliest stages of the course.^{8, 37} In 2006, Parry et al found that 20 out of the 22 UK medical schools that participated in the study conducted applicant interviews. The nature of these interviews varied widely in length, panel composition, structure, content, methods of scoring and the criteria on which candidates were invited to interview.³¹ In 2002/03 while Edinburgh interviewed only two per cent of eligible candidates, Cambridge interviewed 99 per cent.⁶³ Interview panels normally include two or three examiners, with some including lay people and medical students on interview panels.³¹ The BMA's MSC recommends the inclusion of a senior medical student on the panel, and that the notes made at interviews should be available to candidates on request, regardless of their success in obtaining an offer.^{19, 37}

Interviews have been found to assess different types and different numbers of personal qualities. Desired qualities generally include:

- level of commitment and motivation in regard to a medical career
- ability in team-working and leadership
- acceptance of responsibility
- a range of extra-curricular interests
- experience working in health or social care settings.³¹

While interviews seem desirable in light of the widely supported need to identify personal qualities such as compassion and a desire to contribute to society, some commentators have identified problems. One brief interview is a limited sample of a candidate's ability, an observation that led to the development of alternative systems like the multiple mini-interview.²²⁸ There is also evidence to suggest that interviewers tend to choose people like themselves.⁶⁷ Interviews may also bias the selection process in favour of students from more advantaged backgrounds. Some secondary schools put much more effort into training students for interviews, often because they have experience of putting candidates forward for medicine and know what to expect.⁸⁵ In order to help compensate for the effect of schooling on interview performance, some medical schools such as St George's in London provide interview training to candidates, as well as taking into account educational opportunity.⁸

It is very important that interviews are properly structured and constituted for the objective assessment of candidates. This reflects BMA policy for interviews for medical appointments, which it believes should be objectively structured. Research shows that the structured interview is a useful addition to intellectual ability in predicting later job performance.³⁶ All members of the interview panel should be trained in interviewing techniques and equal opportunities awareness and appropriate lines of questioning must be pursued. Research in 2006 found that 18 out of the 22 medical schools that participated in the survey conducted training for interviewers. Fourteen schools scored interviews numerically, while six scored applicants as 'offer, borderline or reject' and two schools did not provide information.³¹

Interviewing is often a particularly important aspect of admissions into extended access medical degree programmes that offer places to candidates from disadvantaged backgrounds who do not meet the academic requirements of the course. At King's College London applicants to the Extended Medical Degree Programme are all given a 30-minute interview. This is then used in conjunction with A-level results and a mental agility test to determine candidates' suitability for the programme.⁴⁷

It has been claimed that 'the greatest single barrier to a more careful selection process in the UK is the amount of resources that each school has to invest'.⁷⁰ Prospective medical students currently apply to up to four medical schools. As a consequence, most medical schools interview between 500 and 1,000 applicants for their courses. This volume of interviews means that few last for more than 15 or 20 minutes.⁷⁰ Some believe that interviews could be fairer and more reliable if medical schools used a centralised interview system and selection process. This would mean that resources were available to ensure that all interviewers are fully trained, all interviews were properly structured and the criteria for success were consistent nationally.⁷⁰

Structured tasks and observed group activity

Structured tasks to assess manual and reasoning skills and creativity may address some of the problems identified above with the commonly used personal interview. Only a very small number of UK medical schools currently use such tasks as part of their selection process.²²⁷ It is suggested that structured tasks have the potential to allow skills in personal interaction and responses to challenging situations to be observed, rather than to be reported by the applicant.²²⁷ An important obstacle in implementing such programmes more widely is that they are expensive to organise²²¹ and may not be a cost-effective means of selecting medical students.

Summary

The medical school selection process plays a vital role in determining the composition of the medical profession. The task of selecting students from a pool of well-qualified applicants is complex and demanding. There is evidence that certain groups of students seem to face disadvantage in selection to medical school. As a result, this has raised concern about the fairness of selection procedures and placed a stronger emphasis on the need for transparency and equal opportunity in the admissions process. In 2004, the Schwartz report recommended that merit should be the basis for entry to higher education, but that admissions procedures should also include a more holistic assessment of candidates' potential. There are many types of instruments used to select students for medical school; these may include academic record, school report, referees' reports, self reports, cognitive or intellectual aptitude tests, psychometric tests, structured tasks, organised group activity and interviews. There is considerable uncertainty about the weight given to these different aspects of the admissions process.

Questions for discussion

- What are the most effective instruments for selecting medical students?
- What steps, if any, should be taken to make selection as fair as possible?

A medical student discusses their experience of the admissions process.

What are the strengths of the current admissions process?

I think there is awareness in institutions of the need to appreciate diversity in their admissions procedures but it can be very overwhelming. Often it seems that the message given out is 'You can't do this. All the odds are against you.' I was asked about my background a lot during my interview, which was quite off-putting. In fact I was asked 'when you are at the bottom of the pile, what stresses do you have?' This has stuck with me ever since. It was humiliating and confusing. When I asked what it was supposed to mean, the question was simply repeated.

The admissions process is fairly transparent if you are lucky enough to be called for an interview then everything is explained well, but if not then there is little explanation provided about how candidates are assessed and how the admissions process works.

In addition I was also the first year to sit the UKCAT and found it to be pointless. It seemed like an added stress and the cost involved was very high. Although I was receiving income support at the time I took the test, and was eligible for a bursary towards the cost, getting proof of receipt of my benefit and getting through the bursary application took so long that I had to pay for it out of my own pocket. £60 is a lot, considering my weekly income was only £45. Had I not moved out of home with enough money in my bank, what would I have done?

Appendix 1

Number and percentage of applicants and accepted applicants to medical school by socio-economic group 2003-08

Socio-economic group		Year											
		2003		2004		2005		2006		2007		2008	
			%		%		%		%		%		%
Higher managerial and professional occupations	Applicants	4157	34.9	4830	33.8	4854	31.0	4881	32.0	4687	31.1	4635	31.2
	Accepted applicants	2727	39.2	2907	40.0	2615	36.8	2747	38.3	2680	38.2	2685	37.6
Lower managerial and professional occupations	Applicants	3030	25.4	3624	25.4	3757	24.0	3428	22.5	3418	22.6	3532	23.8
	Accepted applicants	1770	25.5	1851	25.5	1712	24.1	1642	22.9	1625	23.2	1671	23.4
Intermediate occupations	Applicants	1113	9.3	1365	9.6	1423	9.1	1405	9.2	1382	9.2	1518	10.2
	Accepted applicants	643	9.2	700	9.6	666	9.4	688	9.6	628	8.9	733	10.3
Small employers and own account workers	Applicants	458	3.8	549	3.8	542	3.5	503	3.3	544	3.6	552	3.7
	Accepted applicants	289	4.2	277	3.8	268	3.8	238	3.3	260	3.7	232	3.2
Lower supervisory and technical occupations	Applicants	244	2.0	311	2.2	260	1.7	250	1.6	292	1.9	284	1.9
	Accepted applicants	144	2.1	151	2.1	115	1.6	117	1.6	128	1.8	139	1.9
Semi-routine occupations	Applicants	679	5.7	1004	7.0	1135	7.3	1069	7.0	1247	8.3	1408	9.5
	Accepted applicants	374	5.4	453	6.2	451	6.3	435	6.1	460	6.6	591	8.3
Routine occupations	Applicants	237	2.0	279	2.0	272	1.7	293	1.9	281	1.9	357	2.4
	Accepted applicants	129	1.9	110	1.5	104	1.5	111	1.5	110	1.6	139	1.9
Unknown	Applicants	2002	16.8	2314	16.2	3394	21.7	3419	22.4	3241	21.5	2551	17.2
	Accepted applicants	877	12.6	813	11.2	1175	16.5	1198	16.7	1126	16.0	954	13.4
Total number of applicants	Total applicants	11920	100	14276	100	15637	100	15248	100	15092	100	14837	100
Total number of acceptances	Total accepted	6953	100	7262	100	7106	100	7176	100	7017	100	7144	100

Appendix 2

Number and percentage of UK applicants and accepted applicants to medical school by age 2003-08

Year	Applicants					Acceptances				
	20 and under	21 to 24	25 to 39	40 and over	Total	20 and under	21 to 24	25 to 39	40 and over	Total
1996	7,836	885	676	10	9407	4,079	275	125	1	4480
%	83.3	9.4	7.2	0.1		91.0	6.2	2.8	0.0	
1997	7,921	821	612	23	9377	4,210	237	130	0	4577
%	84.5	8.8	6.5	0.3		92.0	5.2	2.8	0.0	
1998	7,802	799	602	17	9220	4,296	239	147	1	4683
%	84.6	8.7	6.5	0.2		91.7	5.1	3.1	0.0	
1999	7,118	846	549	17	8530	4,386	330	154	1	4871
%	83.5	9.9	6.4	0.2		90.0	6.8	3.2	0.0	
2000	6,507	929	644	28	8108	4,549	465	222	2	5238
%	80.3	11.5	7.9	0.4		87.0	8.7	4.3	0.0	
2001	6,451	1,026	618	35	8130	4,842	589	236	8	5675
%	79.4	12.6	7.6	0.4		85.3	10.4	4.2	0.1	
2002	7,169	1,357	903	69	9498	5,138	736	395	18	6287
%	75.5	14.3	9.5	0.7		81.7	11.7	6.3	0.3	
2003	7,904	2,053	1,762	201	11920	5,421	892	610	30	6953
%	66.3	17.2	14.8	1.7		78.0	12.8	8.8	0.4	
2004	9,493	2,460	2,141	181	14275	5,719	855	652	36	7262
%	66.5	17.2	15.0	1.3		78.8	11.8	9.0	0.5	
2005	10,266	2,794	2,398	179	15637	5,415	949	716	26	7106
%	65.7	17.9	15.3	1.1		76.2	13.4	10.1	0.4	
2006	10,014	2,824	2,238	172	15248	5,543	928	675	30	7176
%	65.7	18.5	14.7	1.1		77.2	12.9	9.4	0.4	
2007	10,091	2,908	1,948	145	15092	5,518	909	565	25	7017
%	66.9	19.3	12.9	1.0		78.6	13.0	8.1	0.4	
2008	10,203	2,934	1,567	133	14837	5567	1056	499	22	7144
%	68.8	19.8	10.6	0.9		77.9	14.8	7.0	0.3	

Appendix 3

Number and percentage of UK applicants and accepted applicants to medical school by ethnic origin 2003-08

Ethnic origin		Year											
		2003		2004		2005		2006		2007		2008	
			%		%		%		%		%		%
Asian-Bangladeshi	Applicants	176	1.5	205	1.4	234	1.5	214	1.4	208	1.4	238	1.6
	Accepted applicants	73	1.0	85	1.2	65	0.9	62	0.9	67	1.0	71	1.0
Asian-Chinese	Applicants	252	2.1	311	2.2	332	2.1	363	2.4	320	2.1	313	2.1
	Accepted applicants	140	2.0	160	2.2	145	2.0	176	2.5	167	2.4	140	2.0
Asian-Indian	Applicants	1041	8.7	1350	9.5	1463	9.4	1468	9.6	1397	9.3	1310	8.8
	Accepted applicants	596	8.6	604	8.3	648	9.1	652	9.1	656	9.3	581	8.1
Asian-Other Asian background	Applicants	548	4.6	642	4.5	726	4.6	769	5.0	754	5.0	766	5.2
	Accepted applicants	276	4.0	269	3.7	276	3.9	278	3.9	298	4.2	285	4.0
Asian-Pakistani	Applicants	706	5.9	877	6.1	974	6.2	991	6.5	893	5.9	864	5.8
	Accepted applicants	301	4.3	292	4.0	310	4.4	301	4.2	249	3.5	284	4.0
Black-African	Applicants	440	3.7	598	4.2	774	4.9	720	4.7	680	4.5	762	5.1
	Accepted applicants	148	2.1	147	2.0	178	2.5	152	2.1	145	2.1	180	2.5
Black-Caribbean	Applicants	72	0.6	101	0.7	102	0.7	95	0.6	86	0.6	97	0.7
	Accepted applicants	22	0.3	19	0.3	25	0.4	25	0.3	25	0.4	33	0.5
Black-Other Black background	Applicants	34	0.3	34	0.2	42	0.3	50	0.3	51	0.3	31	0.2
	Accepted applicants	12	0.2	11	0.2	5	0.1	7	0.1	8	0.1	8	0.1
Mixed-Other mixed background	Applicants	128	1.1	166	1.2	211	1.3	186	1.2	214	1.4	226	1.5
	Accepted applicants	64	0.9	67	0.9	80	1.1	77	1.1	78	1.1	102	1.4
Mixed-White and Asian	Applicants	195	1.6	210	1.5	250	1.6	262	1.7	275	1.8	255	1.7
	Accepted applicants	117	1.7	110	1.5	117	1.6	136	1.9	132	1.9	131	1.8
Mixed-White and Black African	Applicants	32	0.3	48	0.3	41	0.3	47	0.3	58	0.4	49	0.3
	Accepted applicants	18	0.3	20	0.3	15	0.2	17	0.2	25	0.4	17	0.2
Mixed-White and Black Caribbean	Applicants	28	0.2	39	0.3	43	0.3	39	0.3	57	0.4	51	0.3
	Accepted applicants	10	0.1	15	0.2	19	0.3	24	0.3	24	0.3	17	0.2
Other ethnic background	Applicants	192	1.6	300	2.1	373	2.4	377	2.5	381	2.5	346	2.3
	Accepted applicants	87	1.3	115	1.6	125	1.8	135	1.9	130	1.9	125	1.7
Unknown	Applicants	303	2.5	383	2.7	344	2.2	287	1.9	303	2.0	324	2.2
	Accepted applicants	103	1.5	130	1.8	98	1.4	147	2.0	126	1.8	134	1.9
White	Applicants	7773	65.2	9012	63.1	9728	62.2	9380	61.5	9415	62.4	9205	62.0
	Accepted applicants	4986	71.7	5218	71.9	5000	70.4	4987	69.5	4887	69.6	5036	70.5
All	Total Applicants	11920	100	14276	100	15637	100	15248	100	15092	100	14837	100
	Total Accepted applicants	6953	100	7262	100	7106	100	7176	100	7017	100	7144	100

Appendix 4

Number and percentage of UK applicants and accepted applicants and acceptance rate by gender 2003-08

	Year											
	2003		2004		2005		2006		2007		2008	
Applicants												
Female applicants	7033	59.0	8142	57.0	8713	55.7	8477	55.6	8490	56.3	8264	55.7
Male applicants	4887	41.0	6133	43.0	6924	44.3	6771	44.4	6602	43.7	6573	44.3
Total applicants	11920		14275		15637		15248		15092		14837	
Acceptances												
Female acceptances	4286	61.6	4347	59.9	4138	58.2	4218	58.8	3940	56.1	4001	56.0
Male acceptances	2667	38.4	2915	40.1	2968	41.8	2958	41.2	3077	43.9	3143	44.0
Total acceptances	6953		7262		7106		7176		7017		7144	
Acceptance rate												
Female		60.9		53.4		47.5		49.8		46.4		48.4
Male		54.6		47.5		42.9		43.7		46.6		47.8

References

1. The Panel on Fair Access to the Professions (2009) *Unleashing Aspiration: Final Report of the Panel on Fair Access to the Professions*. London: The Panel on Fair Access to the Professions.
2. The British Medical Association (2004) *The demography of medical schools: a discussion paper*. London: British Medical Association.
3. British Medical Association (2004) *Career barriers in medicine: doctors' experiences*. London: British Medical Association.
4. www.bma.org.uk/employmentandcontracts/equality_diversity/equalitydiversityeducationupdate.jsp (accessed September 2009).
5. British Medical Association (2008) *Valuing diversity, enabling equality: implementing the BMA's equal opportunities policy*. London: British Medical Association.
6. Royal Commission on Medical Education 1965-68 (1968) *Report*. London: Her Majesty's Stationery Office.
7. Department for Education and Employment (1998) *Higher education in the 21st century: response to the Dearing Report*. London: Department for Education and Employment.
8. Department for Education and Skills (2003) *The future of higher education*. London: The Stationery Office.
9. Department for Education and Skills (2003) *Widening participation in higher education*. London: The Stationery Office.
10. Department of Health (2004) *Medical schools: delivering the doctors of the future*. London: Department of Health.
11. Admissions to Higher Education Steering Group (2004) *Fair admissions to higher education: recommendations for good practice*. Nottingham: Department for Education and Skills Publications.
12. Cabinet Office press release (13.1.09) Panel on Fair Access to the Professions announced – New Opportunities White Paper.
13. General Medical Council (2003) *Tomorrow's doctors*. London: General Medical Council.
14. General Medical Council (2009) *Tomorrow's doctors* London: General Medical Council.
15. British Medical Association (2008) *A need for change*. London: British Medical Association.
16. Do P, Parry J, Mathers J et al. (2006) Monitoring the widening participation initiative for access to medical schools: are present measures sufficient? *Medical Education* **40**: 750-8.
17. www.ucas.ac.uk
18. McManus IC (2004) Measuring participation in UK medical schools. *British Medical Journal* **329**: 800-801.
19. Spence D (2008) Are there too many middle class doctors? *British Medical Journal* **336**: 894.
20. Office of National Statistics (2007), *Labour Force Survey 2006*, Newport: Office of National Statistics.
21. Langlands A (2005) *The gateways to the professions report*. London: Department for Education and Skills.
22. Department for Innovation, Universities and Skills (2008) *First release: participation rates in higher education: academic years 1999/2000 – 2006/2007*. London: Department for Innovation, Universities and Skills.

23. Department for Innovation, Universities and Skills (2008) *Full-time young participation by socio-economic Class (FYPSEC): 2008 update*. London: Department for Innovation, Universities and Skills.
24. Higher Education Funding Council for England (2006) *Widening participation: a review*. London: Higher Education Funding Council for England.
25. www.aimhigher.ac.uk/sites/practitioner/programme_information/healthcare_strand.cfm (accessed September 2009).
26. The Royal College of Surgeons (2007) *Annual report 2006-2007*. London: Royal College of Surgeons.
27. Department for Innovation, Universities and Skills (2008) *Development Fund, Round 1 and Round 2 summaries*. London: Department for Innovation, Universities and Skills.
28. Sutton Trust (2004) *The missing 3000: State school students are under-represented at leading universities*. London: Sutton Trust.
29. Sutton Trust (2007) *University admissions by individual schools*. London: Sutton Trust.
30. Universities UK (2008) *Variable tuition fees in England: assessing their impact on students and higher education institutions: a third report*. London: Universities UK.
31. Parry J, Mathers J, Stevens A et al. (2006) Admissions processes for five year medical courses at English schools: review. *British Medical Journal* **332**: 1005-9.
32. www.kent.ac.uk/economics/news/archive/schools.html (accessed September 2009).
33. Cohen S & Syme SL (eds) (1984) *Social support and health*. Orlando: Academic Press.
34. Greenhalgh T, Seyan K & Boynton P (2004) "Not a university type": focus group study of social class, ethnic, and sex differences in school pupils' perceptions about medical school. *British Medical Journal* **328**: 1541.
35. Brown G & Garlick P (2007) Changing geographies of access to medical education in London. *Health and Place* **13**: 520-31.
36. Sutton Trust (2008) *Knowing where to study: fees, bursaries and fair access*. Sutton Trust: London.
37. British Medical Association (2005) *Medicine in the 21st century: standards for the delivery of undergraduate medical education*. London: British Medical Association.
38. British Medical Association (2008) *Becoming a doctor: entry in 2009*. London: British Medical Association.
39. Greenhalgh T, Russell J, Boynton P et al. (2006) "We were treated like adults" -- development of a pre-medicine summer school for 16 year olds from deprived socio-economic backgrounds: action research study. *British Medical Journal* **332**: 762-7.
40. Hilton S & Lewis K (2004) Opening doors to medicine. *British Medical Journal* **328**: 1508-9.
41. Angel C & Johnson A (2000) Broadening access to undergraduate medical education. *British Medical Journal*. **321**: 1136-8.
42. Kamali AW, Nicholson S & Wood DF (2005) A model for widening access into medicine and dentistry: the SAMDA-BL project. *Medical Education* **39**: 918-25.
43. Russell Group (2005) Response to DfES consultation: improving the higher education applications process.

44. Arulampalam W, Naylor R & Smith J (2004) Factors affecting the probability of first year medical student dropout in the UK: a logistic analysis for the intake cohorts of 1980-92. *Medical Education* **38**: 482-503.
45. Searle J (2003) Equal opportunity does not produce equity: (not) getting into medical school. *Medical Education* **37**: 290-1.
46. Brown G & Garlick P (2007) Changing geographies of access to medical education in London. *Health and Place* **13**: 520-31.
47. Garlick PB & Brown B (2008) Widening participation in medicine. *British Medical Journal* **336**: 1111-13.
48. The Telegraph (22.08.08) *Britain's top universities 'favouring the poor.'*
49. The Telegraph (09.08.08) *Sheffield University defends turning down straight A students.*
50. James D, Ferguson E, Powis D et al. (2008) Graduate entry to medicine: widening academic and socio-demographic access. *Medical Education* **42**: 294-300.
51. Powis D, Hamilton J & Gordon J (2004) Are graduate entry programmes the answer to recruiting and selecting tomorrow's doctors? *Medical Education* **38**: 1147-53.
52. Cullen W, Power D & Bury G (2007) The introduction of graduate entry medical programmes: potential benefits and likely challenges. *Irish Medical Journal* **100**: 500-504.
53. Searle J (2004) Graduate entry medicine: what it is and what it isn't. *Medical Education* **38**: 1130-40.
54. McManus IC (1998) *The selection of medical students at British universities in 1996 and 1997*. London: Council of Heads of Medical Schools and Deans of UK Faculties of Medicine.
55. McManus IC, Richards P & Winder B C et al (1995) Medical school applicants from ethnic minority groups: identifying if and when they are disadvantaged. *British Medical Journal* **310**: 496-500.
56. The Sunday Times (14.09.03) Making the med school grade.
57. Data supplied by Higher Education Statistics Agency, 2009.
58. Holmes D (2002) Eight years' experience of widening access to medical education. *Medical Education* **36**: 979-84.
59. www.ccn.ac.uk
60. www.lambethcollege.ac.uk
61. The Hull York Medical School (2009) *Undergraduate prospectus 2010*. Hull and York: Hull York Medical School.
62. Thurman J C (1979) Some notes on the admission of graduate applicants to the medical schools. *Medical Education* **13**: 4-9.
63. Blackstone T (1997) Does maturity make a difference? In: Allen I, Brown P & Hughes P (1997) *Choosing tomorrow's doctors*. London: Policy Studies Institute.
64. Medical Workforce Standing Advisory Committee (1997) *Planning the Medical Workforce. Third Report*. London: Department of Health.
65. Hutchinson L, Hughes P & McCrorie P (2002) Graduate entry programmes in medicine. *British Medical Journal* **324**: S28.

66. Harth SC, Biggs JS & Thong YH (1990) Mature-age entrants to medical school: a controlled study of socio-demographic characteristics, career choice and job satisfaction. *Medical Education* **24**: 488-98.
67. British Medical Association (1998) *Selecting for medical school: a discussion paper*. London: British Medical Association.
68. Cross P (2004) Does age matter? *Student BMJ* **12**: 38.
69. Dowell T & Neal R in Tovey P (2000) *Contemporary primary care: the challenges of change*. Buckingham: Open University Press.
70. Hughes P (2002) Can we improve on how we select medical students? *Journal of the Royal Society of Medicine* **95**: 18-22.
71. Rolfe IE, Ringland C & Pearson SA (2004) Graduate entry to medical school? Testing some assumptions. *Medical Education* **38**: 778-86.
72. Lambert T W, Goldacre M J & Davidson J M et al (2001) Graduate status and age at entry to medical school as predictors of doctors' choice of long-term career. *Medical Education* **35**: 450-4.
73. Trotter E & Cove G (2005) Student retention and exploration of the issues prevalent on a healthcare degree programme with mainly mature students. *Learning in Health and Social Care* **4**: 29-42.
74. Parry E & Tyson S (2007) *The impact of age discrimination legislation on the higher education sector: a literature review*. London: Equality Challenge Unit.
75. Equality Challenge Unit (2007) Briefing: age equality and admissions to higher education. London: Equality Challenge Unit.
76. Equality Challenge Unit (2007) Briefing: age limits on access to medical, healthcare and social work professions. London: Equality Challenge Unit.
77. British Medical Association (2008) *A celebration of black, minority and ethnic doctors*. London: BMA.
www.bma.org.uk/employmentandcontracts/equality_diversity/ethnicity/bmedoctors.jsp
78. Esmail A (2007) Asian doctors in the NHS: service and betrayal. *British Journal of General Practice* **57**: 827-34.
79. NHS Information Centre (2008) Medical and dental staff, England at 30 Sept 2008.
80. Office for National Statistics (2003) Census 2001.
81. Esmail A (2001) Racial discrimination in medical schools. In: Coker N (2001) (Ed) *Racism in medicine: an agenda for change*. London: Kings Fund.
82. Information supplied by the London Deanery 9 January 2004.
83. www.newsroom.ucla.edu/portal/ucla/ucla-study-finds-medical-student-62578.aspx (Accessed September 2009).
84. Broecke S & Hamed J (2008) *Gender gaps in higher education participation: an analysis of the relationship between prior attainment and young participation by gender, socio-economic class and ethnicity*. London: Department for Innovation, Universities and Skills.
85. Connor H, Tyers C, Modood T et al. (2004) *Why the difference? A closer look at higher education minority ethnic students and graduates*. London: Department for Education and Skills.

86. McManus IC, Woolf K & Dacre J (2008) The educational background and qualifications of UK medical students from ethnic minorities. *BMC Medical Education* **8**.
87. Bedi R & Gilthorpe M S (2000) Social background of minority ethnic applicants to medicine and dentistry. *British Dental Journal* **189**: 152-4.
88. Seyan K, Greenhalgh T & Dorling D (2004) The standardised admission ratio for measuring widening participation in medical schools: analysis of UK medical school admissions by ethnicity, socio-economic status, and sex. *British Medical Journal* **328**: 1545-6.
89. McManus IC (1998) Factors affecting likelihood of applicants being offered a place in medical schools in the United Kingdom in 1996 and 1997: retrospective study. *British Medical Journal* **317**: 1111-6.
90. Collier J & Burke A (1986) Racial and sexual discrimination in the selection of students for London medical schools. *Medical Education* **20**: 86-90.
91. McManus IC, Richards P & Maitlis S L (1989) Prospective study of the disadvantage of people from ethnic minority groups applying to medical schools in the United Kingdom. *British Medical Journal* **298**: 723-8.
92. Esmail A, Nelson P, Primarolo D et al (1995) Acceptance into medical school and racial discrimination. *British Medical Journal* **310**: 501.
93. www.ecu.ac.uk
94. www.equalityhumanrights.com
95. Times Higher Education (08.07.05) *Race equality isn't just a nice idea, it's a duty*.
96. Council of Heads of Medical Schools (2006) *Guiding principles for the admission of medical students*. London: Council of Heads of Medical Schools.
97. Abbasi K (1998) Is medical school selection discriminatory? *British Medical Journal* **317**: 1097-8.
98. Wass V, Roberts C & Hoogenboom R et al (2003) Effect of ethnicity on performance in final objective structured clinical examination: qualitative and quantitative study. *British Medical Journal* **326**: 800-4.
99. Haq I, Higham J, Morris R et al. (2005) Effect of ethnicity and gender on performance in undergraduate medical examinations. *Medical Education* **39**: 1126-8.
100. Lumb AB & Vail A (2004) Comparison of academic, application form and social factors in predicting early performance on the medical course. *Medical Education* **38**: 1002-5.
101. Yates J & James D (2006) Predicting the "strugglers": a case-control study of students at Nottingham University Medical School. *British Medical Journal* **332**: 1009-13.
102. Dewhurst NG, McManus C, Mollon J et al. (2007) Performance in the MRCP (UK) examination 2003-4: analysis of pass rates of UK graduates in relation to self-declared ethnicity and gender. *BMC Medical Education* **5**: 8.
103. Carr P & Woodson J (2008) Academic performance of ethnic minorities in medical school. *British Medical Journal* **337**: a1094.
104. British Medical Association (2006) *Examining equality: a survey of royal college examinations*. London: British Medical Association.
105. Firth-Cozens J (2008) Effects of gender on performance in medicine. *British Medical Journal* **336**: 731-2.

106. Woolf K, Cave J, Greenhalgh T et al. (2008) Ethnic stereotypes and the underachievement of UK medical students from ethnic minorities. *British Medical Journal* **337**: a1220.
107. Lempp H & Seale C (2006) Medical students' perceptions in relation to ethnicity and gender: a qualitative study. *BMC Medical Education* **6**:17.
108. Report of the Interdepartmental Committee on Medical Schools (1944) London: Her Majesty's Stationery Office.
109. The Universities Central Council on Admissions (1964) *First report 1961-63*. London: Universities Central Council on Admissions.
110. Elston M (2009) *Women in Medicine* London: Royal College of Physicians.
111. McManus IC (2002) Medical school applications – a critical situation. *British Medical Journal* **325**: 786-7.
112. Moore W (2002) BMA negotiator calls for more male medical students. *British Medical Journal* **324**: 754.
113. www.ucas.ac.uk/website/news/media_releases/2009/2009-01-15 (accessed September 2009).
114. Opportunity 2000 (1996) Towards a balanced workforce.
115. Griffiths E (2003) Just who are tomorrow's doctors? *British Medical Journal* **326**: S4.
116. Lawes E G (2003) Careers in medicine. *British Medical Journal* **326**: 4s.
117. National Educational Trust (2008) – data provided to author.
118. www.ic.nhs.uk/statistics-and-data-collections/workforce/nhs-staff-numbers/nhs-staff-1998-2008-general-practice (accessed September 2009).
119. Kerrigan M (2007) *Engaging boys? A literature review of the 'gender gap' in compulsory and post-compulsory education*. Aimhigher: East Midlands.
120. The Times (28.10.08) *Equality watchdog Trevor Phillips: help the white working class*.
121. The Guardian (11.12.08) *White working class boys among worst achievers*.
122. Koralage N (2004) White men are under-represented in UK medical schools. *Student BMJ* **12**: 349.
123. Equality Challenge Unit (2007) *The gender equality duty: briefing for heads of institutions*. London: Equality Challenge Unit.
124. Allen I (1988) *Any room at the top? A study of doctors and their careers*. London: Policy Studies Institute.
125. Nicholson S (2002) So you row, do you? You don't look like a rower. An account of medical students' experience with sexism. *Medical Education* **36**: 1057-63.
126. Drinkwater J, Tully MP & Dorman T (2008) The effect of gender on medical students' aspirations: a qualitative study. *Medical Education* **42**: 420-6.
127. Miller K & Clark D (2008) 'Knife before wife': an exploratory study of gender and the UK medical profession. *Journal of Health Organization and Management* **22**: 238-53.
128. Dacre J (2008) Are there too many female medical graduates? No. *British Medical Journal* **336**: 749.
129. Lambert TW & Goldacre MJ (2007). Views of doctors in training on the importance and availability of career advice in UK medicine. *Medical Education* **41**: 476-86.
130. Medical Schools Council (2007) *Women in clinical academia*. London: Medical Schools Council.

131. Chief Medical Officer (2007) *Annual report 2006*. London: Department of Health.
132. Sandhu B, Margerison C, & Holdcroft A (2007) *Women in the UK academic medicine workforce*. *Medical Education* **41**: 909-14.
133. Cole A (2007) BMA calls for end of discrimination against women in medical academia. *British Medical Journal* **334**: 1343.
134. Higham J & Steer PJ (2004) Gender gap in undergraduate experience and performance in obstetrics and gynaecology: analysis of clinical experience logs. *British Medical Journal* **328**: 142-3.
135. Wiskin CMD, Allan TF & Skelton JR (2004) Gender as a variable in the assessment of final year degree-level communication skills. *Medical Education* **38**: 129-37.
136. The Independent (02.08.04) Laurance J The medical timebomb: 'too many women doctors.'
137. Heath I (2004) Women in medicine. *British Medical Journal* **329**: 412-13.
138. Bloor K, Freemantle N & Maynard A (2008) 'Gender and variation in activity rates of hospital consultants'. *Journal of the Royal Society of Medicine* **101**: 27-33.
139. Davidson JM, Trevor WL & Goldacre MJ (1998) Career pathways and destinations 18 years on among doctors who qualified in the United Kingdom in 1977: postal questionnaire survey. *British Medical Journal* **317**: 1425-8.
140. Goodyear H (2002) The Medical Women's Federation. *BMJ Career Focus* **324**: 147.
141. Allen I (2005) Women doctors and their careers: what now? *British Medical Journal* **331**: 569-72.
142. Taylor Kathryn S, Lambert Trevor W & Goldacre Michael J (2009) Career progression and destinations, comparing men and women in the NHS: postal questionnaire surveys, *British Medical Journal* (Clinical research ed.) **338**: b1735.
143. McKinstry B (2008) Are there too many female medical graduates? Yes. *British Medical Journal* **336**: 748.
144. Mather HM (2001) Specialist registrars' plans for working part-time as consultants in medical specialties: questionnaire study. *British Medical Journal* **322**: 1578-9.
145. Sandhu, B & Varney J (2008) Creating a flexible, accommodating and productive workforce. *British Medical Journal* **336** rapid response www.bmj.com/cgi/content/full/336/7647/749 (Accessed September 2009).
146. Fysh TH, Thomas G & Ellis H (2007) Who wants to be a surgeon? A study of 300 first year medical students. *BMC Medical Education* **7**: 2.
147. Royal College of Physicians (2008) *Census of Consultant Physicians in the UK, 2007: data and commentary*. London: Royal College of Physicians.
148. Sanfey HA, Saalwachter-Schulman AR, Nyhof-Young JM et al. (2006) Influences on medical student career choice: gender or generation? *Archives of Surgery* **141**: 1086-94.
149. Sinclair HK, Ritchie LD & Lee AJ (2006) A future career in general practice? A longitudinal study of medical students and pre-registration house offers. *European Journal of General Practice* **12**: 120-7.
150. Dosani S (2003) Flexible training: moving on and up. *British Medical Journal* **326**: S85.
151. McKee M & Healy J (eds) (2002) *Hospitals in a changing Europe*. Buckingham: Open University Press.

152. Gray S (2004) Women in medicine: doctors of both sexes are seeking balance between life and work. *British Medical Journal* **329**: 742-3.
153. British Medical Association (2007) *Disability equality in the medical profession*. London: British Medical Association.
154. The Guardian (07.01.2003) Ready, willing and disabled.
155. General Medical Council (2008) *Gateways to the professions: advising medical schools: encouraging disabled students* London: General Medical Council, Department for Innovation, Universities and Skills.
156. The Stationery Office (1995) *Disability Discrimination Act 1995 (c. 50)*. London: Her Majesty's Stationery Office.
157. Rubin P (2003) The GMC and medical students with disabilities. *StudentBMJ* 11: 393-436.
158. Mercer S (2005) No through road. *Health Service Journal* **24**: 24-26.
159. British Medical Association (1997) *Meeting the needs of doctors with disabilities*. London: British Medical Association.
160. Mercer S (1998) Career development for doctors with a disability. *British Medical Journal* **317**: 2.
161. Moloney R, Hayward R & Chambers R (2000) A pilot study of primary care workers with a disability. *British Journal of General Practice* **50**: 985-95.
162. Mercer S, Dieppe P, Chambers R et al (2003) Equality for people with disabilities in medicine. *British Medical Journal* **327**: 882-3.
163. Department of Health (2004) *Sharing the challenge, sharing the benefits – equality and diversity in the medical workforce*. London: Department of Health.
164. NHS Employers (2005) *Equal values: equal outcomes*. London: NHS Employers.
165. www.officefordisability.gov.uk
166. Quality Assurance Agency for Higher Education (1999) *Codes of practice for the assurance of academic quality and standards in higher education*. Gloucester: Quality Assurance Agency for Higher Education.
167. Tynan A (2002) *Pushing the boat out: an introductory study of admissions to UK medical, dental & veterinary schools for applicants with disabilities*. Newcastle upon Tyne: The Higher Education Academy: Medicine, Dentistry and Veterinary Medicine.
168. Tynan A (2003) *The sequel to pushing the boat out*. Newcastle upon Tyne: The Higher Education Academy: Medicine, Dentistry and Veterinary Medicine.
169. Council of Heads of Medical Schools (2005) *Recommendations on selection of medical students with specific learning disabilities including dyslexia*.
170. Roberts TE, Butler A & Boursicot KAM (2005) *Disabled students, disabled doctors – time for a change?* Newcastle upon Tyne: The Higher Education Academy: Medicine, Dentistry and Veterinary Medicine.
171. Byron M, Cockshott Z, Brownnett H et al (2005) What does 'disability' mean for medical students? An exploration of the words medical students associate with the term 'disability'. *Medical Education* **39**: 176-83.
172. Dieppe P, Anderson E, Byron M et al (2006) Teaching doctors about disability. *BMJ Career Focus* **333**: 113-5.

173. Medical Schools Council and General Medical Council (2007) *Medical students: professional behaviour and fitness to practice*. London: Medical Schools Council and General Medical Council.
174. General Medical Council (2006) *Good medical practice: guidance for doctors*. London: General Medical Council.
175. The Gay and Lesbian Association for Doctors and Dentists (2004) *Dignity at work for lesbian and gay doctors and dentists, medical and dental students*. London: The Gay and Lesbian Association for Doctors and Dentists.
176. Stonewall (2007) *Sexual orientation employer handbook (3e)*. London: Stonewall.
177. Rose L (1994) Homophobia among doctors. *British Medical Journal* **308**: 586-7.
178. Hunt R, Cowan K & Chamberlain B (2007) *Being the gay one: experiences of lesbian, gay and bisexual people working in the health and social care sector*. London: Stonewall and Department of Health.
179. Cook DJ, Griffith LE, Cohen M et al. (1995) Discrimination and abuse experienced by general internists in Canada. *The Canadian Journal of General Internal Medicine* **10**: 565-72.
180. van Ineveld CH, Cook DJ, Kane SL et al. (1996) Discrimination and abuse in internal medicine residency. *The Canadian Journal of General Internal Medicine* **11**: 401-5.
181. Schatz B & O'Hanlon KA (1994) *Anti-gay discrimination in medicine: results of a national survey of lesbian, gay and bisexual physicians*. San Francisco: Gay and Lesbian Medical Association.
182. McNair R (2003) Outing lesbian health in medical education. *Women and Health* **37**: 89-103.
183. Johnson AM, Mercer CH, Erens B et al. (2001) Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. *Lancet* **358**: 1835-42.
184. Kinsey AC, Pomeroy WB & Martin CE (1948). *Sexual behaviour in the human male*. Philadelphia: WB Saunders.
185. Hughes D (2004) Disclosure of sexual preferences and lesbian, gay, and bisexual practitioners. *British Medical Journal* **328**: 1211-12.
186. MacDonald R (2001) Homophobia in medicine. *Student BMJ* **9**: 358-9.
187. Parker A & Bhugra D (2000) Attitudes of British medical students towards male homosexuality. *Sexual and relationship therapy* **15**: 141-9.
188. Burke BP & White JC (2001) Wellbeing of gay, lesbian and bisexual doctors. *British Medical Journal* **322**: 422-5.
189. Risdon C, Cook D & Willms D (2000) Gay and lesbian physicians in training: a qualitative study. *Canadian Medical Association Journal* **162**: 331-4.
190. Merchant RC, Jongco AM & Woodward L (2005) Disclosure of sexual orientation by medical students and residency applicants. *Academic Medicine* **80**: 786.
191. Hunt R & Fish J (2008) *Prescription for change: lesbian and bisexual women's health check 2008*. London: Stonewall.
192. Department of Health (2007) *Trans people's health: briefings for health and social care staff*. London: Department of Health.

193. Equality and Human Rights Commission (revised 2008) *Transgender and work: your rights in employment and vocational training*. London: Equality and Human Rights Commission.
194. Reed B, Rhodes S, Schofield P et al. (2008) *Gender variance: prevalence and trend*. LGBT Health Summit, 4 September, Bristol.
195. British Medical Association (2009), *A celebration of lesbian, gay, bisexual and transgender doctors*. London: BMA. www.bma.org.uk/employmentandcontracts/equality_diversity/sexual_orientation/LGBTDoctors.jsp
196. Morton J (2008) *'Beyond binaries: addressing the health service provision needs of people with fluid non-binary gender identities and sexualities'*. LGBT Health Summit, 4 September, Bristol.
197. The British Medical Association (2006) *Briefing note: Religion in medicine*. London: BMA.
198. Council of Heads of Medical Schools & BMA Medical Students Committee (2006) *Medical schools Charter*. London: Council of Heads of Medical Schools & BMA Medical Students Committee.
199. British Medical Association (updated 2009) *A briefing paper from the Equal Opportunities Committee on doctors wearing religious dress*. London: BMA.
200. Schott J & Henley A (1996) *Culture, religion and childbearing in a multi-racial society: A handbook for health professionals*. London: Butterworth-Heinemann.
201. HESA (2007) *2006/07: Non-continuation rates (including projected outcomes)*. Cheltenham: Higher Education Statistics Agency.
202. www.spa.ac.uk
203. BMA's response to the DfES's consultation on admissions to higher education (the Schwartz report) 28 November 2003.
204. Turner N (1995) Recruiting ethnic minority medical students. *British Medical Journal* **310**: 1532.
205. Lumsden AM, Bore M, Millar K et al. (2005) 'Assessment of personal qualities in relation to admission to medical school'. *Medical Education* **39**: 258-65.
206. Powis D, James D & Ferguson E (2007) Demographic and socio-economic associations with academic attainment (UCAS tariff scores) in applicants to medical school. *Medical Education* **41**: 242-9.
207. McManus IC, Smithers E & Partridge P et al. (2003) A-levels and intelligence as predictors of medical careers in UK doctors: 20 year prospective study. *British Medical Journal* **327**: 139-42.
208. Arulampalam W, Naylor RA & Smith JP (2003) Compensating factors do not compensate for poor A-level performance. *British Medical Journal* **326**: 161.
209. Ferguson E, James D & Madely L (2002) Factors associated with success in medical school: systematic review of the literature. *British Medical Journal* **324**: 952-7.
210. McManus IC, Powis DA, Wakeford R et al. (2005) Intellectual aptitude tests and A-levels for selecting UK school leaver entrants for medical school. *British Medical Journal* **331**: 555-9.
211. McManus I C (2002) Medical school applications – a critical situation. *British Medical Journal* **325**: 786-7.

212. McClaran A (2008) *Developments in higher education applications and admissions: implications for universities, schools and colleges*, Higher Education Policy Institute Conference, 7 October, Oxford.
213. Supporting Professionalism in Admissions (2007) *Annual review 2006/7* Cheltenham: Supporting Professionalism in Admissions.
214. UCAS (2005) *Estimating the reliability of predicted grades*. Cheltenham: UCAS.
215. Hall C (2007) University entrance update. *Attain*, no.4.
216. The Sunday Times (14.9.03) *Making the med school grade*.
217. www.ukcat.ac.uk
218. www.admissionstests.cambridgeassessment.org.uk/adt/bmat (accessed September 2009).
219. UKCAT Consortium (2008) *UKCAT Annual Report 2006*. UKCAT Consortium.
220. www.gamsatuk.org/
221. Powis D (1998) How to do it: select medical students. *British Medical Journal* **317**: 1149-50.
222. Cassidy J (2008) UKCAT among the pigeons. *British Medical Journal*. **336**: 691-2.
223. McManus IC, Powis DA, Wakeford R et al. (2005) Intellectual aptitude tests and A-levels for selecting UK school leaver entrants for medical school. *British Medical Journal* **331**: 555-9.
224. McManus IC, Iqbal S, Chandrarajan A, Ferguson E and Leaviss J et al (2005) Unhappiness and dissatisfaction in doctors cannot be predicted by selectors from medical school application forms: A prospective, longitudinal study *BMC Medical Education* **5**: 38.
225. Supporting Professionalism in Admissions (2007) *SPA report on admissions tests used by higher education institutions*. Cheltenham: Supporting Professionalism in Admissions.
226. Ferguson E, James D, & O'Hehir F et al (2003) Pilot study of the roles of personality, references, and personal statements in relation to performance over the five years of a medical degree. *British Medical Journal* **326**: 429-32.
227. Medical Schools Council (2008) Report of the Medical Schools Council Admissions Deans meeting, Woburn House, London, 21 May 2008.
228. Norman GR (2006) Standardising the process versus improving the methods. *British Medical Journal* **332**: 1008-9.



The BMA is committed to protecting the environment by using papers that contain a high percentage of recycled fibre or those approved by the Forestry Stewardship Council (FSC) label that guarantees the harvested trees are replaced or are allowed to regenerate naturally. When you have finished with this publication, please recycle it responsibly.

BMA Marketing & Publications
British Medical Association, BMA House, Tavistock Square, London, WC1H 9JP
www.bma.org.uk

© British Medical Association, 2009

FREE FOR BMA MEMBERS

£28