Women and medicine

THE FUTURE

A report prepared on behalf of the Royal College of Physicians

by

Mary Ann Elston
Emeritus Reader in Medical Sociology
Department of Health & Social Care
Royal Holloway, University of London

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The Royal College of Physicians

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Contents

Acknowledgements vi
Executive summary vii
Summary of key findings xii
Abbreviations xxiii

1 Introduction to the project 1
The intake to UK medical schools 3
The medical workforce in the NHS in England 3
The UK medical profession: stocks and flows 7
Modernising Medical Careers 9
Re-organising doctors’ days (and nights) 11
The dynamic division of medical labour 13

2 Research methods 18
Introduction 18
Literature search 18
Official and institutional data sources 19
Information from cohort studies of UK medical graduates 21
Information on medical women’s representation on elite leadership and decision-making bodies 21
Statistical information for international and inter-professional comparisons 22
Seminars and interviews 22
The final report 22

3 Trends in entry to the profession 23
Introduction 23
Trends in entry to UK medical schools 23
Applications and acceptances for UK medical schools 24
Possible explanations for the higher acceptance rate for female applicants to medical school between 1996 and 2006 25
Variations between medical schools 30
4 Specialty preferences and choices

Introduction
Understanding career choices in medicine
The characteristics of different medical specialties
Early career preferences within medicine
The development of individuals’ career preferences over time
Factors influencing early career preferences and choices
Gender patterns in postgraduate training posts
Applications and acceptances for ST1 posts in 2007 under MMC/MTAS
Recruitment to ST1 posts in general practice in 2007
Recruitment to HCHS training ST1 posts in 2007
Comparison of data sources on specialist trainees
Specialty choice outcomes: current and possible future patterns in the NHS
International comparisons
Gender patterns in specialty preferences, choice and destinations: some emerging conclusions

5 Modes of working in medicine

Adapting the Oslerian ideal of professional commitment in medicine
Overview of women’s paid working patterns since the 1950s
Demographic changes between successive cohorts of UK doctors
Modes of working in medicine for women and men: current evidence and future implications
Permanent attrition and long-term retention
Career breaks and discontinuous working
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time or less than full-time working</td>
<td>84</td>
</tr>
<tr>
<td>Some overall findings on part-time working</td>
<td>85</td>
</tr>
<tr>
<td>Part-time and flexible postgraduate training</td>
<td>86</td>
</tr>
<tr>
<td>Part-time career grade posts in hospital medicine</td>
<td>93</td>
</tr>
<tr>
<td>Part-time working in different hospital and community health specialties</td>
<td>95</td>
</tr>
<tr>
<td>Part-time career posts in general practice</td>
<td>97</td>
</tr>
<tr>
<td>Trends in male doctors’ working patterns</td>
<td>98</td>
</tr>
<tr>
<td>Beyond working hours: gender variations in styles of practice and workload</td>
<td>99</td>
</tr>
<tr>
<td>Interprofessional comparisons</td>
<td>101</td>
</tr>
<tr>
<td>Medical women’s modes of working: some international comparisons</td>
<td>102</td>
</tr>
<tr>
<td><strong>6 Advancement and leadership capacity in medical careers</strong></td>
<td>105</td>
</tr>
<tr>
<td>Introduction</td>
<td>105</td>
</tr>
<tr>
<td>Success and leadership in medicine</td>
<td>106</td>
</tr>
<tr>
<td>Models of advancement in professional careers</td>
<td>106</td>
</tr>
<tr>
<td>Models of advancement and career structures within UK medicine</td>
<td>108</td>
</tr>
<tr>
<td>Professional practitioner and service posts in UK medicine</td>
<td>109</td>
</tr>
<tr>
<td>Women’s advancement in general practice</td>
<td>109</td>
</tr>
<tr>
<td>Gender and professional advancement in hospital medicine</td>
<td>112</td>
</tr>
<tr>
<td>Practitioner and service posts in hospital medicine</td>
<td>116</td>
</tr>
<tr>
<td>Women’s advancement to career posts in the NHS: summary</td>
<td>117</td>
</tr>
<tr>
<td>Medical leadership in NHS management</td>
<td>117</td>
</tr>
<tr>
<td>Political and professional leadership in medicine</td>
<td>118</td>
</tr>
<tr>
<td>Academic leadership in medicine</td>
<td>119</td>
</tr>
<tr>
<td><strong>Appendices</strong></td>
<td></td>
</tr>
<tr>
<td>1 Steering Group members and seminars attendees</td>
<td>124</td>
</tr>
<tr>
<td>2 Organisations and individuals contacted</td>
<td>126</td>
</tr>
<tr>
<td><strong>References</strong></td>
<td>128</td>
</tr>
</tbody>
</table>
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Appendix 2 lists the many organisations and individuals contacted in the course of the study, without whose assistance and information generously supplied, the project would have been impossible. Particular thanks are due to the Medical Workforce Census statisticians at the NHS Information Centre, the Health Policy and Economic Research Unit of the British Medical Association, and the Workforce Directorate Analysis Team at the Department of Health.
Executive summary

Introduction

The medical profession is undergoing profound changes. Among them is the rapidly increasing proportion of women doctors in what was once a male-dominated field. The focus of this research has been to examine the potential impact of this change on medicine as a whole.

The research brief contained a number of explicit and implicit questions which formed the initial framework for this project:

- **Changing profile of medical school applicants:** It would clearly be undesirable for the profession to lose its share of some of the most able candidates. If male applications are declining, is this because the attractiveness of the profession to those who once might have considered medicine as a career is also declining?

- **Risk of underserved specialties:** There are currently aggregate differences in the distribution of female and male doctors between medical specialties. If these persist as the percentage of women entering the profession increases, will this lead to traditionally male-dominated specialties facing staffing shortages?

- **Workforce design challenges:** The rising proportion of women doctors is likely to bring greater demand for part-time and other forms of flexible working arrangements. If so, will this create new organisational complexities, given that the best possible patient care must be assured?

- **Economic impact:** How far will overall service cost effectiveness and average productivity per doctor be affected by increases in the proportion of doctors working on part-time and other flexible arrangements? How will these pressures interact with other forces for change, such as the European Working Time Directive (EWTD)?

- **Leadership capacity:** Will there be a risk to professional leadership capacity if there is a reduction in the proportion of doctors who are in a position to give the intensive time commitment that professional leadership roles require?

Report structure

The main report has been structured around four analytic themes in order to address these issues in a systematic way. Following a general introduction (Chapter 1) and description of the methods used (Chapter 2), the first theme addressed (in Chapter 3) is entry to the profession, with a particular focus on the changing composition of applicants and entrants, and factors that may have influenced any differences in trends for males and females. The second theme is specialty preference and choice, addressed in Chapter 4, which introduces an analytic framework for examining the different aggregate patterns of male and female career choices, in order to examine the issue of potential shortages in particular specialties. Theme 3 (Chapter 5) is modes of working. The extent of different modes of working among male and female doctors is examined in relation
to service-wide changes in the organisation of medical services. Theme 4 (Chapter 6) considers advancement and leadership capacity, in terms of both the proportion of male and female doctors reaching senior career grades and the factors influencing the proportion of each sex attaining the highest leadership positions in clinical practice, service management, representation of the profession and academic medicine.

Conclusions in relation to initial issues

- The profession is continuing to attract high-quality male as well as female applicants at point of entry.

  The male share of applicants and entrants to the profession is not currently declining at the rate assumed when this project was initiated.

  Quality standards (as indicated by academic qualifications) at point of entry to medical school have, overall, been sustained at the highest level.

  The impact of the increasing intake of women into UK medical schools on the UK’s stock of doctors has been moderated by substantial inflows of international medical graduates (IMGs) who, historically, have been more likely than UK medical graduates to be male.

  On current trends, women are likely to become the majority of doctors in the NHS in England between 2017 and 2022, although the future of IMG recruitment will affect the rate of change.

- New specialty shortages are not an immediate prospect.

  Sustained male numbers mean that specialties that have traditionally appealed particularly to males, such as surgery, are likely to continue to experience sufficient demand for training places to maintain standards, from males and an increasing number of females.

  In parallel, a number of specialties that have historically recruited fewer female doctors because of their unpredictable working arrangements, such as emergency medicine, may become more attractive, as working arrangements become more session based and predictable.

  Existing problems of recruitment in some specialties may be exacerbated in the short term by any reduction in the number of IMGs from outside the European Economic Area (EEA) training in the NHS.

  Currently, there is a group of specialties, including general practice, that consistently recruit a higher proportion of women than of men, and a second group that, by contrast, attracts relatively more male recruits. A third cluster of specialties recruits a similar proportion of entrants of each sex. This tripartite division seems likely to continue for the foreseeable future.

  A similar division (involving the same specialties) is found in other countries, even though they have different proportions of women in medicine and different healthcare systems.
Workforce redesign is emerging as a significant issue for the NHS.

Although, at present, the majority of women doctors in the NHS work full time, a much higher proportion than among men opt for part-time and other flexible working arrangements. Increasing the range of flexible working options for women doctors at each stage in their career is a highly valued employee benefit. But it is important to consider the organisational implications of this, especially in the context of implementation of the EWTD and the policy commitment to specialist-delivered healthcare.

From an employer perspective, the increasing flexibility of employees’ working arrangements can create organisational complexity and inflexibilities, and unintended consequences for other employees. On the other hand, it may encourage careful planning and innovation in workforce arrangements that bring benefits to the service. Above all, accommodating any demand for more flexible arrangements has to be consistent with the fundamental principle of placing the highest priority on the delivery— and particularly the continuity— of patient-centred care. The profession is there to serve the patient.

Average differences in workforce participation between female and male doctors will have implications for workforce capacity and funding.

Evidence from the UK and internationally indicates that the average career lifetime ‘participation rate’ of female doctors tends to be lower than for male doctors. Although there is little evidence of differences in overall long-term retention, women are more likely to work less than full time and to take career breaks at some stages of their careers.

This has potential organisational and economic implications in terms of additional numbers of doctors (or other health workers) required to sustain capacity as the proportion of women in the medical workforce increases.

There are also unresolved— and complex— claims about differential average productivity which will require much more comprehensive investigation, including consideration of job plans and outcomes as well as activity.

Adequate leadership capacity at clinical service level looks assured for the foreseeable future, although there are some important issues to be taken into account.

Women in younger cohorts of medical graduates who pursue careers in hospital medicine have been achieving consultant status at a high rate compared with advancement in other leading professions. However, there is a risk that currently planned policy initiatives towards specialist-delivered medical care and EWTD requirements may put increasing pressure on the distinctiveness of the consultant role, with the possible emergence of either an expanded non-consultant career grade or multiple tiers within the consultant grade. These might have implications for the advancement prospects of those doctors seeking flexible working arrangements.

Women will soon make up the majority of general practitioners (GPs) in England, and an increasing number have become equity partners in group practices. An increasing number of young GPs, however, are now entering practice as salaried doctors— and most of these are women working part time. At present, salaried posts comprise a small proportion of all GP provision, but this sector looks likely to expand in the future. If
salaried, part-time practice becomes the long-term mode of working for a large percentage of GPs, this could have implications for leadership in general practice.

It seems likely that at the very top of the different leadership domains in the profession – clinical, academic, managerial and representational – the proportion of women may remain comparatively low. Substantial investment in ‘extra’ professional activities is typically required to achieve these top positions, which may be difficult to combine with extensive domestic or other non-professional commitments.

Some emerging issues

The research reviewed for this project suggests that some of the traditional concerns about women in medicine need to be reconsidered in the light of recent developments, and that new issues for research, some of them urgent, are emerging.

► Entry to medical school appears to be on a meritocratic basis. Nevertheless, white males are now under-represented, relative to their share of the relevant age group in the general population, among medical school applicants to an even greater extent than they are in higher education generally. Why this might be is not clear and deserves fuller examination.

► Gender patterns in UK medical graduates’ (UKMGs) eventual career choice are broadly associated with patterns in early specialty preferences, and consistent with those found in other countries, even those with different proportions of women in medicine and different healthcare systems. Some differences in the proportion of women and men in different specialties are likely to remain, at least for the foreseeable future. Whether this has consequences for patient care warrants further investigation.

► Compared to most other leading professions, medicine currently offers a great variety of career options and the potential for relative flexibility of working arrangements without sacrificing the possibility of achieving general practice partnerships, or consultant appointments at least in most specialties. Major changes to working arrangements in medicine are in progress, driven by NHS policy or clinical imperatives. How these will interact with any increase in demand for flexibility from the medical workforce will need to be evaluated.

► The evidence on advancement in hospital specialty medicine indicates that, among female UK graduates who have embarked on such a career over the last two decades, a very high proportion have achieved consultant status compared to the female success rates in achieving partnership in comparable private sector service professions. Whether this will be maintained in the future, in the likely context of less rapid expansion of NHS resources and increased supply of UK medical graduates relative to posts, and the possibility of changes to career grade opportunities is a topic for future research.

For medical workforce planning to be improved in the UK, investment to improve the adequacy and accessibility of data on the working patterns of doctors would be valuable. Two general points emerged from this project.
Greater coordination between the multiple agencies collecting information about the medical workforce (subject to data protection and confidentiality considerations) would render the large volume of data currently collected more useable for research and planning purposes.

More emphasis on collecting and analysing longitudinal (rather than cross-sectional) data on the career paths and working patterns of doctors would allow more accurate assessment of the implications for workforce capacity of the increasing numbers of women doctors. In particular, better data on patterns in career breaks and part-time working over the course of individuals’ careers are needed.

The research findings set out in this report show clearly that the increase in the proportion of women in the UK medical profession over the next decade will have organisational and economic implications, and exert an impact on workforce design that will need further detailed analysis. It is hoped that this report will help stimulate informed discussion and provide pointers to the areas that need most urgent attention.
Summary of key findings¹

Introduction

The aim of the research was to consider the impact on medicine in the UK of the increasing proportion of women entering the profession.² Four main themes were identified for detailed research: entry to the profession, specialty preferences and choices, modes of working in medicine, and advancement and leadership within medicine.

Information was obtained for the project through three main methods: literature searching, secondary analysis of statistical information from relevant official sources and other organisations, and qualitative data collected through interviews with key informants and four seminars with members of the medical profession, medical students, members of comparable professions, and social researchers.

A snapshot of the situation in 2007, with respect to women in the UK medical profession, shows the following:

- Women made up 57% of both applicants and acceptances for medical schools.
- Women made up approximately 40% of all doctors, 42% of GPs and 28% of consultants in the NHS in England.
- The proportion of women among consultants varied between specialty groups, from more than 40% in paediatrics and public health, to less than 10% in the surgical group. There are further interspecialty differences within many specialty groups.

Consideration of the possible implications for the profession of the increase in the proportion of women needs to take into account the social and organisational context shaping both demand and supply of medical labour. Changes in disease patterns, technological innovations and policy developments in relation to the NHS will affect doctors’ future careers and working patterns. Current examples of the latter include full implementation of the European Working Time Directive (EWTD), the Modernising Medical Careers (MMC) reforms to the postgraduate training structure, and proposals to reconfigure some specialist services closer to the community and others into tertiary facilities.

Trends in entry to the profession

Entry to UK medicine is from two main sources: the graduates of UK medical schools (UKMGs) and international (or overseas) medical graduates (IMGs) who come to the UK to train and/or work either temporarily or permanently.

¹ Full details of sources of statistical information and references are given in the main report.
² Most of the data on the NHS reviewed in this report refer to England, but the main findings are applicable to the rest of the UK.
The numbers and percentage of women among UK medical school entrants has been rising since the 1960s, but increased particularly sharply between 1997 and 2003, in the context of significant expansion of national medical school intake.

Women have been the majority of medical school entrants since the early 1990s.

The increase in the proportion of women entering UK medical schools has stabilised in recent years. Having reached 62% in 2003, the percentage fell slightly subsequently, to 57% in 2007.

Male applications for medical schools have fluctuated more than female applications in the last decade, but the number of men accepted rose by 42% between 2000 and 2007, compared to 34% among females, as places have expanded. So, far from ‘disappearing’, there are currently more males in UK medical schools than ever before. In 2007, there were almost 1,200 more men accepted for pre-clinical medical degrees than in 1996 (alongside 1,760 more women). Any decline in male medical students in the UK over the last decade has been relative to the number of women rather than a fall in absolute numbers.

For most of the last decade a higher proportion of women applicants were accepted than of men, although there was no difference for 2007 entry. This greater likelihood of acceptance is not wholly explained by differences in academic qualifications achieved. Factors relating to selection methods and in applicants’ demographic characteristics may also be relevant.

Medical school entry has become more diverse over the last decade in terms of age, with the introduction of graduate-entry courses. Older applicants are slightly more likely to be male than are school leavers, and less likely to be accepted.

More than 1 in 4 of all medical school applicants and acceptances were from minority ethnic backgrounds in 2007. The number of males and females among applicants from minority ethnic backgrounds is similar, but there are more females than males among white applicants. White males comprised only 25% of medical school applicants and 27% of medical school acceptances in 2007, although they represent about 40% of all school leavers. White females comprised 35% of all applicants and 40% of all acceptances for UK medical schools.

In many respects, trends in the entry of men and women to UK medical schools are similar to trends in higher education generally, and in entry to many other professions, where the proportion of both women and minority ethnic entrants has increased rapidly in recent decades.

Whether the relative decline in white male applicants for medicine is wholly attributable to the generally lower level of applicants for higher education from this group, or whether medicine has become less attractive to its traditional entry group of relatively high social class white males remains an unanswered question.

There are some consistent differences between medical schools in the percentage of women among acceptances since 2000. These may reflect aggregate gender differences in candidates’ preferences as well as school-related factors.

At least 50% of new UKMGs have been female for a decade, rising to over 60% between 2007 and 2009, but the percentage is then set to fall slightly for 3–4 years.

The effect of this inflow on the gender ratio in the stock of UK doctors has, however, been reduced by recruitment, particularly between 2000 and 2006, of substantial numbers of
international medical graduates (IMGs) qualified outside the EEA into the NHS, among whom the proportion of women has been lower.

- In 2007, approximately 1 in 5 GPs and 1 in 3 of all hospital and community health service (HCHS) doctors in the NHS in England qualified outside the UK.
- The percentage of women among UK-qualified NHS GPs in England was 44%, compared to 33% among IMGs.
- In the HCHS medical workforce as a whole the equivalent figures were 39% women among UKMGs, and 32% among IMGs in 2007. In 2006, in the (pre-MMC) senior house officer (SHO) grade, 53% of UKMGs and 34% of IMGs were female (and 47% of all doctors in the grade were IMGs).

Detailed modelling of the future medical workforce was beyond the scope of this report. Based on current trends, it seems likely that women will comprise the majority of the NHS’s medical workforce in England sometime between 2017 and 2022. If, as currently expected, the number of IMGs qualified outside the EEA and working in the NHS falls substantially in the next few years, the 50% female level might be reached more quickly.

International comparisons show that the proportion of women in medicine is increasing rapidly in many other countries. The current proportion in the UK is fairly typical of Western European countries, and slightly higher than in Australia, Canada and New Zealand, with the USA having a lower but increasing proportion.

Almost all the countries identified as currently having more than 50% women doctors were ex-Soviet bloc countries, including many of the recent EU accession countries of Eastern Europe. Countries with less than 25% of women were mainly less affluent countries in Africa and Asia.

**Specialty preferences and choices**

The substantial body of research on the career preferences of cohorts of UKMGs over the past 30 years has indicated some consistent aggregate differences between young women and young men at the beginning of their medical careers, although there is also considerable overlap.3

- Young women have consistently been more likely than men to have an early preference for general practice, although the proportions of either sex having general practice as first choice has fallen since the early 1990s. Women have also been consistently more likely than men to express early preferences for obstetrics and gynaecology, paediatrics and pathology.

- In successive surveys, higher percentages of males than females have consistently identified surgical specialties as their preferred career option from an early stage. As the number of women in successive cohorts has risen, the number of women with surgical specialties as their first preference has risen. But the relative gender difference has changed little.

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3 References to UKMG cohort studies are mainly to the work of the UK Medical Careers Research Group.
The general medical group as a whole and anaesthetics attract similar proportions of men’s and women’s early first preferences.

Early specialty preferences are not necessarily maintained over time, but changes are not random. Rather than focus on first preferences alone, it may be more helpful for future research to focus on the sets of possible options that young doctors consider and the patterns of any subsequent changes.

Early preference for general practice is highly predictive of final career destination. The proportion of a cohort preferring general practice tends to increase with time since graduation for both women and men (although males remain less likely than females to do so).

Few doctors move the other way, from early preference for general practice to hospital specialties, and few who did not express early preference for surgery have a surgical specialty as their career destination.

In cohort surveys, a higher percentage of women report that they are uncertain about their future specialty choice at all stages. This may have implications for the expectation under MMC as initially implemented, that doctors commit to specific specialist training pathways two years after graduating.

Intrinsic characteristics of the work in different specialties and individuals’ appraisal of their aptitudes and experience are consistently rated as the factors most influencing early career preferences for both women and men. Ratings of extrinsic factors, such as availability of posts, working hours and compatibility with domestic responsibilities become more salient over time, with women tending to place more importance than men on factors such as the last two.

Doctors who express early preferences for, and eventually enter, obstetrics and gynaecology and trauma and orthopaedic surgery are less likely to rate factors relating to working hours and conditions as important than those preferring other specialties.

Data on the trends in the gender distribution of doctors in NHS training posts for different specialties show broadly similar patterns to those found in career preference surveys.

General practice has recruited a higher proportion of women than men for many years. Since 2001, the proportion of women among general practice registrars has been 60–61%.

Since 2004, more than half of all NHS GPs in England aged less than 50 have been female. On current trends, the majority of all GPs in England will be female by about 2013.

The number of young males in general practice fell between 1996 and 2007, resulting in a net reduction (albeit of less than 300 doctors) in the number of NHS GPs in England aged less than 45 compared to 1996.

In the 2007 MMC/MTAS specialty training selection process, 41% of UKMG women applying for ST1 posts gave general practice as their first choice, compared to 29% of UKMG males. Almost two-thirds of acceptances were of females.

Although there is not an overall shortage of eligible applicants for general practice training posts at present, general practice appears to have been a relatively less attractive career for young male UKMG doctors in recent years compared to the expanding hospital sector.
If this gender difference in career preference remains, moves to increase the proportion of UK medical graduates entering general practice to the equivalent of 50% of a graduating cohort could lead to increased divergence in the gender ratios prevailing in general practice compared to hospital medicine in the future.

In 1996, women comprised 33% of all HCHS doctors in the registrar grade in England. In 2006, they comprised 40%. The number of women registrars almost doubled, while the number of men increased by nearly 50%.

Women comprised more than 50% of all registrars in five specialty groups in 2006: clinical oncology, obstetrics and gynaecology, paediatrics, pathology and public health.

In 2006, only three specialty groups had less than 40% women registrars: accident and emergency, anaesthetics and the surgical group, although the proportion in the first two was close to 40%. The proportion of registrars in the NHS surgical group who were female rose from 11% to 18% between 1996 and 2006, with variation between specialties within the group.

In one specialty group, radiology, the percentage of women registrars decreased very slightly between 1996 and 2006 – although the number of women registrars almost doubled. A factor here may be the changing character of some radiological work, with an increase in invasive procedures.

Within the ‘physicianly’ specialties, in 2007, more than 50% of SpRs in the RCP’s trainee database were female in dermatology, haematology, medical oncology, palliative medicine, and rheumatology; but less than 40% in the acute specialties of cardiology, gastroenterology, neurology, and renal medicine.

The MMC statistics on applications and acceptances for HCHS ST1 posts in 2007 indicate that gender differences in specialty choice are continuing. Overall, UKMG women comprised 54% of applicants and 57% of acceptances. More than 70% of UKMG applicants and acceptances in obstetrics, paediatrics and public health were women. The only specialties in which less than 40% of acceptances were women were clinical radiology, ophthalmology and surgery. (Even so, women comprised 30% of UKMG acceptances for surgery.)

If these patterns are maintained, within a decade women will probably make up the majority of newly certificated trained specialists (and hence consultant appointments) in all specialty groups except radiology, ophthalmology and surgery.

Comparison of the UK with seven affluent Western countries showed great similarities in the distribution of doctors between specialties. The highest percentages of women are generally found in primary medical care (where this exists), obstetrics and gynaecology, and paediatrics, and the lowest in the surgical specialties and acute medical fields such as cardiology.

Comparisons over time and between countries suggest that, as the proportion of women entering medicine increases, gender differences in the aggregate patterns of specialty choice will not necessarily disappear.

Medical specialties differ in their characteristics. In our report, we focused on two particular dimensions of the clinical workload and its organisation:
(a) the realistic–social dimension, the relative orientation of the work to technology and complex procedures compared to communication skills

(b) higher or lower predictability and plannability of the work.

At present, the proportion of women is highest in the specialties with relatively predictable working patterns, particularly in those that combine this with a high orientation to communication skills and patient interaction rather than technical procedures. This seems unlikely to change dramatically in the immediate future, given the consistency of evidence found about young doctors’ career choices.

However, it is possible that changes in job design, particularly the move to more scheduled shift work, may lead to more predictable working patterns (albeit not necessarily confined to ‘office hours’) in some acute specialties. Average contracted working hours for full-time NHS doctors are likely to decrease further with full implementation of EWTD. These changes may have implications for flexible working opportunities and, possibly, for the distinction between ‘full-time’ and ‘less than full-time’ working. They are also likely to have implications for workforce capacity and patient care.

Looking ahead, as the increasing intake of women into medical school moves into postgraduate training, it is possible that, if major differences remain between specialties in the predictability of working patterns, differences in the gender ratio between different specialties may increase rather than decrease. If, however, working patterns in acute specialties become more predictable, then more women may enter these fields.

Modes of working in medicine

There is little evidence as yet about the impact of increased shift working and other policy-related changes in doctors’ working patterns, let alone about how these changes will interact with the increase of women in medicine. The increase in women is expected to lead to a decrease in workforce participation, for example, through more frequent career breaks and higher rates of part-time working. It is also often claimed that generational differences are emerging in doctors’ attitudes to the long working hours and intensive professional commitment traditionally associated with successful medical careers.

Gender and generational changes are likely to interact. Indeed, one obvious difference between current cohorts of medical students and those of 30 years ago is that women are now the majority, rather than the minority. Expectations among young doctors of both sexes about future professional and family lives may be very different from those held by 1970s qualifiers.

Since the 1970s, highly qualified women have tended to defer motherhood, and to take less time out of the labour market for childrearing. Of all the women doctors working in the NHS in England in 2007, 43% were under the age of 35. Many of these will not yet have started families.

The proportion of all doctors who are women of child-bearing age is set to increase very considerably in the next decade as larger graduating cohorts, with a higher proportion of women, begin their careers.

Policy-led changes in doctors’ working patterns are also creating generational changes. Cohorts of doctors qualifying in recent years already experience rather different working patterns,
particularly in their early years in hospital medicine compared to their predecessors, with
intensive shift work tending to replace the traditional junior doctors’ rotas of long days combined
with frequent on-call nights and weekends. This may change further with full implementation
of EWTD and other changes to clinicians’ ‘working days’.

Consideration of future trends in modes of working is hampered by the lack of evidence available
about current doctors’ modes of working. In particular, there has been relatively little longitudinal
analysis of individuals’ working patterns over the course of their careers, rather than cross-
sectional surveys. The results of general survey questions about doctors’ future plans in respect
to career breaks and part-time working should be treated with caution for planning purposes.

It is sometimes claimed that women who train in medicine are less likely than men to remain
in the profession, or that there is a substantial pool of ‘wasted’ women doctors who could be
brought back. No good evidence has been found to support these claims for past cohorts.
Approximately three-quarters of both women and men in cohorts qualifying in the 1970s and
1980s were working in the NHS 25 years later.

Medicine, at present, is characterised by very high long-term retention rates compared to other
comparable professions. Medical women have long had much higher participation rates than
women in the UK in general. Should evidence emerge of an increase in young doctors permanently
exiting medicine, this would represent a major change.

Cohort surveys do indicate that, after the early post-qualification years, at any single point of
survey, women are more likely than men to be on career breaks, and that maternity leave and
childcare are the most common reason for this. Such breaks are generally reported as being
temporary. This is an area where more longitudinal data would be valuable, particularly about
the length of such breaks and the working patterns resumed after return from maternity leave.

Although the data are not very satisfactory, the NHS workforce census and cohort surveys of
UKMGs indicate that, although the majority of women doctors are currently on full-time
contracts, they are more likely than men to work part time. Few men currently work part time.

► In 2007, about 15% of the total NHS medical workforce in England were on part-
time contracts, and the estimated NHS participation rate was that there were 95 full-
time equivalents (in terms of contracted activities) for every 100 doctors in the NHS.

► In the HCHS sector, 8% of men and 21% of women doctors were on part-time
contracts, with participation rates of 97 and 93 per 100 doctors respectively for males
and females.

► In general practice, 12% of men and 49% of women were on part-time contracts,
with participation rates of 97 and 88 per 100 respectively.

► Long-term follow-up of past cohorts of UKMGs suggests that the FTEs available to
the NHS for doctors 15 years after graduating, taking into account career breaks and
less than full-time working (LTFT), was 60% for every 100 women qualifiers and 80%
for every 100 men.

The increase in women is likely to lead to a decrease in the proportion of all doctors on full-
time contracts and in the NHS participation rate, at a time when average full-time hours may
be decreasing under EWTD.
Cross-sectional survey data indicate that the proportion of all NHS trainees working ‘flexibly’ (part time) at any point in time is small: less than 5% of all trainees in 2007, comprising 8% of women and less than 1% of men trainees. Currently, the vast majority of flexible trainees are SpR/StRs.

The percentage of all trainees on flexible contracts does not appear to have increased in recent years, although the numbers have.

A recent survey found that surgical specialties had the lowest percentage of flexible trainees, and women surgical trainees were less likely to be in flexible training posts than their female peers in other fields.

There is little information about what proportion of trainees have episodes of flexible training or how long such episodes are, nor about the impact of such episodes on career progress, or on subsequent working patterns.

It is not clear how far the apparently low ‘uptake’ of flexible training is a consequence of genuine lack of demand, difficulties in arranging posts, and/or concern about the career consequences of opting for flexible training. The 2007 PMETB survey of trainees found that 70% of females and 92% of males did not wish to train flexibly at the time of the survey.

On the basis of evidence from 1990s qualifying cohorts, the majority of current trainees will not have children during their first five years post-qualification, and many will postpone parenthood until completion of training. For doctors of both sexes, early parenthood is associated with early moves into general practice. Increases in the proportion of graduate entrants may lead to an increase in the proportion of doctors with families earlier in their medical careers.

In 2007, 14% of all NHS consultants in England were on part-time contracts, comprising 30% of all women consultants and 8% of all men, with 60% of all part-time consultants being female. Interpreting trends in data on contracts and participation rates over time is problematic because of changes in the contracts, but the number of part-time women consultants has increased by nearly 200% since 1996.

Comparison of NHS participation rates in 2007 (for England) indicates that for every 100 female consultants employed, there were 6 fewer FTEs for the NHS than for every 100 male. Part-time female consultants have an average NHS participation rate of about 70 FTEs per 100 doctors.

There is little difference in NHS participation rates of female consultants aged less than 45 years and those of 45 years and over, although younger male consultants have higher average participation rates than their older colleagues.

There have been small but consistent differences in NHS participation rates between consultants who qualified in the UK and IMGs. In 2007, among consultants aged less than 45 years, women qualifying outside the EEA had slightly higher participation rates than UK-trained males. Possible reasons for this were not investigated, but they might include differences in the distribution of UKMGs and IMGs between specialties, or in their participation in academic medicine or private practice.

These percentages do not include those on maximum part-time contracts. FTE calculations do take account of private practice and academic commitments.
Specialties with the highest proportion of women consultants tend to have the highest proportion of part-time consultants. Only in obstetrics and gynaecology, anaesthetics, cardiology and surgical specialties (excluding ophthalmology) are less than 20% of female consultants on part-time contracts.

Part-time working is more frequent in career grades for both women and men in general practice than in HCHS, although men on part-time contracts in general practice may be more likely to hold more than one post simultaneously.

Recent changes to the GP contract have led to an increase in salaried positions in general practice, although, at present, salaried doctors are a small proportion of the total GP workforce. In 2005, 71% of salaried GPs were female, and 64% were working less than full time (LTFT).

If salaried work increases as a mode of working in the long term, and if the majority continue to be women working part time, this could have major implications for the future organisation of NHS general practice in England.

A recent research report has suggested that full-time female consultants might be less productive in terms of average annual completed patient episodes than their male peers in some specialties. The findings are not necessarily generalisable to all specialties, and differences between subspecialties and in contractual commitments may account for much of the difference found, but this is an area where further research would be valuable.

Precise comparisons of women’s modes of working in different professions are impossible because of the major differences in work organisation between, for example, the commercial service and the public sector. In general, women in other professions are likely, as in medicine, to work shorter hours, and to be in salaried positions rather than owner-managers where this option exists (although some of the difference will be due to the younger average age of women).

International comparisons of modes of working within medicine are also hard to make with any degree of precision. The extent of part-time work among the female workforce generally varies considerably between countries, with Britain having higher rates than in most European countries. These differences cannot be attributed solely to variations in provision of state subsidised childcare.

Where alternatives coexist in a national healthcare system, in general women are more likely than men to be found in salaried practice rather than independent private practice (although there are exceptions). This may be partly a consequence of differences in specialty choice already discussed, and also of women’s younger average age.

**Advancement and leadership capacity**

The UK medical profession is unlikely to face a leadership deficit in the foreseeable future simply as a result of a decline in the numbers of male entrants, because there has not been a decline. More men have entered UK medical schools in every year since 2000 than ever before, potentially to compete with the growing number of women for the limited number of elite leadership positions, such as presidents of medical royal colleges.

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Professional leadership is, however, exercised at many levels, in the delivery of clinical services, in medical management, in medical politics and professional organisations, and in clinical academia. It is therefore relevant to consider trends in advancement through the career structure more generally.

In NHS general practice, leadership at the level of service provision has traditionally been in the hands of single-handed or partner practice owners. In 2006, 1 in 4 multi-partner practices had at least as many women partners as men.

Past trends suggest that, as the increased proportion of women moves into older age groups, they are likely to enter into equity partnerships and eventually achieve parity or seniority. But if salaried status becomes more established as a long-term career option for women, this might not occur. This would have consequences for professional leadership in general practice.

The core leadership role in hospital medicine at clinical level is that of consultant. In 2007, almost 28% of NHS consultants in England were female. This is lower than the percentage of women among UK qualifying cohorts at present (c60%) or in the recent past (over 50% since 1997). But the comparison is misleading if taken to indicate women’s lack of advancement compared to men. It compares a large stock with a small inflow, and ignores the fact that almost 30% of NHS consultants are IMGs.

Focusing only on UKMGs consultants in England aged less than 45 reveals a higher proportion of women: 47% of the small number aged less than 35, 36% of those aged 35–39, and 34% of those aged 40–44 in 2007. These percentages are still lower than might be expected if, within a given cohort qualifying in the UK in the 1990s, women and men set foot on and advanced up the hospital career ladder at exactly the same rates. But some difference is to be expected. More women will have opted for general practice at a very early stage or taken career breaks and/or trained part-time for a period, thus delaying completion of specialist training.

Reflecting the differences in career choice summarised earlier, the proportion of women among younger consultants varies between specialties. In 2007 women were the majority of consultants aged less than 45 in public health, paediatrics and clinical oncology, and had representation of more than 40% in pathology, obstetrics and gynaecology and psychiatry. The surgical group had slightly over 10% of women among its younger consultants.

That a high proportion of women who began training in particular hospital specialties in the early 1990s have obtained consultant posts is not surprising. Workforce planning has attempted to link training opportunities to predicted demand for consultants, and overall demand has expanded in the last decade, although some specialties have been more competitive than others.

In NHS hospital medicine as a whole, overall prospects for advancement to consultant posts for women (and men) appear to have been high, at least in recent years, compared to the prospects of achieving partnership in large commercial accountancy or legal firms where there is high attrition from competitive ladders, and working part time is reported to be a major impediment to career progress or to achieving partnership. In NHS medicine, working reduced hours has clearly been compatible with holding consultant appointments in many specialties.

At the same time, in 2007, women were 40% of all doctors in the non-consultant career grades in hospital medicine, and 66% of UKMGs in such grades (with 44% on part-time contracts). NHS trusts’ demand for such posts may increase in the future to cover shifts under EWTD and
to reduce the service’s dependency on trainees without excessive costs. It is possible that this might limit opportunities for LTFT or other forms of employee-initiated flexible working in consultant posts. Similarly, if a tiered structure within the consultant grade develops, tiers might differ in the scope offered for reduced commitment.

Clinicians at all levels in the NHS are being encouraged to develop leadership and management skills, and to become involved in NHS management structures. At present, there are very few women doctors in NHS trust board level positions as medical directors or professional executive chairs of primary care trusts, rather than as directors of public health.

Assessing trends in women’s participation in leadership of professional organisations is difficult because numbers are so small, with chance variation in, for example, college council membership from year to year. And the lower proportion of women in older cohorts of doctors needs to be taken into account, given that most professional leaders will be senior members of the profession.

Of 18 medical royal colleges, 10 have had at least one female president. All colleges had women on their councils in 2008. For four colleges, all for specialties with a high percentage of women consultants, more than one-third of council members were women.

Clinical academics exercise professional leadership through developing the profession’s knowledge base and in teaching. There has been much recent concern about recruitment, retention and promotion problems in clinical academia generally, and among women in particular.

In 2007, women comprised only 12% of all clinical professors on university contracts. In 2006, six medical schools were reported as having no female professors and two out of 34 medical school deans were women.

The triple requirements of research, training and patient care for clinical academics may be particularly hard to reconcile with LTFT, and career breaks may pose problems for maintaining research. These may act as disincentives for women to enter and remain in academic positions. Recruitment and retention of clinical academics may become a greater problem as the proportion of women in the profession increases.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ACCS</td>
<td>Acute care common stem</td>
</tr>
<tr>
<td>A&amp;E</td>
<td>Accident and emergency</td>
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<tr>
<td>AMA</td>
<td>American Medical Association</td>
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<tr>
<td>BMA</td>
<td>British Medical Association</td>
</tr>
<tr>
<td>CCST</td>
<td>Certificate of Completion of Specialist Training</td>
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<tr>
<td>CCT/GPCCT</td>
<td>Certificate of Completion of Training/General Practice</td>
</tr>
<tr>
<td>CESR</td>
<td>Certificate of Eligibility for Specialist Registration (Article 14)</td>
</tr>
<tr>
<td>CMO</td>
<td>Chief Medical Officer</td>
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<tr>
<td>CMT</td>
<td>Core medical training</td>
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<tr>
<td>COPMeD</td>
<td>Conference of Postgraduate Medical Deans</td>
</tr>
<tr>
<td>DH</td>
<td>Department of Health</td>
</tr>
<tr>
<td>ENT</td>
<td>Ear, nose and throat surgery (otorhinolaryngology, head and neck surgery)</td>
</tr>
<tr>
<td>EWTD</td>
<td>European Working Time Directive</td>
</tr>
<tr>
<td>FCE</td>
<td>Finished consultant episodes</td>
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<tr>
<td>FTE</td>
<td>Full-time equivalent</td>
</tr>
<tr>
<td>FTSTA/FTSA</td>
<td>Fixed-term specialty training approved (post)</td>
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<tr>
<td>GMC</td>
<td>General Medical Council</td>
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<tr>
<td>GMS</td>
<td>General Medical Services</td>
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<tr>
<td>GP</td>
<td>General practitioner</td>
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<tr>
<td>GUM</td>
<td>Genito-urinary medicine</td>
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<tr>
<td>HCHS</td>
<td>Hospital and community health services</td>
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<tr>
<td>HEFCE</td>
<td>Higher Education Funding Council (England)</td>
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<tr>
<td>HEI</td>
<td>Higher education institution</td>
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<tr>
<td>HESA</td>
<td>Higher Education Statistics Agency</td>
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<tr>
<td>HSMP</td>
<td>Highly Skilled Migrants Programme</td>
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<tr>
<td>IMG</td>
<td>International medical graduate</td>
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<tr>
<td>LTFT</td>
<td>Less than full time</td>
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<tr>
<td>MMC</td>
<td>Modernising Medical Careers</td>
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<td>MSC</td>
<td>Medical Schools Council (formerly CHMS)</td>
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<td>MTAS</td>
<td>Medical Training Application Service</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>-----------</td>
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<tr>
<td>MWF</td>
<td>Medical Women's Federation</td>
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<td>MWSAC</td>
<td>Medical Workforce Advisory Committee</td>
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<tr>
<td>NCCG</td>
<td>Non consultant career grade</td>
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<tr>
<td>NEMS</td>
<td>National Expansion of Medical Schools</td>
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<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>NHSE</td>
<td>NHS Employers</td>
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<tr>
<td>NHS IC</td>
<td>NHS Information Centre</td>
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<tr>
<td>NHS WRT</td>
<td>NHS Workforce Review Team</td>
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<tr>
<td>NTN</td>
<td>National training number</td>
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<tr>
<td>O&amp;G</td>
<td>Obstetrics and gynaecology</td>
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<tr>
<td>ONS</td>
<td>Office for National Statistics</td>
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<tr>
<td>PA</td>
<td>Programmed activity</td>
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<tr>
<td>PCT</td>
<td>Primary care trust</td>
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<tr>
<td>PHM</td>
<td>Public health medicine</td>
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<tr>
<td>PMETB</td>
<td>Postgraduate Medical Education and Training Board</td>
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<tr>
<td>PMS</td>
<td>Personal medical services</td>
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<tr>
<td>RCP</td>
<td>Royal College of Physicians (of London)</td>
</tr>
<tr>
<td>RCS</td>
<td>Royal College of Surgeons (England)</td>
</tr>
<tr>
<td>RT</td>
<td>Run-through training</td>
</tr>
<tr>
<td>SASG</td>
<td>Staff and associate specialist grade</td>
</tr>
<tr>
<td>SHO</td>
<td>Senior house officer</td>
</tr>
<tr>
<td>SpR/STr</td>
<td>Specialist registrar/specialty registrar</td>
</tr>
<tr>
<td>ST1-4</td>
<td>Specialist training (numbers refer to level of training post)</td>
</tr>
<tr>
<td>T&amp;O</td>
<td>Trauma and orthopaedic surgery</td>
</tr>
<tr>
<td>UCAS</td>
<td>Universities and Colleges Admissions Service</td>
</tr>
<tr>
<td>UCCA</td>
<td>Universities Central Council for Admissions</td>
</tr>
<tr>
<td>UGC</td>
<td>University Grants Committee</td>
</tr>
<tr>
<td>UKMG</td>
<td>UK medical graduate</td>
</tr>
<tr>
<td>VTN</td>
<td>Visiting training number</td>
</tr>
<tr>
<td>WDAT</td>
<td>Workforce Directorate Analysis Team</td>
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</tbody>
</table>
Introduction to the project

1.1 The initiative behind this project can be partly traced to a media controversy. In August 2004, Professor Dame Carol Black, then President of the Royal College of Physicians, found herself quoted on the front page of national newspapers under such headlines as ‘The medical time bomb, “too many women doctors”’ (Independent, 2 Aug 2004) and ‘Influx of women will harm medicine’ (Daily Telegraph, 3 Aug 2004).

1.2 The context for Dame Carol’s comments to the press was a recognition of the changing composition of the UK medical school intake. Since the early 1990s, the majority of those training in the UK for medicine – for a profession that was not only once predominantly male but had explicitly raised barriers to women’s entry – have been women. In her original interview, Dame Carol had raised questions about the possible implications of this development for the profession – questions that, judging from the furore that followed, clearly aroused strong feelings in the profession as well as having national news value in an otherwise uneventful week in August.

1.3 What is important to recognise about Dame Carol’s questions is that they were distinctly different from the more usual questions of whether women face discrimination and unfair barriers in the medical profession. By contrast, Dame Carol asked what difference might a change in the proportion of women to men make to a profession, to how its work was organised and to its role in society?

1.4 The answer to these questions could be that it makes no difference. If there were no aggregate differences between the women and the men who enter medicine in the distribution of such factors as:

- their attitudes, abilities and career aspirations
- the circumstances affecting their professional careers
- the attitudes that clinical colleagues, patients, employers and policy-makers have towards them

then the change would make no difference. Women and men would be completely interchangeable. But if, for whatever reason, there are some aggregate differences, then a change in the gender composition might well have some impact. For example:

- If women doctors work on average fewer hours than men, the difference would become more significant as the proportion of women rises, which could have implications for medical workforce planning (McKinstry 2008).
- If women doctors are less likely to have health and disciplinary problems, this might have implications for patient safety and malpractice costs (Firth-Cozens 2008).

1.5 As these examples indicate, there is a body of research evidence which shows that there are some aggregate differences in the career choices and working patterns of female and male doctors in the UK. The brief for this project was to review this evidence in order to:
investigate the likely impact on medicine of the increasing proportion of women entering the profession

identify and clarify factors of potential importance to policy-makers.

1.6 The work was commissioned in two phases: Phase 1 was a rapid fact-gathering exercise, compiling currently available information in five main areas:

1) on trends in entry to medical education in the UK and comparative data internationally and for other comparable professions

2) for those who qualify in medicine, on gender patterns in specialty choices, and comparative analysis of career advancement over time

3) on comparative wastage and productivity, such as the extent of part-time working in UK medicine

4) on modes of working and productivity in other countries and in other professions

5) on the representation of women in senior decision-making positions in the profession.

1.7 Following the compilation of a substantial body of published literature and statistical sources, further work was commissioned in Phase 2 to extend the analysis in four main areas relating to medical careers:

1) entry to the profession

2) specialty preferences and choices

3) modes of working

4) advancement and leadership within the profession.

1.8 These are the four areas that form the framework for the main chapters of this report following this introduction, and a chapter summarising the methods used. Although, for clarity, these four issues are presented as analytically separate issues, in practice they interact with one another.

1.9 In the rest of this chapter, some context for understanding current and likely future developments in the medical workforce is outlined in order to orientate the reader. Before this, it may be helpful to summarise some basic facts about the current situation with respect to women and men in the UK medical profession.

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1 The decision was taken early in the project that analysis of data on the medical workforce in the NHS would focus mainly on the situation in England. Although there is increasing divergence in healthcare organisation between the constituent administrations in the UK, many of the findings of the report and the issues identified will be relevant to Scotland, Wales and Northern Ireland. Doctors move between the administrations and many medical institutions have a UK-wide remit.
The intake to UK medical schools

1.10 In the academic year 2007–8, some 18,500 candidates applied to UK medical schools, of whom almost 8,000 were accepted. Women comprised 56.6% of these applicants and 56.5% of acceptances.2

The medical workforce in the NHS in England3

1.11 In 2007, women comprised approximately 40% of all the doctors working in the NHS (and the vast majority of UK doctors work in the NHS). But the percentage varies between grades and fields of medicine.

1.12 Women were 42% of all the general practitioners (GPs) working in the NHS in England in 2007 (14,003 out of 33,364). Within the hospital and community health services (HCHS) women comprised 28% of all the 33,674 NHS consultants. The distribution of women in the 13 different HCHS specialties/specialty groups for 2007 used in the NHS workforce census is shown in Table 1.1.4

1.12.1 Table 1.1 shows that there were seven, mostly small specialty groups in which more than 30% of consultants were female. Only in the surgical group were less than 10% of all consultants female.5

1.12.2 Table 1.1 also shows that more than 40% of all female consultants were in four specialties, paediatrics, pathology, psychiatry and public health, compared to only 23% of all male consultants.

1.12.3 The most striking difference was that, while there were more male consultants in the surgery group than in any other group (almost 25% of all male consultants), just under 6% of all female consultants were in this group.

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3 Data from NHS Information Centre (2008a, c). GP figures are for ‘practitioners’ excluding retainers and registrars.
4 In this report, general medical practice (primary medical care) is included as a specialty unless the context makes clear that reference is only to those fields that have been traditionally ‘hospital based’ in the NHS (or community and public health), ie the HCHS specialties. Moves to relocate some ‘hospital services’ to primary care facilities may alter the boundaries between the two sectors’ workforces in the future.
5 This is the NHS surgery group, including ophthalmology and excluding oral and maxillo-facial surgery (see below and Chapter 4).
Table 1.1  HCHS medical and dental consultants (numbers) by specialty group and gender, NHS England, 2007.

<table>
<thead>
<tr>
<th>Specialty Group</th>
<th>F nos</th>
<th>Total nos</th>
<th>% F of total</th>
<th>% of M consultants</th>
<th>% of M consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident &amp; emergency</td>
<td>174</td>
<td>749</td>
<td>23.2</td>
<td>1.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>1,380</td>
<td>4,791</td>
<td>28.8</td>
<td>14.8</td>
<td>14.0</td>
</tr>
<tr>
<td>Clinical oncology</td>
<td>193</td>
<td>506</td>
<td>38.1</td>
<td>2.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Dental group</td>
<td>168</td>
<td>700</td>
<td>24.0</td>
<td>1.8</td>
<td>2.2</td>
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<tr>
<td>General medicine group</td>
<td>1,882</td>
<td>7,517</td>
<td>25.0</td>
<td>20.2</td>
<td>23.1</td>
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<tr>
<td>Obstetrics &amp; gynaecology</td>
<td>494</td>
<td>1,506</td>
<td>32.8</td>
<td>5.3</td>
<td>4.2</td>
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<td>Paediatrics</td>
<td>967</td>
<td>2,198</td>
<td>44.0</td>
<td>10.4</td>
<td>5.0</td>
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<tr>
<td>Pathology group</td>
<td>946</td>
<td>2,460</td>
<td>38.5</td>
<td>10.1</td>
<td>6.2</td>
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<tr>
<td>Public &amp; community health</td>
<td>438</td>
<td>897</td>
<td>48.8</td>
<td>4.7</td>
<td>1.9</td>
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<td>Psychiatry group</td>
<td>1,492</td>
<td>3,957</td>
<td>37.7</td>
<td>16.0</td>
<td>10.1</td>
</tr>
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<td>Radiology group</td>
<td>668</td>
<td>2,133</td>
<td>31.3</td>
<td>7.2</td>
<td>6.0</td>
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<tr>
<td>Surgical group</td>
<td>526</td>
<td>6,260</td>
<td>8.4</td>
<td>5.6</td>
<td>23.6</td>
</tr>
<tr>
<td>Total</td>
<td>9,328</td>
<td>33,674</td>
<td>27.7</td>
<td>(n=9,328)</td>
<td>(n=24,346)</td>
</tr>
</tbody>
</table>

Source: NHS Information Centre (2008c).

1.13  Table 1.2 shows a more detailed breakdown for the single largest HCHS specialty group, the medical (or ‘physicianly’) specialties, using the categories recorded in the NHS medical workforce census.\(^6\)

1.13.1  While overall, 25% of consultant physicians are female, the proportion varies between specialties, from approximately 12% in cardiology to over 60% in the small specialties of clinical genetics and palliative medicine.

1.13.2  The specialty with the largest number of women consultants is geriatric medicine, followed by dermatology, while for men, it is general internal medicine, followed by cardiology. A larger proportion of all male physicians, compared to females, are in gastroenterology, general medicine, and neurology. Women physicians are relatively more likely than males to have specialised in palliative medicine, clinical genetics and genito-urinary medicine.

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\(^6\)  Many physicians hold dual specialist registration, usually in general (internal) medicine and another specialty.
1.14 Table 1.3 shows the distribution of consultants by gender within the surgical specialties. The percentage distribution of all male and all female surgeons by specialty is calculated on the basis of the nine surgical specialties within the remit of the Royal College of Surgeons of England (RCS), ie including oral and maxillo facial surgery (OMFS) but not ophthalmology – which reduces the number of women ‘surgeons’ below the total recorded in NHS data for the ‘surgical group’.

| Table 1.2 Consultants in the general medical group by gender, NHS England, 2007. |
|-----------------------------------------|---------------------|------------------|------------------|------------------|
|                                        | F nos   | Total nos | % F of total | % of all F physicians | % of all M physicians |
| Cardiology                             | 89      | 752       | 11.8          | 4.7               | 11.8              |
| Clinical genetics                      | 78      | 122       | 63.9          | 4.1               | 0.8               |
| Dermatology                            | 206     | 444       | 46.4          | 10.9              | 4.2               |
| Endocrinology & diabetes               | 95      | 455       | 20.9          | 5.0               | 6.4               |
| Gastroenterology                       | 90      | 597       | 15.1          | 4.8               | 9.0               |
| General internal medicine              | 184     | 965       | 19.1          | 9.8               | 13.9              |
| Genito-urinary medicine                | 135     | 327       | 41.3          | 7.2               | 3.4               |
| Geriatric medicine                     | 233     | 889       | 26.2          | 12.4              | 11.6              |
| Infectious diseases                    | 20      | 104       | 19.2          | 1.1               | 1.5               |
| Medical oncology                       | 69      | 225       | 30.7          | 3.7               | 2.8               |
| Neurology                              | 86      | 539       | 16.0          | 4.6               | 8.0               |
| Palliative medicine                    | 129     | 202       | 63.9          | 6.9               | 1.3               |
| Rehabilitation medicine                | 28      | 101       | 27.7          | 1.5               | 1.3               |
| Renal medicine                         | 72      | 355       | 20.3          | 3.8               | 5.0               |
| Respiratory medicine                   | 98      | 539       | 18.2          | 5.2               | 7.8               |
| Rheumatology                           | 133     | 465       | 28.6          | 7.1               | 5.9               |
| Other*                                 | 137     | 436       | 31.4          | 7.3               | 5.3               |
| **Total**                              | **1,882**| **7,517**| **25.0**      | **(n=1,882)**     | **(n=5,635)**     |

Source: NHS Information Centre (2008b).
*Specialties with fewer than 100 consultants.
1.14.1 Within the nine surgical specialties, there were more than 1 in 10 female consultants in only three fields, all fairly small: OMFS, paediatric surgery and plastic surgery.

1.14.2 Women surgeons were relatively more likely than males to be in general surgery, ear, nose and throat (ENT) surgery and plastic surgery, and less likely to be in trauma and orthopaedic (T&O) surgery.

1.15 These figures give a snapshot of the distribution of women and men in the stock of trained doctors in the NHS in 2007. Clearly, by then, the proportion of women in the NHS medical workforce was already considerable. In most HCHS specialties, the percentage of women consultants was between 30 and 45%, as it was in general practice. Although there was considerable overlap in the distribution of men and women between specialties, there were, however, some differences.

There were three women GPs for every two women consultants (14,003 compared to 9,328). Among men, there were fewer GPs than consultants (0.8:1, or a total of 19,361 GPs and 24,346 consultants).

### Table 1.3 HCHS consultants (numbers) in the surgical group by gender, NHS England, 2007.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Female (nos)</th>
<th>Total (nos)</th>
<th>% F of total</th>
<th>% of all F surgeons</th>
<th>% of all surgeons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiothoracic surgery</td>
<td>11</td>
<td>266</td>
<td>4.1</td>
<td>2.9</td>
<td>4.6</td>
</tr>
<tr>
<td>General surgery</td>
<td>146</td>
<td>1,757</td>
<td>8.3</td>
<td>38.4</td>
<td>30.7</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>10</td>
<td>197</td>
<td>5.1</td>
<td>2.6</td>
<td>3.4</td>
</tr>
<tr>
<td>Otolaryngology (ENT)</td>
<td>50</td>
<td>548</td>
<td>9.1</td>
<td>13.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Paediatric surgery</td>
<td>17</td>
<td>104</td>
<td>16.3</td>
<td>4.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Plastic surgery</td>
<td>32</td>
<td>261</td>
<td>12.3</td>
<td>8.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Trauma &amp; orthopaedic surgery (T&amp;O)</td>
<td>60</td>
<td>1,760</td>
<td>3.4</td>
<td>15.8</td>
<td>30.7</td>
</tr>
<tr>
<td>Urology</td>
<td>23</td>
<td>528</td>
<td>4.4</td>
<td>6.1</td>
<td>9.2</td>
</tr>
<tr>
<td>Oral and maxillo facial surgery (OMFS)</td>
<td>31</td>
<td>308</td>
<td>10.1</td>
<td>8.2</td>
<td>5.4</td>
</tr>
<tr>
<td>All RCSE surgical specialties including OMFS</td>
<td>380</td>
<td>5,729</td>
<td>6.6</td>
<td>100 (n=380)</td>
<td>100 n=5,729</td>
</tr>
<tr>
<td>NHS surgical group except ophthalmology*</td>
<td>349</td>
<td>5,421</td>
<td>6.4</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>177</td>
<td>839</td>
<td>21.1</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>NHS surgical group including ophthalmology*</td>
<td>526</td>
<td>6,260</td>
<td>8.4</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Source: NHS Information Centre (2008b).
*Excludes OMFS.
Women comprised more than 40% of GPs, and of consultants in some HCHS specialty groups, including paediatrics and public health, and in some medical specialties. In contrast they were less than 10% of consultants in most of the surgical specialties.

The most striking difference in the distribution across the specialties is that the percentage of all male consultants who were surgeons was four times that of their female counterparts.

1.16 What gives rise to these particular distributions? Are they likely to persist in the future as more women enter the profession? Do variations in the percentage of women in different specialties have any consequences for specialties and for patient care? These are the kind of questions that this report aims to examine. Before doing so, a brief account is given of some recent developments in medical education and health services policy that have shaped the context in which more women have been pursuing medical careers. Those who are very familiar with this context might wish to skip the remainder of this chapter.

The UK medical profession: stocks and flows

1.17 In any discussion of the impact of the increase of women in UK medicine, it is important to keep clear the distinction between the stock of doctors in the profession and the flows in (and out) of the profession. The stock is the number of doctors in the profession at any given time, determined by the cumulative balance between the numbers entering and leaving (the flows) over time. If the stock is large relative to flows, it may take many years for a change in flow to have any impact on the stock.

1.18 Since the creation of the NHS, successive UK governments, with the profession, have attempted to monitor and plan the size of the medical workforce for the NHS, mainly by controlling flows, rather than leave the balance between supply and demand to market forces. Detailed consideration of these attempts and the results of workforce planning lies outside the scope of this project, but recent problems have led to recommendations for increased investment and improved mechanisms, as well as to continued debate about the appropriate size of the stock (Department of Health 2008b; House of Commons Health Committee 2007; Tooke 2007; Wanless et al 2007).

1.19 Determining the size of the stock, the numbers ‘in’ the UK medical profession, for workforce planning purposes is not as straightforward as it might seem, as there are several ways of defining who is to be counted as ‘in’ the profession. In recent years, estimates of how many doctors there are in the UK have been based on one or more of three main sources: the General Medical Council’s (GMC) Register, the Decennial Census, and the annual medical workforce censuses conducted by the NHS in the different parts of the UK. As will be explained in Chapter 3, each source is counting a slightly different population, none of which is entirely satisfactory for this project. In particular, there is, at present, a lack of routinely collected data identifying professionally inactive doctors in the UK who might potentially return to medical work.

1.20 The flow in to the UK medical profession is from two main sources: the output of UK medical schools; and entry of doctors qualifying overseas, so-called international medical graduates (IMGs). Outflow is mainly through retirement, with some loss of working-age doctors.
through emigration, exit of overseas-qualified doctors, or simply leaving the profession. The topic of this project is the implications of one particular change of inflow: an increase in women among UK medical schools’ intake and hence among UK medical graduates (UKMGs). As Chapter 3 will show in detail, this increase needs to be understood in the context of other inflow changes.

1.21 Since 1948, the number of places available at UK medical schools has been set by government, as part of NHS workforce planning. So, for more than fifty years, the number of UK-trained entrants to medicine, as for veterinary medicine and dentistry, has been much more strictly controlled than the numbers entering private sector professions such as law or accountancy, with the aim of training only the number of doctors that the NHS is expected to need (or to be able to afford). In practice, however, demand for doctors in the NHS has repeatedly exceeded workforce planning predictions.

1.22 After a period of relatively little growth, numbers have increased sharply since 1997, particularly between 2000 and 2007, as a programme of national expansion of medical schools (NEMS) has been implemented, with the creation of new medical schools and the expansion of existing ones. Annual intake of medical students in the UK rose from about 5,000 per annum to almost 8,000 between 1998 and 2007. This expansion had two explicit aims: to make the country self-sufficient in doctors and to widen access to medical education (Department of Health 2004b).

1.23 As the reference to the goal of self-sufficiency implies, the UK has not been self-sufficient in doctors for the most of the NHS’s history. As well as a long tradition of IMGs coming to the UK for specialist training, many have also come to provide essential services, on a temporary or permanent basis, to offset shortages of indigenous recruits. In the last decade, notwithstanding the expansion of UK medical school intake, there continued to be extensive recruitment of IMGs to the UK, driven at local level by the goal of increasing NHS capacity under the NHS plan (Department of Health 2000b).

1.24 Information about IMGs’ movement in and out of the UK is generally poor, but the following points can be made.

- About half of all new registrations with the GMC in recent years have been of IMGs; but it is not known how many of these were working or resident long-term in the UK (Wanless et al 2007).
- In 2007, approximately 1 in 5 NHS GPs and 1 in 3 of all NHS hospital doctors in England were IMGs.
- The median length of ‘first work episode’ for IMGs joining the NHS for the first time between 1993 and 2004 was four years, but this varied according to doctors’ age, specialty and country of qualification (Hann et al 2008).

1.25 Historically, most IMGs coming to the UK have been from Commonwealth countries, particularly from the Indian subcontinent. In recent years, the number coming from within the

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7 This expansion of medical schools has been UK-wide, although it has been the responsibility of the different national administrations.
European Economic Area (EEA) has been increasing. Under European legislation, these doctors have rights to work and reside in the UK, unlike IMGs from elsewhere whose movement is potentially subject to control by immigration regulation as well as by professional registration stipulations.

1.26 Because of the problems arising in 2007 from too many applicants for specialist training positions (see below), there are currently proposals to restrict the recruitment of IMGs from outside the EEA (ex-EEA) to UK postgraduate medical training posts. At the time of writing, the precise details are not settled, and impact of this is unclear. But a marked decrease in the number of ex-EEA IMGs entering the NHS, at least for training, is likely in the immediate future, although entry of doctors from the EEA may increase (Tooke 2007).

Modernising Medical Careers

1.27 In 2007, the coincidence of large-scale recruitment of IMGs into the NHS positions, the coming onstream of the expanded UK medical school output, and the attractions of the UK’s training opportunities for EEA doctors, were major factors in the controversy surrounding the implementation of a new specialist postgraduate training structure in the NHS, known as Modernising Medical Careers (MMC). The online application system was overwhelmed by the number of applicants, many of whom were IMGs already working in England or hoping to come. Of the 32,649 applicants for 23,247 specialist training (ST) posts, 13,593 were from ex-EEA IMGs (41.6%) (Tooke 2007: 66).

1.28 Following this debacle, there have been official enquiries into the MMC programme and its implementation, with some interim modifications already in place and further changes possible in the future (House of Commons 2007; Tooke 2007). Whatever its future shape, understanding the aims of MMC and the problems that it was intended to resolve, is important for understanding the current and immediate future career opportunities for doctors in the UK.

1.29 In clinical medicine in the NHS today, completing a programme of formal postgraduate specialist clinical training (CCST or now CCT) (or having alternative learning and experience formally approved), entitles doctors to have their names on the GMC’s specialist register. This is a prerequisite for, but not a guarantee of, success in obtaining a career grade position as a clinically autonomous doctor. For the vast majority, such positions have conventionally been either as a GP or as a consultant in a specialist field based in the hospital, community or public health services. The expected length of training varies between specialties but all require a mixture of apprenticeship – that is, learning on the job under supervision, which reduces as trainees gain experience and competence – and passing formal examinations.

1.30 Throughout its history, the hospital sector of the NHS has experienced tension between training and service requirements. The number of doctors required to fully staff the service has generally been greater than the number of trainees required to fill available consultant positions, expansion of the latter being generally limited to preserve the standing of the consultant role (and to limit expense). For much of the NHS’s history, the tension was managed by relying heavily on a large number of doctors in training positions but with little prospect of promotion, to provide front-line medical services under consultant supervision.

1.31 Doctors who were unsuccessful in this competitive structure might enter general practice, take non-consultant posts, or leave the UK (many of them being IMGs). But, in the course of
trying to ascend the ladder, many doctors spent many years as members of a ‘lost tribe’ of junior doctors, working in insecure, uncoordinated posts (Chief Medical Officer (CMO) 2002). This may have had advantages in providing young doctors with extensive clinical experience and time to determine which specialty they preferred. But it was frustrating for individuals pursuing unattainable ambitions, and, arguably, inefficient, as it made specialist training in the UK longer than many thought necessary. (In addition the constant relocation and insecurity may have posed particular problems for women doctors and dual-career partnerships.)

1.32 The difficulties in ‘Achieving a balance’ (Department of Health 1988) – the appropriate title of a discussion document published twenty years ago – between training and service demands, together with the requirements of a European directive to formalise criteria for specialist registration (as distinct from appointment as a consultant) have led to major reforms to postgraduate training in recent years. These began with the ‘Calman reforms’ to higher specialist training in the mid-1990s and, so it was hoped, culminated in the MMC reforms (Department of Health 1993; UK Departments of Health 2004). Alongside the MMC reforms, there has been a major overhaul of the formal training programmes in recent years, with new syllabi approved by the Postgraduate Medical Education and Training Board (PMETB) in association with the medical royal colleges and faculties.

1.33 Key features of these reforms to career and training structure included the following, all intended to create smoother, more rapid progress towards completion of postgraduate training:

- The number of opportunities to embark on specialist training are now planned, for each specialty, in the light of expectations of future demand for trained specialists. In the HCHS, a system of national and visiting training numbers (NTNs and VTNs) linked to higher training grade posts was established in the 1990s, as were more formalised linkages between posts to create a more orderly progress. Obtaining a training number became crucial for progress as a potential specialist.

- The PMETB reforms to training requirements shifted the criteria for successful completion of training away from time serving per se towards documented experience and assessed acquisition of competence in clinical skills and knowledge.

- MMC brought the critical stage of obtaining entry to specialist training earlier, following a two-year foundation training. By creating formally designated ‘run-through’ (RT) posts, MMC aimed to increase the chances of those who succeeded in gaining such a post being able to move smoothly to CCT, but simultaneously, limited the prospects of those who did not. This was at the root of trainee doctors’ anxiety over the MMC specialist selection process in 2007. MMC also brought selection for training in general practice into the same system as hospital medicine.

- Given an explicit policy intention to move towards a consultant- or specialist-delivered rather than a consultant-led NHS service, built into the MMC structure was the expectation that the ratio of doctors in training to established specialists (consultants) would fall.

1.34 However, alongside this emerging streamlined training structure, local NHS employers have needed to staff their hospitals by continuing to appoint relatively inexperienced doctors to posts which, although paid on training grade pay scales, lack approval for training purposes. At
the same time, there has been renewed debate about the role of so-called non-consultant career grade (NCCG) doctors, also known as specialist and associate grade doctors (SASGs) – doctors with substantial experience and formal training, but who, for whatever reason, are not appointed to consultant posts (NHS Employers 2007; Tooke 2007).

1.35 The significance of these changes to the training structure for medical women’s career advancement is examined in detail in Chapters 4 and 6. But there are further developments relating to the demand for doctors and the ways in which their work is organised, which interact with changes to the training structure, and which warrant introduction here.

Re-organising doctors’ days (and nights)

1.36 The working patterns and practices of current and future cohorts of doctors will be shaped by external and demand-side changes which may make their experiences very different from those of their predecessors. These changes include general legal and social policy developments applying to the UK workforce as a whole, such as statutory extensions of maternity leave provisions or of rights to request part-time work for some categories of workers, and health and safety protection measures.

1.37 One of the most significant of these at present for the NHS is the European Working Time Directive (EWTD), which is having a major impact on doctors’ working patterns, particularly on trainees for whom opting out of EWTD is not currently an option. Under the current EWTD proposals NHS doctors’ permitted working hours are being reduced to a maximum of 48 hours per week, including time spent on-call but not working, from August 2009.

1.37.1 New arrangements for unsocial hours’ and emergency cover in hospitals are being introduced, particularly increased shift working and cross-specialty cover rather than on-call rotas. EWTD has also been a major factor in the increase in service-only and non-consultant career posts, as well as in schemes involving new roles for nurses. Concern has been raised about the implications for patients of the reduction of trainees’ clinical experience and the reliance on alternative provision (eg Royal College of Anaesthetists and Royal College of Surgeons of England 2008).

1.38 Technological innovations and government policies bring further pressures for reorganising medical work. For example, the increase in day-surgery; transfer of some activities from general hospitals to tertiary specialist centres; moves to extend access to non-emergency medical services outside conventional working hours and for better primary care in deprived areas; and the proposed establishment of ‘polyclinics’ (community-based centres for specialist diagnostic and treatment services) all have implications for established divisions of labour and modes of working within medicine and in the healthcare workforce as a whole (see eg Department of Health 2004a; 2007; 2008a, b).

1.39 The consultant role, what is required to become a consultant, and the relationship between consultants and other doctors may be being affected by the moves to streamline and shorten the specialist training ladder under MMC; to provide more specialist-delivered services, and to accommodate both the requirements of EWTD and reduced reliance on trainees for service provision.

1.39.1 New contracts and job plans for NHS consultants (and, for many, new employers in the form of Foundation Trusts), have, in the last decade, made more explicit many aspects of formal
working arrangements, including specification of working hours and time allocation between different activities (National Audit Office 2007; Williams and Buchan 2006).

1.40 The contracts under which NHS GPs in England work have also changed considerably in the last decade. For example, many GPs in England have relinquished responsibility for out-of-hours emergency cover, but have subsequently been encouraged to provide extended opening hours for routine services, as well as an increased range of preventive and disease management services (House of Commons Committee of Public Accounts 2008).

1.41 One effect of all these changes may be to increase the demand for medical employment that is flexible from the employer’s perspective, eg to cover shifts in acute, inpatient specialties, and to provide out-of-hours care in general practice, and to make doctors more substitutable for each other (NHS Employers 2007). In hospitals, the ratio of doctors in training to consultants is likely to fall, with a possible increase in those on non-consultant service-only contracts (Tooke 2008).

1.42 A second effect is that total NHS working hours (including any on-call commitments) for many full-time doctors are likely to be decreasing. Among new generations of junior doctors, many may never experience the very long working days and frequent on-call nights that were routine for most of their predecessors (although it would be premature to regard these as consigned permanently to the past). At the same time, the intensity of actual hours worked may be increasing, and working hours may be differently arranged, for example into permanent shifts rather than office hours plus on-call rota hours.

1.42.1 Such changes may have implications for the opportunities available for less than full-time work, and, indeed, for the very distinction between full-time and less than full-time working, and for what it might mean for doctors to seek a good ‘work–life balance’.

1.43 Last, but not least, the balance between over- and under-supply of doctors relative to job opportunities in the NHS is not constant and, with the recent expansion of UK medical schools coming fully onstream, the next decade may see more doctors relative to available posts in the UK than has been the case for the last two decades, although this will partly depend on the future flows of IMGs.

1.44 These changes, some of which will be discussed in more detail in Chapters 4 and 5, are largely unrelated to the increase in women doctors, but will interact with that increase in complex ways. For example, centralising some specialist services at tertiary centres while relocating others to local ‘polyclinic’ facilities may have major implications for existing staff’s practicable travel-to-work distances, which are more probably more constrained among those with childcare or other caring responsibilities.

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8 In the literature on the medical workforce, ‘flexible working’ is often used as a synonym for ‘part-time working’, or ‘less than full-time working’, ie it refers to patterns of working where total working hours are less than some full-time norm, with the arrangement of those reduced hours left unspecified. In the literature on employment in general (and perhaps increasingly in healthcare settings), the term ‘flexible’ tends to have a much wider denotation, in that flexibility may take many forms, not necessarily involving reduced hours, and is often worked at the behest of an employer. In this report, the context should make clear the specific meaning being attributed to the term ‘flexible’.

9 Some of the implications of this for career posts are discussed in Chapter 6.
1.45 It is, therefore, important that proposals for service redesign take account of the changing gender composition of the workforce (without losing sight of the primary aim of providing the best possible patient service).

**The dynamic division of medical labour**

1.46 Modern medicine offers a great variety of career options for the newly qualified doctor. In 2008, there were 57 specialties recognised by the DH, each with their own professional organisations and training requirements, and more than 30 subspecialties. There are also many forms of medically related work outside the NHS but within the UK, for example, clinical work in the independent healthcare sector, research careers in biomedical science or medical journalism, as well as overseas. There is less information about careers in these fields, so most of this report concentrates on careers in the NHS where the vast majority of UK doctors work for at least part of their careers.

1.47 Within the NHS, the pattern of job opportunities is set by policy considerations and employer demands, rather than by market forces, to a greater extent than in many other western health systems. As already noted, NHS workforce planning has attempted to determine appropriate levels of intakes into medical school and the training opportunities in different specialties in relation to the expected career opportunities in different specialties, through negotiation between the service and the profession. Predictions about future needs will be based on current and expected future recruitment patterns, demographic trends and many other factors.

1.48 Within medicine, different fields may require (or attract those with) different aptitudes and abilities, and they also offer different working conditions and intrinsic and extrinsic rewards. At any given time, some may be more competitive to enter, or offer more opportunities for flexible or part-time working, than others. For an individual neophyte faced with immediate career decisions, many of these factors may appear fixed but, over time, this is not always so. Technological and policy change can affect the work involved within specialties, or the allocation of tasks between specialties, or lead to the emergence of new specialties and subspecialties. Demand for some specialties and, as a result, job opportunities and competitiveness, and the intrinsic character of some of the work may alter because of changes in disease patterns or demography, or technological developments.

1.49 The dynamic character of medical specialisation is one reason why workforce planning is so complex and difficult, especially as it takes many years to train (or retrain) as a specialist. Examples of recent change include the following:

- Within surgery adoption of new procedures and improved technique may increase demand, while the adoption of non-surgical treatments for certain conditions may reduce it, as has happened in some forms of cancer recently.

- A well-documented recent example of the partial substitution of surgery by medical treatments is increased use of angioplasty performed by cardiologists instead of coronary artery bypass grafts performed by cardiothoracic surgeons.

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10 Doctors working in the NHS do so under relatively standard salary scales across different branches of medicine, at least in the early stages of their careers. There is scope for variation in earnings between and within specialties, through clinical excellence awards, extra duty payments etc, but the variation is probably less than across most private sector professions.
Improved anaesthesia and less invasive techniques have permitted greater use of day case and short stay procedures, while also permitting more high-risk, time-consuming procedures to be undertaken.

Within some fields of radiology, invasive investigative techniques are being increasingly employed.

Within urology, the role of ‘core urologist’, combining medical and surgical expertise is expanding relative to urological surgery.

1.50 Consideration of the possible implications of the increasing proportion of women entering medicine needs to take account of the major changes and challenges affecting the workforce. Changes in the distribution of women within UK medicine will, to some extent, depend on changes in the demand for different specialties. A marked increase in the proportion of women entering a particular specialty is relatively unlikely if recruitment is at a low level, while high demand creates more opportunities, although this is not, in itself, a sufficient condition for more women to enter a given field.

1.51 As noted earlier, the last decade, and particularly the period 2000 to 2006, following the publication of the NHS plan for the NHS in England (Department of Health 2000b), saw a large expansion in the demand for doctors, expressed in the creation of more medical school and postgraduate training places, the recruitment of large numbers of IMGs, and many new consultants to rapidly increase capacity in the NHS.

1.51.1 As a result the total number of medical and dental staff working in the HCHS in England grew by 41.6% (from 66,836 to 94,638) between 1997 and 2007, with the number of consultants increasing by 56.8% (from 21,474 to 33,674), and the FTE figures increased by 53.3 and 60.0% respectively.

1.51.2 In NHS general practice in England, the number of GP practitioners grew from 28,046 to 33,364, an increase of 19.0%, while FTEs increased by 17.4%.

1.51.3 So, not only was there unprecedented expansion in the overall numbers, but the English NHS hospital sector has increased much faster than primary medical care. Whereas in 1997, there were around 6,500 more GPs than consultants (<6,700 more FTEs), by 2007, there were 310 more consultants than GPs (494 more in FTEs) (NHS Information Centre 2008a, c).

1.52 The number of consultants in all specialty groups within the HCHS increased over this decade. The rate of expansion varied, however, between specialties, as shown in Table 1.4. Only four specialty groups showed an increase of less than 50% – public health, pathology, radiology and obstetrics and gynaecology (O&G). The distribution of the overall stock of consultant posts between specialty groups did not, however, change markedly over the decade.

1.53 One implication of this expansion in the decade leading up to 2007 is that the prospects of achieving an NHS consultant post in England would have been relatively good for those who qualified in the first half of the 1990s (although this might not have been apparent to all seeking such posts at the time). The rate of expansion has slowed in hospital medicine since 2005, and

11 FTE comparisons in both HCHS and general practice over the decade should be treated with caution because of coding changes.
1.153.1 It has been recommended that, in the future, among cohorts of newly qualifying doctors, at least half should train as GPs, to reduce inequalities of access, support the move of services to primary care, and perhaps in response to the increased proportion of GPs who are working part time (a development described in Chapter 5) (Department of Health 2008b; Postgraduate Medical Education and Training Board 2008b).

1.154 In other specialties and subspecialties, training and job opportunities will vary considerably, not least because they vary so much in size, and in their geographical distribution – with some likely to be increasingly concentrated in tertiary centres, while others might become more dispersed into community-based settings. In some specialties, including some fields of surgery, where planned expansion is close to being achieved or where there is thought to be an excess of trainees relative to career posts, there may be reduction in training numbers to avoid...

1.55 However imperfect the first year of implementing the MMC reform of specialist training, the demand for trainees in the National Specialty Training Selection Process in 2007 provides an approximate baseline estimate of predicted future demands for trained doctors in different specialties. The number of posts initially predicted to be available at ST1 level were agreed by deaneries and trusts in accordance with workforce planning targets for new specialist appointments in about 6-8 years’ time (rather less for GPs) and with service needs.12 There was some adjustment of numbers of posts made available during the year, because of the controversy surrounding the process, and data reporting may be incomplete, but are still a useful indication of demand.

1.56 Figure 1.1 shows the percentage of ST1 acceptances by specialty as reported at the end of 2007 in England. The distribution of the 6,270 ST1 posts available in round 1 for 2008, and the predicted distribution of 6,300 CT1/ST1 posts initially identified for 2009 are very similar, with a slight rise in the percentage of total posts predicted in general practice and a very slight fall in the percentage expected to be in surgery.13

1.57 Whether these predictions turn out to be accurate estimations of future demand in the long-term is less important for this report than what they indicate about the situation facing young doctors starting their specialist training now and over the next few years. In 2009, 2 of every 5 training opportunities are likely to be in general practice, and this proportion will

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Fig 1.1 Service demand profile. ST1 acceptances, MMC/MTAS 2007: percentage by specialty.
Source: Workforce Directorate Analysis Team (WDAT).

13 www.mmc.nhs.uk. Competition information and posts by deanery. Accessed 01/12/08. The 2009 numbers are only predictions, and changes may partly reflect reduced numbers of fixed-term specialty training approved (FTSTA) posts now that the ‘bulge’ of 2007 applicants has passed.
probably increase in the future. Just under 1 in 5 posts could be the first stage of the career ladder in the medical specialties, and about 1 in 10 for surgical specialties. All the remaining specialties are likely to share just under one-third of CT1/ST1 posts between them.

1.58 The publication of competition ratios (applications per post in the previous round) by MMC means that current and future cohorts of newly qualified doctors should have much more information about the scale of and competition for job opportunities in different specialties than their predecessors. It is too early to establish whether this will have any long-term effect on young doctors’ specialty preferences and career choices, which have been extensively studied in recent years and which will be discussed in detail in Chapter 4.

1.59 The next chapter presents a brief account of the methods used in collecting and analysing information for this project. Following this, the attention moves entirely to detailed study of the evidence relating to the increased entry of women to the UK medical profession, and its implications.
2 Research methods

Introduction

2.1 Information for the project was obtained through three main methods: literature searching; retrieval and analysis of statistical data from relevant organisations; and qualitative data collected from two sources – four seminars and discussions with relevant individual informants.

2.2 The work was conducted largely by the principal investigator, with assistance from two postgraduate students, and advice from an expert social research methodologist. Working papers were submitted on a regular basis to a subgroup of the main steering group that was responsible for direct management of the project.

2.3 Although the work was commissioned in two phases, many of the data sources used in Phase 1 were reconsidered in more depth in Phase 2, so the description that follows covers both phases.

Literature search

2.4 As the project brief in both phases was broad – to describe and analyse what was known about a wide range of topics, rather than to explain specific patterns – a traditional highly structured systematic literature review was not appropriate, even if time and resources had been available.

2.5 An extensive bibliography was already available to the investigator because of previous research in the field. A fresh search was made of PubMed at the outset of the project, and updated at regular intervals subsequently, using search terms ‘women’ in conjunction with ‘medical education’, ‘medical profession’ and ‘careers’, confining the search to articles in English published in or after 1990. References relating specifically to medical careers and medical students, with abstracts that indicated they might be well-designed research articles or major reviews, were retained and copies obtained. Additional references were obtained from these publications and by contacting researchers active in research on medical careers in the UK and overseas (see Appendix 2).

2.6 Separate searches for references relating to women’s work in medicine and in other professions were conducted using social science sources, mainly key sociological journals covering gender and occupations, and by contacting researchers.

2.7 Reports and consultation papers on developments in NHS workforce policy or relating to professional training and organisation were retrieved from website searches or directly from relevant organisations.

2.8 Almost 200 items were obtained as a result of this search, and key details of these entered into an Endnote bibliographic database. While much of the material retrieved was potentially useful for contextual purposes, many of the empirical studies were not judged to be of high quality
because of weaknesses in research design or execution. It became clear that, for many areas identified in the research brief, there were few robust, recent published findings to draw on, apart from those obtained in the studies of cohorts of UK medical graduates described below. These have proved useful sources, together with secondary analysis of official and institutional data.

Official and institutional data sources

Statistics on candidates and entrants to medical school

2.9 Annual data on applications and acceptances to UK higher education institutions (HEIs), including medical schools, have been collected by the Universities and Colleges Admissions Service (UCAS) since 1996, and by the Universities Central Council for Admissions (UCCA) before 1996. The Higher Education Statistics Agency (HESA) is responsible for collecting information about students in higher education and graduates.

2.10 Downloadable Excel spreadsheets giving information on such variables as sex, ethnicity, age, qualifications and courses chosen for applicants and acceptances are freely available from UCAS for recent years (with some earlier data available in printed copy). These spreadsheets permit simple two-way analysis for some variables, although it is not always possible to separate pre-clinical medical and pre-clinical dental candidates.

2.11 Some further data on entrants to and graduates from medical schools were obtained from HESA to supplement UCAS data, but not used in this report.

2.12 One general limitation of the data available to the project was that it was not possible to distinguish graduate entry or access course applicants and entrants from standard entrants to first degrees in medicine, other than by proxies, such as age.

NHS and Department of Health medical workforce statistics

2.13 The main source of information about UK doctors for many research projects is the annual medical workforce census conducted each September by the NHS within each national administration since the mid-1960s, a source that is gradually being replaced by continual electronic record updating for NHS workforce planning. Although known to have some limitations and inaccuracies, these censuses were among the most useful sources of information for this project.

2.14 By definition this source collects data only on those doctors working in the NHS, which is thought to be over 90% of those active in the medical profession within the UK. For this project it was decided to use only the census data for England, as the increasing divergence of the NHS in the devolved administrations creates problems of comparison.

2.15 In these annual censuses, information is collected from payroll records for those working in hospital and community health services and, separately, for those in general practice. Variables in the database include doctors’ sex, age, grade or, more accurately, pay scale, specialty, type of contract with the NHS, country of primary medical qualification and ethnicity. The NHS Information Centre (and before 2005, the Department of Health) publishes some summary tables in hard copy and electronically. Extensive further information was supplied by the NHS Information Centre for this project in the form of Excel spreadsheets.
2.16 Three particular limitations of the workforce census data are worth noting.

- Because the data are based on payroll records, it is not possible to distinguish between doctors in approved training posts and doctors in service posts who are paid on ‘training and equivalent grades’.

- The reorganisation of training grades under the MMC programme is now limiting scope for analysis of trends over time. In particular, there are major discontinuities in the training grade data between 2006 and 2007.

- Information on less than full-time working is available in two forms: the type of contract that doctors are employed on and on the number of full-time equivalent doctors as well as head counts. Both measures have been considerably affected by changes in doctors’ contracts and coding rules over the last decade.

2.17 Additional information specifically relating to the 2007 National Specialty Training Selection process under MMC was supplied by the Department of Health's Workforce Directorate Analysis Team (WDAT). Some features of the 2007 process may turn out to be unique and there may be inaccuracies because of the problems with the Medical Training Application Service (MTAS). But because the new application process generated data that have not previously been available, it was thought useful to analyse the information.

Medical workforce information from medical organisations

2.18 A wide range of medical organisations, including medical royal colleges, specialist societies, the GMC, and two postgraduate deaneries, were contacted directly for information, particularly about doctors in training and consultant appointments, and also relevant websites were searched. In several cases, personal visits were made. Appendix 2 lists those contacted.

2.19 Although almost all the organisations contacted expressed support for the project, and many supplied useful information, overall the amount of usable data retrieved from these medical organisations was quite limited. There were several reasons for this.

- The timing of this project’s enquiries, mainly the second half of 2007, coincided with the controversy and consequent workload arising from implementation of the MMC programme for specialist training, and the failure of the MTAS application system. Deaneries especially were under great pressure.

- Although a number of the medical colleges conduct regular censuses of the consultant workforce and, in some cases, of higher trainees in their specialties, the design of these censuses varies too much to permit extensive comparison between specialties using colleges’ data.

- The trainee databases established by these organisations were often too new to have past-trend data, or data were incomplete. Moreover, some of the databases, being designed for administration purposes, could not be searched easily for research purposes.

2.20 Reports of some internal and commissioned surveys, such as those conducted in 2006 and 2007 for all NHS trainees by the Postgraduate Medical Education and Training Board (PMETB) were also obtained.
Information from cohort studies of UK medical graduates

2.21 In addition to information routinely collected by official and professional organisations, extensive use was made of studies of successive cohorts of UK medical graduates that have been conducted in recent years. Two sets of studies were particularly useful, with results obtained from publications and reports, and some additional unpublished findings supplied on request.

2.22 The first set were the series of regular surveys conducted on many cohorts qualifying between 1974 and the present by the UK Medical Careers Research Group (UK MCRG) based at Oxford University and funded by the Department of Health.¹

2.22.1 In general, UK MCRG surveys involve sending postal questionnaires at varying intervals to all members of selected qualifying cohorts known to be alive and not to have withdrawn consent. Questionnaires have generally included core questions about career preferences, posts held, factors influencing career choice, and some demographic information, with additional questions in particular surveys.

2.22.2 Response rates are generally high for surveys of this type (65–75%), although usually higher for females than males, and with lower response rates in more recent cohorts.

2.23 A second set of cohort surveys are those conducted by the British Medical Association (BMA). A ten-year longitudinal follow-up, with annual sweeps, of a representative sample of 1995 UK medical school graduates has now been completed. The initial cohort sample was around 500 graduates, of whom almost exactly 50% were female, and retention over the ten years was high (again higher for females). A second study of 2006 graduates is currently underway.²

2.24 These cohort surveys have the advantage of including doctors working outside the NHS, whether in the UK or overseas, those not working, and those in NHS locum posts that are not currently recorded in the NHS workforce censuses. A limitation, particularly of the BMA cohort studies, is that detailed analysis at specialty level is limited by small cell sizes in some specialties.

Information on medical women’s representation on elite leadership and decision-making bodies

2.25 Medical royal colleges and other professional leadership organisation were asked to supply information about present and past Council memberships (where this was not available from websites). Not all were able to supply past data.

2.26 The brief included the request to obtain information on women doctors’ involvement in NHS management. Use of a questionnaire to NHS trusts was ruled out as unlikely to generate sufficient response, so a search was made of all NHS trusts and authorities’ websites, via the NHS Choices web portal in October and November 2007 (see Chapter 6). Although information obtained via this route was incomplete, it is unlikely that other methods would have obtained a better response without unjustifiable expense and inordinate delay.

¹ See www.uhce.ox.ac.ukmcrgpublications.php for details of their work. No surveys were funded for a period from the late 1980s to early 1990s, so there is limited information for doctors who qualified in these years.

² See, for example, British Medical Association (2005; 2007).
Statistical information for international and inter-professional comparisons

2.27 The bibliography built up through the literature search and previous projects contained some relevant data on the medical workforce in different countries. Some statistical information is also published by Eurostat for EU countries, and for other countries by the World Health Organization. The RCP’s International Office circulated its representatives overseas. Further information was sought by searching websites or contacting researchers in several countries, including Finland, Norway, Canada, USA, France and Russia (see Appendix 2).

2.28 Similar methods, eg contacting professional societies, were used to obtain statistical information about the workforce in other comparable professions in the UK: the main ones considered were veterinary medicine, dentistry, pharmacy, accountancy, the legal profession and actuaries. In addition to the quantitative material obtained, qualitative information about other professions was obtained by means of a seminar, as described in the next section.

Seminars and interviews

2.29 An important part of the Phase 2 work was the series of four seminars, with invited attendees (almost 70 people in total), conducted between January and May 2008. Three were held at the RCP and one, with medical students, at the University of Cardiff. The purpose of these seminars was two-fold: to obtain information from attendees; and to get feedback on our findings from Phase 1.

2.30 Each seminar focused on a different stakeholder group:

- established members of the medical profession with special interest and expertise in relation to women doctors
- social scientists active in research on medical careers and/or women’s careers in the professions
- medical students (male and female) in their third and fourth years at the University of Cardiff
- established members of the other professions listed above.

2.31 Each seminar included a presentation from the researcher of some Phase 1 results, and was chaired and facilitated by members of the project steering subgroup. Sessions generally lasted approximately 3 hours including refreshment breaks. Notes were taken of the discussions and subsequently written up.

2.32 In addition to these seminars, a number of face-to-face or telephone discussions were conducted with relevant informants by the researcher, in some cases in conjunction with steering subgroup members. These included meetings with staff at several royal colleges, a postgraduate deanery, and the NHS Workforce Review Team.

The final report

2.33 The report takes the form of a narrative synthesis, integrating findings from the diverse range of data sources, in relation to the four main broad themes outlined in Chapter 1. Additional details of specific sources are included in the text or as footnotes where relevant.
3 Trends in entry to the profession

Introduction

3.1 According to all available evidence, the proportion of women in both the flow of new entrants into the profession and the stock of UK doctors has risen in recent years. Women have been the majority of the intake into UK medical schools since the early 1990s, and therefore the majority of graduates for about a decade. The percentage of women among all doctors working in the UK in 2007 is estimated to be approximately 40% (see below).

3.2 However, this project has found that some frequently made claims about the increase in the proportion of women in UK medicine are somewhat exaggerated. For example, suggestions that medical school intake is or soon will be 70% women, or that women are about to become the majority of those in the profession are not supported by current evidence.

3.3 This chapter begins by reviewing evidence on trends in entry to UK medical schools. It shows that, while the number and proportion of women entering medical schools has increased markedly over recent decades, the number of men has also risen recently, and the increase in women's entry has recently slowed.

3.4 Trends in applications and acceptances for medical school, and possible reasons for gender differences in these, are then discussed, and the trends placed in the wider context of entry to higher education generally, and to other professions.

3.5 As discussed in Chapter 1, graduates from UK medical schools are not the only entrants to the UK medical profession. Inflow also includes IMGs coming to the UK to pursue further training and/or permanent careers in medicine. Some evidence about their gender composition and the implications of possible changes in migration are reviewed in this chapter. This leads into some comments about the current and possible future trends in the stock of doctors in the UK.

3.6 Finally, selected data on international trends are then presented, which show that the proportion of women in medicine has been increasing in many other countries.

Trends in entry to UK medical schools

3.7 The background to the marked expansion of UK medical schools since 1997 has already been described in Chapter 1.

3.7.1 Between 1974/75 and 1998/99, the cumulative annual growth rate in the annual intake into UK medical schools was 2% (representing a total increase from 3,281 in 1974/1975 to 5,069 in 1998/1999).

3.7.2 From 1999/2000 to 2004/5 the cumulative annual growth rate was 8%, with the total intake in 2004/2005 reaching almost 8,000 per annum (Tooke 2007: 63).

3.8 It is clear that women have comprised the larger share of this recently increasing intake. But the increase in women began well before the recent expansion. Figure 3.1 shows the numbers of women and men entering UK medical schools since the 1960/61 year of entry, placing the recent growth in a longer historical context. From the mid-1960s, the number of women entering medicine
increased absolutely in every year up to 2004. The number of women entrants has exceeded the number of men in every year since 1992, except 1995, rising to 61.5% of the intake in 2003/4.¹

3.9 In contrast, the number of men entering UK medical schools did not show any sustained increase between 1980 and 2000. Men, however, have by no means ‘disappeared’ from UK medical schools in recent years. Their numbers increased by 31% between 2000 and 2004. Moreover, in subsequent years the numbers and proportion of males in the intake have risen slightly, while the numbers of female entrants fell a little (although still comprising a clear majority).

3.10 It appears that the rate of increase in women’s entry to medical school has stabilised as the current programme of expanding overall numbers of places has been completed. Whether or not this small change in the trend of the last 40 years will be sustained cannot be determined yet. What is clear, however, is that larger intake cohorts with larger proportions of women than ever before are now moving through medical schools, with the current output (graduates) being about 60% female (although this is set to fall slightly for 3–4 years from 2010).

Applications and acceptances for UK medical schools

3.11 For this report, a detailed analysis of trends in applications and acceptances/entrants to medical schools since 1996 has been undertaken, mainly using UCAS statistics on applicants and acceptances.² Table 3.1 shows the figures for applicants and acceptances for preclinical medicine for both sexes from 1996 to 2007 years of entry.

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¹ All figures for medical school applicants and acceptances in this and subsequent sections are from www.ucas.co.uk/statisticsonline unless otherwise indicated.

² The number of UCAS acceptances for preclinical medicine is very close to the numbers actually entering in a given year. The subject code allocated to individual applicants by UCAS is based on the predominant subject among the applications for particular courses made by the applicant (a maximum of four for medicine for most of this period). The result is that a small number of individuals who made at least one application for medicine, but more applications for another subject, may not be coded by UCAS as applicants in medicine.
3.12 Notwithstanding the expansion in total medical school places since 1999, the overall ratio of applicants to acceptances for 2007 entry was the same as in 1996 (2.4 applicants per acceptance), although it was lower between 1999 and 2003.

3.13 There was a fall in absolute numbers of applicants, particularly of male applicants, from 1998 to 2001, after which numbers of applicants of both sexes rose until 2005, both having fallen slightly since.

3.13.1 Research commissioned to investigate this fall concluded that there were several likely causes, including reduction in the numbers of men taking appropriate science A levels and increased popularity of some other degree subjects (such as computer science in the ‘dot-com boom’), but that levels were sufficient to maintain the standard of medical school intake (Grant et al 2002). As noted above, the fall in applications has subsequently been reversed, as have some of the causal trends.

3.14 Overall, between 1996 and 2007, there was an increase in both applicants and acceptances for both sexes; of 35.8% and 73.1% in male and female applicants, and 53.0% and 66.1% in male and female acceptances. Between 2000 and 2007, the period of most rapid expansion of places, the respective increases for applicants were 81% for males and 82% for females.

3.15 The upward ‘blip’ in applications for 2005 entry, and subsequent small fall might reflect a rush to beat the fee increase brought in for 2006 entry to English universities. Fluctuations in total applicant numbers are not directly reflected in acceptance numbers, given the national control of the latter, and the strong competition for places.

3.16 In every year between 1996 and 2007, females have been the majority of applicants as well as of acceptances, but the proportion of applicants who were female fell slightly between 2003 and 2006, in line with the small downturn in actual intakes of women discussed above, which is also shown in Table 3.1.

3.17 One notable feature of Table 3.1 is that, for every year since 1996, except 2007, women candidates were more likely than men to be accepted.

Possible explanations for the higher acceptance rate for female applicants to medical school between 1996 and 2006

3.18 As Table 3.1 shows, in every year between 1996 and 2006, the percentage of female acceptances was higher than the percentage of female applicants, indicating that, overall, female applicants are more likely to be accepted. For 2007/8 entry, however, there was no overall gender difference in acceptance rates.

3.19 The differences in any one year between 1996 and 2006 are quite small, but the trend was consistent over the period. Among the possible (and possibly interrelated) explanations for this generally greater acceptance rate among female applicants over the last decade are that:

- female applicants might, on average, have tended to be better qualified academically
- there might have been aggregate gender differences in socio-demographic characteristics which affected chances of selection, possibly through an effect on academic qualifications

3 The resulting report has much useful data about medical school applicants from the 1990s to 2002 (Grant et al 2002).
female applicants might, on average, tend to perform better in relation to the selection criteria used in addition to academic qualifications, such as interviews or personal statements.

differences between medical schools in application patterns and/or selection procedures might produce aggregate differences.

3.20 While detailed examination of these possibilities is beyond the scope of this project, some indicative data are presented here.

**Academic qualifications and medical school selection**

3.21 Academic qualifications of medical school applicants have been shown to be the main determinant overall of the chances of being accepted (McManus et al 2008). Applicants and those accepted to medical schools are in general very highly qualified academically.

In 2007, 85% of both male and female UCAS applicants for medicine had at least 360 UCAS tariff points. Since 2002, the mean tariff point score for accepted home domiciled applicants to preclinical medicine has been between 429 and 444, ie higher than ‘3 “straight As” at A2 level plus 1A at AS level.⁴

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**Table 3.1 Applicants and acceptances to UK medical schools (pre-clinical medicine), 1996–2007.**

<table>
<thead>
<tr>
<th>Year of entry</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>% F</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>% F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>5,950</td>
<td>6,075</td>
<td>12,025</td>
<td>50.5</td>
<td>2,230</td>
<td>2,664</td>
<td>4,894</td>
<td>54.4</td>
</tr>
<tr>
<td>1997</td>
<td>5,795</td>
<td>6,281</td>
<td>12,076</td>
<td>52.0</td>
<td>2,305</td>
<td>2,724</td>
<td>5,029</td>
<td>54.2</td>
</tr>
<tr>
<td>1998</td>
<td>5,637</td>
<td>6,170</td>
<td>11,807</td>
<td>52.3</td>
<td>2,277</td>
<td>2,842</td>
<td>5,119</td>
<td>55.5</td>
</tr>
<tr>
<td>1999</td>
<td>5,035</td>
<td>5,937</td>
<td>10,972</td>
<td>54.1</td>
<td>2,318</td>
<td>2,994</td>
<td>5,312</td>
<td>56.4</td>
</tr>
<tr>
<td>2000</td>
<td>4,455</td>
<td>5,771</td>
<td>10,226</td>
<td>56.4</td>
<td>2,406</td>
<td>3,308</td>
<td>5,714</td>
<td>57.9</td>
</tr>
<tr>
<td>2001</td>
<td>4,299</td>
<td>5,932</td>
<td>10,231</td>
<td>58.0</td>
<td>2,559</td>
<td>3,681</td>
<td>6,240</td>
<td>59.0</td>
</tr>
<tr>
<td>2002</td>
<td>4,921</td>
<td>7,014</td>
<td>11,935</td>
<td>58.8</td>
<td>2,723</td>
<td>4,236</td>
<td>6,959</td>
<td>60.9</td>
</tr>
<tr>
<td>2003</td>
<td>6,109</td>
<td>8,724</td>
<td>14,833</td>
<td>58.8</td>
<td>2,953</td>
<td>4,714</td>
<td>7,667</td>
<td>61.5</td>
</tr>
<tr>
<td>2004</td>
<td>7,670</td>
<td>10,156</td>
<td>17,826</td>
<td>57.0</td>
<td>3,187</td>
<td>4,768</td>
<td>7,955</td>
<td>60.0</td>
</tr>
<tr>
<td>2005</td>
<td>8,527</td>
<td>10,833</td>
<td>19,360</td>
<td>56.0</td>
<td>3,266</td>
<td>4,555</td>
<td>7,821</td>
<td>58.2</td>
</tr>
<tr>
<td>2006</td>
<td>8,379</td>
<td>10,570</td>
<td>18,949</td>
<td>55.8</td>
<td>3,309</td>
<td>4,702</td>
<td>8,011</td>
<td>58.7</td>
</tr>
<tr>
<td>2007</td>
<td>8,079</td>
<td>10,518</td>
<td>18,597</td>
<td>56.6</td>
<td>3,413</td>
<td>4,424</td>
<td>7,837</td>
<td>56.5</td>
</tr>
</tbody>
</table>

Source: UCAS. These figures include overseas applicants.

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⁴ UCAS tariff points are awarded for school leaving and other qualifications on a standard tariff. A grade A pass at A2 counts 120 points, a B grade 100 points etc. Because, in practice, medical schools use actual or predicted A level results (or a restricted set of equivalents), achieved tariff point scores are only an approximate guide to the academic qualifications actually used in medical school selection.
In 2006, medicine and dentistry programmes had the lowest acceptance rate per 100 applicants of any of the standard subject groupings used by UCAS (Purcell et al 2008: x).

3.22 Before the abolition of the quotas of places for women that were in place in some UK medical schools from 1948 to about 1970, female applicants for medicine typically had higher academic qualifications than males (and probably had to, in order to be accepted) (Elston 1977).

3.23 More recent studies have shown that, among school leavers, female applicants and those accepted to medical school had, on average, higher grades at A level (or other school-leaving qualifications) than males, at least from 1998 to 2005. This accounts for much of the difference in overall acceptance rates. In these studies, however, controlling for academic qualifications did not eliminate the greater likelihood of women being accepted compared to men, at least from 1996 to 2006 (eg Grant et al 2002; Parry 2007; Powis et al 2007).

3.24 Comparing acceptances to applicants within tariff bands above 240 points for 2006 indicates that female applicants aged under 21 were consistently more likely to be accepted than males within a given tariff band, including in the very highest band (540 or more points). But there were no significant differences in 2007. (This might be a consequence of the general improvement in A level grades leading to even more applicants of both sexes having very high scores.)

3.25 Before considering the role of other selection criteria, it is important to examine whether there are differences in the demographic profile of male and female applicants that may affect acceptance rates.

Socio-demographic factors and gender differences in acceptance rates

3.26 One explicit aim of the National Expansion of Medical Schools (NEMS) programme was to widen participation in medical education, particularly through expanding the number of shortened, graduate-entry programmes and creating opportunities for those who lack the conventionally required high school-leaving qualifications to enter, eg by taking specially designed access courses (Department of Health 2004b). Medical school applicants and intake have as a result become more diverse over the last decade, over and above the increase in women, although the vast majority of applicants and entrants still fit the ‘standard model’ of a school-leaver predicted to get, or already with, good school-leaving qualifications, usually in science.

3.27 In line with the expansion in opportunities for mature candidates, the proportion of all UCAS applicants and acceptances for medicine who were aged under 21 has fallen from 80% of applicants and 87% of acceptances in 2000, to 66% and 78% respectively in 2007. Older applicants...
are clearly less likely to be accepted than younger ones, suggesting that the competition for places on graduate entry courses is keener. They have also been slightly more likely to be male than among school-leaver applicants, at least until recently (see also Grant et al 2002).

3.27.1 Between 2003 and 2005, women were 58.6% of all home applicants aged under 21 but 54.3% of all those aged 21 and over. Women were slightly more likely than men to be accepted in both age groups, 53.2% of women applicants aged less than 21, and 31.9% of women aged 21 and over, compared to 48.7% and 28.9% of men in the respective age groups.

3.27.2 In 2007, there was no difference in the proportion of males in the two age groups and no gender difference within either age group in the acceptance rate.

3.27.3 It is possible that as graduate entry courses have become established, the profile of mature applicants and/or the selection procedures used for these courses by medical schools are changing.

**Social class**

3.28 While there is no reason to doubt the generally accepted view that a large proportion of applicants and acceptances to UK medical schools are drawn from relatively privileged socioeconomic backgrounds, the data collected by UCAS on parental occupation are not thought to be very reliable, not least because of the high rate of non-response to this section of the UCAS application form (British Medical Association 2004; Do et al 2006; McManus 2004; Powis et al 2007; Seyan et al 2005). For this reason, Do et al (2006) recommended using area deprivation codes in conjunction with the parental occupation data.

3.29 Using the limited parental occupation data available from UCAS, Grant et al (2002) found that there were no gender differences in the social class distribution of applicants to medicine in the years 1996–2000. Similarly, Do et al (2006) and the Futuretrack survey of 2006 UCAS applicants (Purcell et al 2008) also report that the social class backgrounds of female and male applicants to medicine are generally similar (and generally high).

**Ethnicity**

3.30 Young people from minority ethnic backgrounds as a whole, and from some particular minority groups, represent a larger percentage of applicants and acceptances for medical school than they do in higher education as a whole, and in the population as a whole (Purcell et al 2008).

3.31 Young white and young black men are both under-represented among medical school applicants and acceptances, relative to their presence in the relevant age group in the whole population, while both males and females of Asian origin and white women are over-represented (eg Goldacre et al 2004; Seyan et al 2004). This is shown clearly in Table 3.2, which compares the percentage of medical and dental school applicants and acceptances in 2007 with the acceptances for all degrees through the UCAS system in the same year, and with the ethnic composition among school pupils in England who were in their last full compulsory year of school in 2004.
3.31.1 The under-representation (shown in the lower three rows) of young white men, compared to white women, is striking (and there are also gender differences among the young black group), whereas there is no gender difference for the Asian group. Young white men appear to be much less likely to enter higher education at all, or to apply to medical school, than would be expected from their being over 40% of the potential applicant pool.

3.32 In recent years, there has been much controversy over the reasons for the lower acceptance rate among applicants to medicine from minority ethnic backgrounds (see British Medical Association 2004 for a summary). A recent analysis of UCAS medical school applicants, for the years 2003 to 2005, found that the proportion of ‘non-white’ applicants accepted was lower than that for ‘white’ applicants (40.5% compared to 57.3% overall). The analysis concluded that some of the difference was probably due to lower average A level scores among ‘non-white’ applicants for those aged less than 21 (McManus et al 2008).

3.32.1 That is, it is possible that young people from some minority ethnic backgrounds are more likely than their peers from the ethnic majority to apply for medicine, even if they do not have the very highest academic qualifications. This would be in accordance with the general finding that higher education applicants from ethnic minority backgrounds are more likely than those from the ethnic majority to apply for vocational degrees (Purcell et al 2008).

3.33 Among these 2003–5 applicants to medicine, there were also differences between ethnic groups in the gender ratio of applicants and acceptances. The percentage of ‘non-white’ applicants among males was slightly higher than among females (38.4% compared to 32.5%). Among females, 41.2% of ‘non-white’ applicants were accepted compared to 60.0% of ‘white’ applicants. Among males, the equivalent percentages of acceptances were 39.7% of ‘non-whites’ and 53.5% of ‘whites’. Overall, the largest group and the most likely candidates to be accepted were white females under 21. Non-white males aged 21 or over were the least likely group to be accepted (McManus et al 2008).

3.34 There is, therefore, some evidence that aggregate differences in the age profile and ethnic background between male and female applicants, which may be associated with different academic achievements and different levels of competition for particular courses, might account for some of the increased likelihood, overall, of female applicants being accepted compared to male applicants, for most of the last decade.

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### Table 3.2 Percentage of applicants and acceptances to medical schools and degrees in UK by ethnic group and gender, 2007, compared to ethnicity in 15-year-olds in 2004.

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th></th>
<th>Asian</th>
<th></th>
<th>Black incl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% M</td>
<td>% F</td>
<td>% M</td>
<td>% F</td>
<td>% M</td>
</tr>
<tr>
<td>Schoolchildren aged 15</td>
<td>42.0</td>
<td>41.5</td>
<td>3.3</td>
<td>3.2</td>
<td>1.6</td>
</tr>
<tr>
<td>All UCAS degree acceptances</td>
<td>33.6</td>
<td>42.8</td>
<td>4.6</td>
<td>4.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Medical and dental applicants</td>
<td>25.2</td>
<td>34.6</td>
<td>13.9</td>
<td>14.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Medical and dental acceptances</td>
<td>26.8</td>
<td>39.6</td>
<td>12.4</td>
<td>11.9</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Sources: UCAS (home students only) and Department for Education and Skills (2007) (maintained school pupils aged 15 in 2004).

*‘Other’ category, including mixed-race, not covered in other columns.
Other criteria in medical school selection

3.35 Although academic achievement remains paramount in medical school selection overall, criteria have been widened in recent years, with both less insistence on specific combinations of science A level (or equivalent) subjects and greater use of other criteria. Three main reasons underpin this change: concern to select future doctors with good communication and social skills rather than those who are just ‘good at school science’; the difficulty, as A level grades have risen, of distinguishing between large numbers of academically well-qualified applicants; and the moves to widen access to medical schools.

3.36 Some combination of interviews or interactive group exercises, information from applicants’ UCAS forms (personal statements, academic references and work experience) and specific medical school admission tests is, therefore, used in almost every medical school, although there is considerable variation between schools in the precise configuration and use of these elements (Parry 2006).

3.37 In the discussions of selection procedures at the seminars we held with representatives of the medical and other professions, the view was often expressed that, on average, young women tended to perform better in interviews than their male peers, being, it was claimed, both more articulate and clearer about their future careers. This was seen as a major factor in the (assumed) higher acceptance rates of women among standard school-leaver applicants. A further implication of these comments was that, among graduate entrants, gender differences in social and communication skills would be much less because the males would have gained greater maturity.

3.38 We have not identified any research data that directly bear on these claims, and would recommend further research on the relationship between selection methods, the socio-demographic composition of intakes and future career outcomes.

Variations between medical schools

3.39 Medical schools differ, not only in selection procedures, but also in the programmes that they offer, which will affect both applicants and intake. The age profile will vary between schools that offer only graduate entry programmes, those with only undergraduate programmes, and those that offer both. Mature students and those from some ethnic groups, especially women, may be particularly likely to apply to local institutions so that they can live at home, which, in the UK, is most likely to mean those located in major cities.

3.40 Access to current UCAS information relating applicants to specific institutions is limited for reasons of confidentiality; but data on candidates’ course choices or applications (not applicants) and acceptances for the medicine and dentistry subject group are available. Figure 3.2 shows the mean percentage of female applications and acceptances for 2002 to 2007, by medical schools in England, ranked by the mean percentage of female applications. The graph shows that there is some inter-school variation in the proportions of female applications, and rather more in relation to acceptances.7

3.41 For 17 of the 23 medical schools, the mean percentage of females accepted for medicine and dentistry was higher than the mean percentage of female applications, and the schools with

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7 As indicated, UCAS data for some schools include applicants and acceptances for dentistry courses.
the lowest percentage of female applications tend to have the lowest percentage of female acceptances. Interpreting any association is not straightforward.

- Firstly, would-be medical students can make applications to (currently) up to four medical schools, based on their personal preferences. Any of the schools applied to might make an offer, but the student can only accept one. Thus the number of acceptances from men and women at a particular school depends on decisions by both medical schools and applicants.

- Secondly, because absolute numbers of students accepted are small, there is likely to be some random variation between years. However, analysis of UCAS data on acceptances by institutions for 2002 to 2007 does indicate that there are some consistencies over time.

- There were four medical schools in England at which women were not the majority of acceptances in every year between 2002 and 2007 (Cambridge, Imperial College, Peninsula and University College London). For three of these schools, the percentage of women among acceptances did not exceed 60% in any of these years. Conversely there were six schools at which women were more than 60% of acceptances for at least 5 of the last 6 years.

3.42 The extent to which differences between schools are due to aggregate gender differences in candidates’ profiles or preferences for particular schools (type of curriculum, location etc); differences in schools’ selection processes; or just chance cannot be determined from UCAS data.

![Fig 3.2 Mean percentage female choices (applications) and acceptances 2002–7 for English medical schools: home students only (UCAS). *Less than 6 years entry; † includes dental school. Camb = Cambridge; Imp = imperial College; Penins = Peninsular; Manch = Manchester; UCL = University College London; Oxf = Oxford; UEA = University of East Anglia; St G = St George’s; Nott = Nottingham; Leics = Leicester; Q Mary = Queen Mary’s; Lpool = Liverpool; Newc = Newcastle; Sheff = Sheffield; Soton = Southampton; Birm = Birmingham; KCL = King’s College London; BrightSuss = Brighton and Sussex.](image-url)
Gender differences in medical school performance

3.43 A number of recent studies have reported that women medical students perform, on average, better than their male peers in examinations and clinical assessments; are more likely to achieve honours; and are more likely to graduate (eg Yates and James 2007). A systematic review of the factors associated with success in medical school confirmed this ‘superior’ performance of women as a consistent finding. But this study also noted that the differences were small and reached statistical significance only when the samples were large (Ferguson et al 2002), a finding subsequently corroborated by Kilminster et al (2007). It is also the case, in some of these studies, that, although mean scores were higher for women, the variance was greater for men.  

3.44 This pattern, of slightly higher average performance for women compared to men but greater variance among men, has been found in studies of gender and performance in higher education generally, so there may be nothing specific about medical education that produces these results.

3.45 There is a growing body of research into the lower average performance in assessment among medical students from ethnic minority backgrounds (eg McManus et al 2008; Woolf et al 2008). Possible interaction of gender and ethnic group differences in performance might be a fruitful area for future research.

Trends in applications and acceptances to UK medical schools in a wider context

3.46 In recent years, the mean UCAS tariff point scores of medical school applicants have been the highest among all UCAS subject groups, and the acceptance rate the lowest. There are, however, many respects in which the trends in applications and acceptances for medicine over the past 25 years are similar to those for higher education (HE) generally, and for many other professions with degree-entry portals. The most obvious of these has been the closing, and, in some respects, the subsequent reversing of a ‘gender gap’ as the number of women gaining good academic qualifications and entering HE has overtaken the number of men (Arnot et al 1999).

3.46.1 Women have been the majority of applicants and acceptances to HE since the early 1990s, and their numbers have continued to increase faster than men’s. Between 1996 and 2007, the number of female home applicants and acceptances grew by 34% and 46% respectively. The equivalent percentage increases for males were 14% and 25%.  

3.46.2 Women’s acceptance rate was, however, lower in 2006 after controlling for subject profile and academic qualifications (Purcell et al 2008).

3.47 This closing of the gender gap has generally been attributed to two interrelated developments: shifts in young women’s (particularly middle-class young women’s) career aspirations since the 1970s, which have led them to seek better qualifications; and the increasing importance given to higher educational qualifications in the labour market, particularly in professional and technical employment. A degree or university diploma has come to be considered necessary for an increasing range of employment. Training for many areas of professional and technical work has been moved into the much expanded university sector, including that for a
large range of professions in which women have long predominated: for example, teaching, nursing, and most professions allied to medicine.

3.48 In England, at the end of the 1980s, 20% of girls aged 16–18 and 18% of similar aged boys gained two or more A levels. By 2003/4, the percentages had increased to 45% of girls but only 36% of boys. Accordingly, the gender gap in applicants and acceptances to UCAS has widened, particularly among ‘white’ school leavers, as indicated in Table 3.2.

- Between 1996 and 2007, the number of self-classified ‘non-white’ home applicants to UCAS grew by 55% for men and 86% for women, while the number of ‘white’ home applicants grew by 7% and 27% for men and women respectively.
- Acceptances increased over the same period by 77% and 108% for ‘non-white’ males and females, and by 16% and 36% for ‘white’ males and females respectively.
- Some of the greater relative growth reflects the difference in the size of base populations, and demographic change, as the population of young adults from ethnic minority backgrounds has been increasing at a faster rate than among the ethnic majority.

3.49 These data do suggest that changes in the demographic composition of medical students are, at least in part, related to more general social trends in applications and entry to higher education.

Entry qualifications and degree subject choice

3.50 One specific factor in the relative increase of women’s applications and acceptances to medicine is likely to have been their increased likelihood, since the 1990s, of taking sciences at post-16 level education. This is particularly the case for A level chemistry (still generally required by most medical schools for A level entrants from England) (Grant et al 2002).

- Between 2002 and 2004, the number of female candidates for A level chemistry exceeded the number of males, although subsequently male entries have been just in the majority.
- In recent years, female candidates have been slightly more likely to pass A level chemistry and to get A grades, although far more candidates of both sexes do so now than a decade ago. In 2006, there were 3,500 more A grade passes in A level chemistry than in 1996 (Department for Education and Skills 2007).

3.51 There remain marked differences in the subject profiles of women and men applying to entering HE, although many subjects (including medicine) have seen a substantial increase in women’s entry over the past thirty years.

3.51.1 In general, women, together with mature and minority ethnic background candidates are the most likely to choose HE courses with a clear vocational or professional orientation, and women are especially likely to choose HE courses leading to careers in health and welfare-related careers.

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3.51.2 Women are now the majority of applicants and acceptances for several health-related professions once predominantly male: veterinary medicine (over 80% female acceptances in 2006), dentistry (55% female acceptances in 2006), pharmacy (60% female in 2006), as well as the great majority of those entering the traditionally feminine fields of nursing and most of the allied health professions.11

3.52 Women with science A levels have generally been more likely than men to choose degree programmes that directly use their science qualifications (Grant et al 2002). However, women remain very much less likely than men to opt for vocationally orientated or science degrees for which a very high level of mathematical competence might be expected (mathematics, physics, computer science and engineering), although women’s entries for A level mathematics have risen in recent years.

3.52.1 Participants in the Futuretrack survey of 2006 UCAS applicants were asked to self-rate their numeracy, and degree subjects were ranked according to the distribution of applicants’ numeracy ratings. Women were less likely than men to apply for all subjects attracting a high proportion of self-rated ‘highly numerate’ applicants, except preclinical medicine and the pharmacy group (Purcell et al 2008).

3.53 The strong association between young women’s taking science A levels and subsequent degree choice is particularly marked for those with A grades in A level chemistry.

3.53.1 Of those with A grades in A level chemistry among all 2003–2005 UCAS applicants, 45.9% of the females compared to 38.7% of the males applied to medicine or dentistry; 18.0% of the females and 9.0% of males to biological sciences and veterinary medicine, and 8.0% compared to 2.9% to subjects allied to medicine. Only 13.1% of females but 32.3% of males applied for degrees in mathematics, computing, engineering and technology.12

3.54 Women are also now the majority of applicants and acceptances to degrees (or new entrants via other routes) to both branches of the legal profession, and the proportion among accountant and actuaries rose sharply over the last decade, although the rate of increase now appears to have levelled off (Law Society 2004; Lyonette and Crompton 2008).

3.54.1 The seminar held with representatives of these other professions (see Chapter 2) revealed similar experiences of and questions about the implications of the increased entry of women for their professions.

The declining relative share of male applicants for medicine

3.55 As has already been made clear, the reported decline in male applicants and acceptances for medicine that prompted this research initiative has been almost entirely relative to the increase in females. Only in the years between 1999 and 2002 did absolute numbers of male applicants fall to any extent, and female numbers also fell slightly at the same time. Comparing 1997 and 2007, actual numbers of male applicants and acceptances increased faster between these two years than at any time over the past half century and, since 2003, they have closed slightly on female applicants. It is perhaps less a case of ‘disappearing’ males, and more one of ‘obscured’ males as the numbers of women have increased faster for so long.

11 Based on analyses of UCAS statistics for relevant subject groups and Purcell et al (2008).
12 McManus et al, n.d.
3.56 The evidence presented so far suggests that the relative decline in male applicants for medicine may be, at least in part, one manifestation of the generally much slower expansion in applicants to higher education among young white males.

3.57 In the course of this project, it was sometimes suggested, for example at our seminars with senior doctors and representatives of other professions, that the decline of male applicants reflected the declining attractiveness of medicine compared to some other careers, such as banking and finance. (Our seminars were held early in 2008.) Although trend data are very limited, it is possible to make some current comparisons between ‘bright young males’ and their female peers.13

- That male school leavers with good passes in science A levels (or high UCAS tariff scores) have, in the last decade, been less likely to choose medicine than their female peers has already been shown. Among those taking A level chemistry, men have been more likely than women to choose mathematically-based degree subjects, or non-science subjects.
- Between 1999 and 2003, when male medical school applicants fell sharply, applicants for computer science degrees rose and then fell (possibly a ‘dot-com boom’ effect) (Grant et al 2002).
- White male applicants from independent schools applying to Russell group universities were the least likely group to choose explicitly vocational degree subjects in the 2006 Futuretrack survey (Purcell et al 2008).
- One qualitative study found male teenagers to be less enthusiastic about medicine than females, because they see the training as too long and the rewards too distant (Greenhalgh et al 2004).
- These findings are consistent with reward elasticity being greater among ‘bright’ male applicants to higher education than among female applicants in the last decade. Whether there is a change in male attitudes with respect to the rewards likely to accrue from medicine compared to 20 or 30 years ago is not clear.

Summary of recent trends in entry to UK medical schools

3.58 The data presented in this section have shown that there has, indeed, been a very marked increase in the number and proportion of women entering UK medical schools in the last decade. It has also been shown that this increase has been going on for longer than is usually recognised, and that it is not necessarily continuing. The numbers of male entrants have also increased in the last decade.

3.58.1 The general trends in medicine are, in many respects, parallel to those found in other areas of higher education and professions, with women being particularly likely to enter health- and welfare-related degree programmes, of which medicine is the largest (excluding diploma level nursing courses).

13 Unless otherwise indicated, the data here are from www.ucas.co.uk/statisticsonline or from Purcell et al (2008).
3.59 Given the large increase in women entering medical schools, especially in the context of expanding places, it is likely that the percentage of women in the medical profession (the stock) will also have been rising. Before considering this, however, some discussion of the other inflow into the UK medical profession is necessary: that is, of doctors who have qualified outside the UK – IMGs.

International medical graduates (IMGs) in the UK medical profession

3.60 The current and future level of IMGs in the UK medical workforce is relevant to this project in several ways.

3.60.1 The percentage of women among IMGs currently working in the NHS is lower than the percentage among UKMGs. So, the presence of large numbers of IMGs, particularly in the training and equivalent grades in NHS hospital medicine, has served to lower the percentage of women in the medical workforce, and hence the rate of quantitative ‘feminisation’. For example:

- In 2007, among all NHS GPs in England who trained in the UK, 44.3% were female, but among IMG GPs, the percentage was 33.4%.
- Among NHS consultants in England, the percentage of females among UKMGs was 28.9%, and 25.0% among IMGs. Among hospital SHOs in 2006 (47% of whom were IMGs), the respective percentages were 53.0% and 34.0%.

3.60.2 One implication of this is that a rapid reduction in the numbers and percentage of IMGs in the NHS workforce would lead to a rapid increase in the percentage of women doctors in that workforce, as UKMG women came to form a larger share (even if their numbers stayed constant).

3.60.2.1 In 2008, there were anecdotal reports that the number of overseas doctors seeking to work in the UK had already fallen (possibly leading to problems recruiting locum hospital doctors).

3.60.3 Although, as described later in this chapter, the percentage of women doctors in many relatively less affluent ‘doctor donor’ countries outside the EEA is currently much lower than in the UK, the percentage is increasing in most countries. If IMG recruitment continues from less affluent ex-EEA countries, the proportion of those recruits who are women will probably increase.

3.60.4 The number of EEA-qualified doctors working in the UK has been increasing in recent years. This is likely to continue to increase, especially if entry of ex-EEA IMGs is more restricted. As detailed below, in most of these countries, the proportion of women in the medical profession is at least as high as in the UK, and in some countries considerably higher. A larger inflow of doctors from Europe will probably mean a larger inflow of women among IMGs than has hitherto been the case.

3.60.5 Currently, IMG doctors are not evenly distributed between different specialties in the NHS. If their numbers should fall, this could have a significant impact on recruitment and service provision in particular fields, particularly psychiatry, pathology and obstetrics and gynaecology.

14 All information in this section is from NHS Information Centre (2007a, b; 2008a, b) or as supplied directly from NHS IC.
3.61 The outcome of the 2007 MTAS/MMC specialty training recruitment process, in which IMG applicants were much less successful than UKMGs, gives an indication of how the gender balance might shift if IMG recruitment to NHS training grades changes.

- At ST1 level, 25.4\% of acceptances were of IMG doctors, a much lower percentage than among all SHOs in 2006, although not all of these SHOs will have been in approved training posts.

- Among UKMG acceptances, 56.6\% were female and among IMGs, 48.2\%.\(^{15}\) This is a much higher percentage of females among IMGs than in the 2006 SHO grade, possibly because more MMC posts went to doctors who qualified outside the UK but within the EEA.

- Thus, the 2007 ST1 figures suggest that the proportion of women among IMGs in specialist training posts in the NHS might rise in the near future (although overall numbers will probably be lower).

3.62 As this section has made clear, the size and gender balance of the total stock of doctors in the UK is shaped both by medical school output and IMG inflow (as well as outflow). The next section considers some estimates of the stock of UK doctors and possible future trends.

**Counting the (increasing) proportion of women in UK medicine**

3.63 Although there is no disputing that the proportion of women ‘in’ the UK medical profession has increased in recent decades, as noted in Chapter 1, there is no single definition of who is counted as being ‘in’ the UK profession.

3.64 Entry to the UK medical profession is, strictly speaking, achieved only through a single portal, the General Medical Council. The Medical Register maintained by the GMC currently records, on a continually updated basis, the names of all medically qualified practitioners, wherever trained, who meet current statutory requirements for full registration and who have chosen to pay the annual registration fee.

3.64.1 Doctors whose names are on the GMC Register are not necessarily in active clinical practice: they may be permanently retired, on temporary career breaks or working outside the profession, and do not have to be resident in the UK. At present it is not possible to distinguish doctors in these different categories.

3.65 Comparison of GMC data over time is difficult because of changing registration regulations and because of the continual updating of the Register. However, whereas in the early 1980s, about 30\% of registered medical practitioners were female, the current proportion is about 37\%. In June 2007, of approximately 240,000 doctors on the GMC Register, just over 150,000 were men and just over 88,000 were women.\(^{16}\)

3.66 Historians of the medical profession, and of women’s participation in different occupations over the past 150 years, have made much use of the national Decennial Censuses’ questions about economic activity and occupation. One advantage of the census is that doctors who work

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\(^{15}\) DH Workforce Directorate Analysis Team (WDAT) data.

\(^{16}\) GMC Register and GMC personal communication, 12 June 2007.
outside the NHS (for example in the pharmaceutical industry or the private or voluntary healthcare sector) are included. The major disadvantages are the long intervals between censuses and delay in information becoming available.

3.66.1 Successive censuses show an increase in the proportion of women among economically active medical practitioners. In 1981, 24.1% of the medical practitioners aged under 75 years who were in active employment (including self-employment) in Great Britain, were female. In the 2001 Census, the equivalent figure was 37.6%.17

3.67 A third widely used source of current information on the stock of doctors is the annual NHS medical workforce censuses described in Chapter 2, and already cited in this chapter. These are conducted separately for medical staff in the hospital and community services and in general practice in each of the constituent countries of the UK.18 By definition, these censuses only count those doctors contracted to work in or for the NHS. Comparison with 2001 Decennial Census data showed that approximately 90% of economically active doctors in the UK were included in the NHS census for that year (Yar et al 2006).

3.68 Long-term comparisons of annual NHS workforce censuses can be difficult because of service re-organisation. However, in 1980, approximately 24% of the doctors working in the NHS (in hospital and community services or in general practice) were female in England and Wales (Department of Health and Social Security 1981). By 1996, approximately 34% of the 86,500 doctors working for the NHS in England were female. By 2006, this had risen to 40% of over 120,000. The number of female doctors in the NHS rose by 65% between 1996 and 2006, while the total number of doctors rose by 46% (NHS Information Centre 2007a, b).19

3.68.1 These three sources all indicate that, allowing for the increase in female UKMGs in the most recent years, the proportion of women ‘in’ the UK medical profession in 2007–8 is probably in the region of 40% (headcount) by any of their definitions.

3.68.2 None of these sources gives accurate information on the size of any pool of qualified but professionally inactive doctors under retirement age. (This information is available only for some of the UK-trained medical stock from cohort follow-up studies, which generally show the size of this pool to be small – see Chapter 5.)

3.69 If the percentage of women ‘in’ the medical workforce is currently about 40%, this raises the question: when will women become the majority of the medical workforce, given that they have been the majority of one form of inflow for a decade?

17 Census data from OPCS Census: Great Britain 1981, HMSO, and as supplied by Census Customer Services November 2007, 2001 Census (Great Britain) Table CO2225GB. (Crown copyright 2004. Crown copyright material is reproduced with the permission of the controller of HMSO.)
18 The annual NHS workforce census is gradually being replaced by an electronic database which has the potential to give longitudinal information relating to all doctors working in the NHS.
19 These figures include the small number of dentists employed in NHS hospitals but exclude clinical assistants and hospital practitioners, to avoid double counting, as most of these work mainly in general practice.
The gender composition of the future medical workforce

3.70 Economic modelling of the future supply and demand for doctors, with attention paid to demographic change and service costs, was not part of this project's brief. The number of doctors likely to graduate from UK medical schools is broadly set for the next 10 years because of the time it takes to train, and to expand medical school provision. Even so, it is not easy to forecast the size of the supply for several reasons. Among the unknowns are the gender balance and participation rates of future intakes (especially if women have lower participation rates); and the level of IMGs.

3.71 Nevertheless, some simple modelling of future supply was undertaken. One example, based on head counts in NHS workforce census data (for both hospital doctors and GPs) will suffice.

3.71.1 If a ‘steady state’ is assumed, of no change in the current total (and gender ratio) of young doctors entering the NHS at foundation level (F1) or in the stock of IMGs under retirement age; no wastage outside the NHS (and jobs for all); and (for simplicity) retirement of all doctors at age 60; then, the percentage of women in the NHS medical workforce in England could reach 47% in 2017, and 50% by 2022.

3.71.2 The above is highly unrealistic in many ways, not least in ignoring the increased output from UK medical schools. If inflow is adjusted to 5,800 young doctors a year for 10 years (predicted output from English medical schools, from 2009, and assumed to be 60F:40M); and 25% of current IMGs (assumed to be 30F:70M) are removed in addition to those retiring; then the percentage of women would just reach 50% in 2017 (140,000 doctors in total) and 53% in 2022.

3.71.2.1 If IMG totals fall by 50%, the percentage of women in the NHS medical workforce would be 51% in 2017 (130,000 doctors in total) and 52% in 2022, all other assumptions above being unchanged.

3.71.3 These figures would suggest that women will probably become the majority of the NHS’s medical workforce in England in or soon after 2017, if assumptions about women’s participation and the availability of jobs remaining high prevail (ie low attrition and little early retirement before 60). If the number of IMGs qualifying outside the EEA working in the UK drops by more than 25%, the 50% mark could be passed before 2017.

3.71.4 These are purely hypothetical models; the actual outcome might be very different in 2017. But they suggest that, even under assumptions that maximise the impact of the increased intake of women to UK medical schools, women’s becoming a majority of NHS doctors is likely to be nearly a decade away, and may be longer.

Women in medicine: some international comparisons

3.72 Consideration of trends in the gender composition in other countries is relevant to this project in at least two respects. First, international comparisons might give insight into the implications of different gender ratios, or permit testing of possible explanations for developments in the UK. Secondly, as indicated above, because of the international circulation of medical graduates, trends in other countries may have direct implications for the UK, currently a net importer of medical graduates.

3.73 Detailed information on trends, however, has not proved easy to obtain. This is particularly so for data on medical schools in other countries, although some were available, eg for the USA.
As many countries are not self-sufficient in medical graduates, and some less affluent countries are net exporters of their home-trained medical graduates, data on medical school intake would, in any case, give only a partial guide to many nations’ medical workforces.

3.74 Even though precise figures were only rarely available, what was retrieved in the literature search were many recent commentaries on incipient 'feminisation' of medicine in many countries, albeit from very different starting levels. The only possible exceptions found to the general picture of increasing women in medicine were some former Soviet countries, including Russia, where the percentage was already very high, but may not have increased in the post-Soviet era – although data are very thin (eg Riska 2001a).

3.75 Some statistical data on current stock (variously defined, dating from around 2004) were obtained. Information is not only poor for ex-Soviet countries, but also for Latin America and much of the Far East (including India and China). Some of the information retrieved is shown in Table 3.3, arranging countries according to the percentage of women reported.

3.75.1 Almost all the countries with 45% or more of its medical workforce being women are ex-Soviet bloc plus Finland with its strong connections to Russia (Riska 2001a).

3.75.2 There are a large number of affluent countries, including the UK, Australia, Canada, and most longstanding EU member countries with between 35 and 44% of its doctors being women.

3.75.3 The USA currently lags behind other affluent countries, with only 27% of its very large number of doctors being women in 2005; but the situation is changing very rapidly (American Medical Association 2007).

3.75.4 Apart from the USA and Japan (16% women but also increasing), almost all the countries identified as having less than 30% of its medical workforce stock being women are relatively less affluent African or Asian countries.

3.76 The picture presented in Table 3.3 (overleaf) is incomplete, and also static. That women doctors are increasing in most countries is clear from commentaries, however, even if hard information is lacking. So, the UK is not unique in experiencing this change. Nor, judging from Table 3.3, is the proportion of women in the UK medical profession exceptionally high by western European or wider international standards.
### Table 3.3 Reported percentage of women in medical profession in selected countries, c2004.*

<table>
<thead>
<tr>
<th>Country</th>
<th>Less than 25%</th>
<th>25–34%</th>
<th>35–44%</th>
<th>45–54%</th>
<th>55–64%</th>
<th>65% and over</th>
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</thead>
<tbody>
<tr>
<td>Bangladesh (24%)</td>
<td>Australia (33%)</td>
<td>Austria (39%)</td>
<td>Algeria (53%)</td>
<td>Croatia (56%)</td>
<td>Latvia (73%)</td>
<td></td>
</tr>
<tr>
<td>Benin (21%)</td>
<td>Belgium (33%)</td>
<td>Bahrain (43%)</td>
<td>Cape Verde (52%)</td>
<td>Estonia (61%)</td>
<td>Lithuania (70%)</td>
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<tr>
<td>Burkina Faso (19%)</td>
<td>Bhutan (25%)</td>
<td>Brazil (36%)</td>
<td>Czech Republic (52%)</td>
<td>Macedonia (58%)</td>
<td>Mongolia (77%)</td>
<td></td>
</tr>
<tr>
<td>Cameroon (14%)</td>
<td>Bolivia (29%)</td>
<td>Burundi (40%)</td>
<td>Finland (50%)</td>
<td>Slovakia (57%)</td>
<td>Romania (67%)</td>
<td></td>
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<tr>
<td>Cent. Afr.Republic (12%)</td>
<td>Canada (33%)</td>
<td>Costa Rica (3%)</td>
<td>Guinea (52%)</td>
<td>Slovenia (57%)</td>
<td>Russia (69%)</td>
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<tr>
<td>Chad (14%)</td>
<td>Cote d'Ivoire (25%)</td>
<td>Denmark (41%)</td>
<td>Hungary (51%)</td>
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<tr>
<td>Comoros (8%)</td>
<td>Dem. Rep. Congo (25%)</td>
<td>Egypt (36%)</td>
<td>Mozambique (48%)</td>
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<tr>
<td>Congo (20%)</td>
<td>Equatorial Guinea (29%)</td>
<td>France (38%)</td>
<td>Poland (54%)</td>
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<tr>
<td>Djibouti (2%)</td>
<td>Guinea-Bissau (31%)</td>
<td>Germany (38%)</td>
<td>Portugal (53%)</td>
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<tr>
<td>Eritrea (16%)</td>
<td>Hong Kong (26%)</td>
<td>Greece (36%)</td>
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<tr>
<td>Ethiopia (11%)</td>
<td>Iceland (25%)</td>
<td>Honduras (36%)</td>
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<tr>
<td>Gabon (17%)</td>
<td>Italy (34%)</td>
<td>Iraq (35%)</td>
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<tr>
<td>Ghana (22%)</td>
<td>Kenya (25%)</td>
<td>Ireland (37%)</td>
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<tr>
<td>Japan (16%)</td>
<td>Luxembourg (27%)</td>
<td>Madagascar (40%)</td>
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<td>Jordan (15%)</td>
<td>Malawi (27%)</td>
<td>Netherlands (38%)</td>
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<td>Liberia (17%)</td>
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<td>Norway (35%)</td>
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<td>Oman (37%)</td>
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<td>Mauritania (10%)</td>
<td>Switzerland (31%)</td>
<td>Pakistan (35%)</td>
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<td>Mauritius (22%)</td>
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<tr>
<td>Myanmar (19%)</td>
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<td>Spain (44%)</td>
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<tr>
<td>Nigeria (20%)</td>
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<td>Sweden (42%)</td>
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<td>Rwanda (12%)</td>
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<td>Thailand (37%)</td>
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<td>United Kingdom (38%)</td>
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<td>Tanzania (18%)</td>
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<tr>
<td>Timor Leste (17%)</td>
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<tr>
<td>Uganda (16%)</td>
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*Year is 2004, or closest available 2000–2003, unless otherwise stated. Sources: Unless otherwise stated, Eurostat for all EEA countries and WHO for others.
*Hong Kong: Medical Council of Hong Kong.
4 Specialty preferences and choices

Introduction

4.1 In this chapter, the focus is on evidence on doctors’ career preferences between different specialties, and on the outcomes of these preferences as they interact with other factors. There is overlap with Chapter 5 (on modes of working) in that different medical specialties tend to be associated with particular modes of working. The extent to which specialty choices are shaped by preferences for particular modes of working is an important question when the implications of increasing entry of women to medicine are being considered. Medical career decisions are made in a broader social context. It is possible that changing attitudes to work–life balance and changing practices in relation to marriage and long-term partnerships, parenthood and domestic divisions of labour, and changes in welfare provision or employment regulations, or in the economic circumstances faced by young doctors, may all make future patterns different from those of the present.

4.2 There is extensive evidence, however, that, to date, there have been differences in the aggregate patterns of career preferences expressed and in the medical specialties entered by women and men. The extent to which such differences are shaped by variations between women and men in the distribution of individual preferences; by constraints arising from different life circumstances of men and women; or from discrimination in the workplace has been much debated, in relation to both medicine and the workforce generally (Browne 1998; Ginn et al 1996; Hakim 1996).

4.3 Resolving this ongoing debate is not within the scope of this project. Guiding assumptions in undertaking the work for this report have been: firstly, that it cannot be assumed that gender differences will diminish as the proportion of women in the profession increases; and, secondly, that any such persistence or departures from a 50:50 female:male ratio should not be regarded as necessarily prima facie evidence of inequality or discrimination against women in medicine. It is possible that, as women’s presence in the profession increases, they might become more rather than less likely to opt for specialties with a substantial proportion of women. Men might also become more inclined to choose fields with a relatively large representation of men.

4.4 Gender differences in career choice may have policy implications if they persist as the ratio between males and females in the profession changes. For example:

- The relative and absolute numbers of applications for different specialties may change. Such shifts may well be beneficial to the service if once-undersubscribed fields become more popular. But they could also lead to new ‘shortage’ and ‘surplus’ specialties emerging, which might be both frustrating for individuals and damaging to the health service. Both too much and too little competition for medical posts can pose problems for service delivery and quality.

- If gender differences in specialty recruitment are associated with marked differences in preferred modes of working (e.g., in rates of part-time working), these could create
imbalances and anomalies within the service and the professional career structure, and have implications for patient care.

4.5 Chapter 1 set out some general points on the changing demand for medical work in the NHS. This chapter relates these to the characteristics of different specialties, and to a simple theoretical framework that might be applied to the analysis of medical career choice. This is followed by a review of evidence about early career preferences and changes in these over time for individuals and between cohorts. Some brief comments are made about particular specialties and the most recent evidence about the patterns of entry to these, in relation to the theoretical framework developed. Finally, some international comparisons are presented.

Understanding career choices in medicine

4.6 Within medicine, different specialties call for different skills and abilities, and meet different interests, although, as noted in Chapter 1, specialty characteristics and boundaries are not immutable over time. Before discussing the extensive empirical research on early specialty preferences, and the factors associated with different career choices and outcomes (eg Goldacre et al 1999; 2007), a theoretical model of the processes through which doctors’ specialty choices are determined is outlined.

4.7 One influential model of career choice in general suggests that individuals’ decisions between different kinds of work are set through what can be thought of, analytically, as a two-stage process (although in reality the two stages may overlap and re-iterate). First, through a process of circumscription, individuals identify initial preferences for or, perhaps more often, against some fields (ie identifying fields they would not wish to enter), based on their interests, values, and abilities in relation to the intrinsic characteristics of the work options available. Secondly, there is compromise between the options in the circumscribed set, as choices, decisions about which specific options to pursue, are made in the light of extrinsic, practical considerations, such as the number of posts available, the working arrangements etc (Gottfreidson 1981; Petrides and McManus 2004).

4.8 This framework allows for links between individuals’ preferences and job characteristics, and between preferences and barriers, practical constraints and opportunities. Gender-related factors may enter into both circumscription and compromise, leading to the observed aggregate gender differences in specific preferences, choices and final destinations.

4.9 Career choice can be thought of as a process of individuals locating themselves on a multidimensional map of career options, where the dimensions represent different work characteristics. Circumscription results in individuals’ selecting a set of possible options (preferences) which are likely to be located relatively close to each other on the map, while compromise determines which of this set is actually pursued (chosen), although sometimes radical moves across the map will occur, perhaps if personal circumstances change markedly – or if it proves impossible to get a post in the chosen field.

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4.10 Two dimensions emerge from the theoretical literature which have been identified as particularly significant in empirical studies of medical school applicants and final year students’ ratings of different specialties as intrinsically attractive to them: a realistic–social dimension (an orientation to technology and procedures versus an orientation to communication and personal interaction) and an ideas–data orientation (work involving uncertainty and unpredictability of outcome versus work offering more predictability in demand (Petrides and McManus 2004).

4.10.1 The mapping of final year medical students’ perceptions of career options indicates that, for example, the surgical ‘craft’ specialties are relatively close together and close to the realistic pole, while general practice, psychiatry, paediatrics and general medicine are closer to the ‘social’ pole (Petrides and McManus 2004).2

The characteristics of different medical specialties

4.11 For simplicity, in this project, these two dimensions have been adapted as the basis of a typology that links intrinsic features of the work (circumscription) to compromise (extrinsic features). The first dimension is the realistic–social dimension. The second dimension is based on predictability versus uncertainty of the clinical work – which, historically, has been associated with particular ways of organising work, such that to choose a particular field has been, to a considerable extent, to choose or at least set constraints on particular ways of working. Specialties with a high degree of predictability have tended to be organised into regular office hours, with those at the other end of the dimension associated with high levels of emergency and on-call commitment, with overall working patterns being relatively unpredictable.

4.12 The two dimensions can be used to create a classification of medical specialties into four quadrants, as represented in Fig 4.1. On the left-hand side are located specialties with a relatively higher ‘plannability’ or predictability of clinical workload, such as pathology and general practice, separated into top and bottom quadrants by their differing relative orientation to technology and procedures. On the right-hand side are the specialties with more unpredictable clinical challenges, again separated by the realistic–social dimension. In the bottom right quadrant are the acute specialties with relatively high orientation to technologies and relatively high levels of unpredictable clinical workload.

4.13 It must be emphasised that positioning specialties on these dimensions is relative to the range of career choices available within medicine (and it is not implied that these are the only dimensions that underlie career choice). All aspects of medicine involve both personal interaction and communication skills, and technologies. All have potential for unpredictable work challenges and unscheduled emergencies. But some specialties involve more invasive procedures and complex technologies than others (eg the ‘craft’ specialties), just as some typically involve more intensive long-term personal relationships with individual patients than others. Some (the ‘acute’ specialties) have more unpredictable work demands than others.

2 Recent evidence of the validity of this career map is provided by MMC’s report of extensive overlap in applicants for ST1 posts in general practice, psychiatry and core medical training in 2008, which may lead to coordination of recruitment in these specialties (www.mmc.nhs.uk, accessed 01/12/08).
4.14 Some fields of medicine fall more clearly into a particular quadrant than others. Indeed, two very important further points need to be made.

4.14.1 First, there is considerable variation within specialty groups or specialties that places specific specialties and subspecialties (or even specific individual job-plans) into different quadrants: for example, community and acute paediatrics could be located in the top left and top right quadrants respectively, with some acute neonatology in the bottom right quadrant. Much gynaecological work (as opposed to obstetrics) might be located in the top left-hand quadrant. Within anaesthetics there is scope to specialise in more or less plannable areas of work.

4.14.1.1 General surgery as a whole might be placed in the bottom right quadrant, but breast surgeons are less likely to be involved in emergency work than gastrointestinal surgeons (Royal College of Surgeons 2005). The high proportion of elective work in some surgical fields, such as ENT, might locate this area to the left of the diagram.

4.14.2 Secondly, it is possible for a specialty to relocate over time. Technological developments might move a field down the diagram, if more complex procedures are introduced. Organisational changes might lead to a horizontal move. In general practice, the possibility of opting out of out-of-hours responsibility has reduced the unpredictable workload and moved the field, at least for many GPs, to the left in recent years.

4.14.2.1 Arguably, moves to planned admissions, more day-case surgery, avoidance of emergency trauma surgery at night where possible, and the increased shift-working associated with the European Working Time Directive (EWTD) are moving the workload in some specialties...
towards more predictability of working patterns, although the clinical challenges may remain unpredictable (and the hours are not necessarily standard office hours).

4.14.2.2 At the same time, policies to provide more rapid diagnostic services for emergency admissions, and more patient choice and accessible services on the other, may lead to increased work in the relatively plannable specialties taking place outside conventional office hours. Examples include primary care trust (PCT)-commissioned provision of out-of-hours and walk-in primary medical care services, or extended weekend availability of diagnostic radiology services.

4.15 Thus the location of specialties in Fig 4.1 is not absolutely fixed. Changes in specialty and subspecialty boundaries and in the ways work in a specialty is organised may alter patterns of circumscription and compromise. Although the extent of movement will be limited by the intrinsic characteristics of the particular medical work undertaken, it is possible that some of the differences in work organisation between specialties may be being reduced, in particular with respect to hours of working and on-call commitments.

4.16 The typology shown in Fig 4.1 has been derived independently of consideration of gender patterns of career preference. But, as Fig 4.2 shows, there is an association between the percentage of women in different specialty groups and the location of that group on the diagram. The percentage of women tends to be highest in the specialties on the left-hand side of the diagram – although there are exceptions. This suggests that, at least among the current stock of trained women doctors, many have entered specialties where the workload is relatively predictable or plannable, and the orientation relatively more towards the ‘social’ rather than the ‘realistic’ pole.

4.17 The following sections consider the extent to which this pattern of career destinations is in line with initial career preferences, and whether it is being sustained among younger doctors, more of whom will be women.

![Specialty characteristics: % female consultants (and GPs), NHS England, 2007.](source: NHS Information Centre. Figure adapted with permission from Petrides and McManus 2004.)
Early career preferences within medicine

4.18 Some students will begin their medical studies with strongly held preferences as to which field they hope to enter, or would never consider. Others may have only vague ideas of what they wish to do (or not do), by the time they qualify, and many will be between these two extremes. Being ‘undecided’ does not necessarily imply an individual has no preferences, but rather that his or her circumscribed set of options is probably rather large, and that compromise decisions have not yet been made.

4.19 The career-mapping framework identified above suggests that some students’ preferences will locate them as being clearly in one particular quadrant, while others might be closer to the intersection of the dimensions. The framework predicts that most changes of preference will be compromises, in the face of emerging constraints and opportunities, within a previously circumscribed set of options, ie most movement will take place within a relatively small area on the ‘map’ (Petrides and McManus 2004).

4.20 Although specific reported early career preferences are not always strongly held, and may not be maintained, evidence about them may be important for workforce planning for three reasons. First, as noted in the previous paragraph, movement away from specific early preferences is not random, but likely to be between ‘nearby’ specialties. Secondly, there is evidence that, if a career option is not included in initial circumscribed sets of possibilities, it is unlikely to be reinstated. Thirdly, under the MMC reforms for specialty training, at least as initially implemented, young doctors are expected to make early commitments to a training pathway. So, early career preference data may provide useful early indications of mismatch between young doctors’ aspirations and likely service demand.

4.20.1 The publication of competition ratios (numbers of applications per post) for the 2007 MMC/MTAS specialist training application process was specifically intended to inform young doctors about such mismatch, and may have led to new compromises being made in subsequent rounds by those who were not successful in the first round and by subsequent cohorts.

4.21 Many surveys of UK medical students and young doctors have included questions about which specialties respondents would like to enter in the long term.

4.21.1 An obvious limitation of most of these sources is that they usually only cover those who obtained their primary medical qualification in the UK. Little information has been published to date about the career preferences of IMGs coming to this country, except as manifested in the actual posts they hold – which may not always be in the field in which they had originally hoped to train in the UK. Data released from the 2007 round of specialty training recruitment under MMC provides some information about IMG (and UKMG) job applications, a form of enacted choice. These are discussed below.

4.21.2 A second limitation of data on specialty preferences in many surveys is that cell sizes are often quite small at the level of specific specialties. This is true even for surveys of entire UK graduating cohorts.

4.21.3 Most of the reports of career preference surveys focus on individuals’ expressions of ‘first’ preferences among specialties. While this is understandable for clarity of presentation, the theoretical framework adopted here suggests that identifying the sets of possibilities being considered by individuals, rather than first preferences only, could be valuable especially for those at the very earliest stages of their careers.
4.22 These methodological cautions notwithstanding, most of these studies have indicated some aggregate gender differences in career preferences at an early stage, including before respondents have significant direct experience of many of the different medical specialties (McManus et al 1996).

4.22.1 For example, one review of the large literature on medical students’ attitudes to psychiatry noted that some studies find female students have more positive attitudes, and none find male students having a more positive attitude to psychiatry (Wilson and Eagles 2006).

4.22.2 A recent survey of 300 students in their first term in medical school found that 30% of all students gave surgery as their preferred career option, 50.4% of all the males, and 17.8% of all the females (64.4% of all those expressing a preference for surgery at this stage were male). Rather fewer expressed a preference for general practice, but 13.5% of the female students and 6.1% of the males did (Fysh et al 2007).

4.23 The most extensive and reliable information over time on young doctors’ career preferences comes from the many surveys of successive cohorts of UK medical qualifiers conducted over more than 30 years by the UK Medical Career Research Group (MCRG). This report draws heavily on UK MCRG’s work, supplemented by additional data, including findings from the BMA’s 10-year longitudinal study of 1995 qualifiers.

4.23.1 UK MCRG has generally surveyed selected cohorts in their first, third and fifth years post-qualification, with further follow-ups at longer intervals. In the first three surveys, respondents have been asked to state up to three long-term career choices in order of preference (and to indicate how definite their choices are).

4.24 The following points summarise UK MCRG’s main findings with respect to gender patterns in career preferences within qualifying cohorts during the 1990s and early 2000s, surveyed one, three and five years after graduation (eg Goldacre et al 1999; 2003a; Goldacre and Lambert 2000).

- Although there have been some sustained gender differences, there has also been considerable overlap in the distribution of male and female preferences.
- Women have been more likely to express uncertainty or to be undecided at early stages in their career.
- Women have been consistently more likely than men to express early first preferences for general practice rather than for hospital specialties.
- Preferences for general practice increase between first and third year post-qualification for both sexes, but remain higher for women.
- Although the similarities between the graduates of different medical schools are generally more striking than the differences, the extent of the gender differences in early preference for general practice varies between schools.

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3 See Chapter 2 for details.

4 This is based on reading of more than 50 published papers and unpublished reports from UK MCRG. See www.uhce.ox.ac.uk/ukmcrg/publications.php
Male graduate entrants (in 1999, 2000, and 2002 qualifying cohorts) were somewhat more likely to express a first preference for general practice than male non-graduate entrants, but there were no significant differences between female graduate and non-graduate entrants (although these cohorts predate the major expansion in graduate entry courses) (Goldacre et al 2007).

Among those whose early first career preferences are for hospital-based specialties, men were more likely than women to express a preference for surgical specialties. Women were more likely than men to express preference for obstetrics and gynaecology, paediatrics and pathology (eg Lambert et al 2006b; Turner et al 2006; 2007)

There have been few differences in the percentage of each sex expressing first preference for medical specialties as a whole, although men were more likely to express a preference for some acute medical specialties (but numbers are small). Similar percentages express preferences for anaesthetics.

4.25 Because the UK MCRG programme has been running for many years (albeit with a break between 1983 and 1993 because of lack of funding) their surveys also provide some information about changes in preferences between cohorts over time.

4.26 Changes between cohorts qualifying in 1970s and 1980s and those qualifying later include the following.

- Since the 1970s and 1980s, there has been a fall in the proportions of both sexes expressing early first preferences for general practice, with the lowest levels being recorded in the 1996 cohort, and the relative decrease being greater for males (Lambert et al 2002).
- The corollary of the above is a marked increase in the percentage of new qualifiers, overall and within each sex, expressing a first preference for hospital careers in the cohorts qualifying in the 1990s and early 2000s compared to 20 years earlier.
- Although still much lower than among men, the percentage of female graduates expressing an early first preference for surgical specialties rose between the 1980s and 1990, but not subsequently (Lambert et al 2006a).
- There has been a decline over time since the 1980s in the (already small) percentages of men preferring obstetrics and gynaecology when they graduate (Turner et al 2006).
- There was a significant upward trend in the percentage of men citing radiology in their first three preferences, but not for women (Turner et al 2006).

4.27 Table 4.1 shows the patterns of first choice preferences for five cohorts graduating over 20 years, indicating clearly the decline in initial first preferences for general practice, and the increased interest in medical and surgical specialties among men and women, over the two decades. Changes in the size of medical school intake and in the gender ratio that occurred over these years are not, however, fully reflected in the table because of a decline in response rates in successive cohorts, and consistently lower response rates from males.

4.27.1 Underlying the percentage changes in Table 4.1 is a relatively small decrease (of about 100) in the number of women respondents preferring general practice between 1983 and 2002 cohorts, but a decrease of more than 400 men.
4.27.2 The number of respondents expressing a preference for surgical specialties rose by about 150 for women over the two decades, although the number of men doing so fell slightly after 1993. The percentages of males and females expressing first preference for surgery have stayed constant since the mid-1990s. About one-third of the 2002 cohort respondents expressing a preference for surgery in their first post-qualification year survey were female (Lambert et al 1996; 2006a).

4.28 Table 4.1 shows that, while women have been consistently more likely to have an early first preference for general practice than men immediately after qualification, the percentage of either sex doing this fell sharply between the 1980s and mid-1990s. If, as indicated in Chapter 1, the balance of opportunities for training posts shifts towards general practice in the next decade (and newly qualified doctors are aware of this) early preferences might adjust (as they tend to within cohorts over time – see below).

4.28.1 The medical students in our seminar were adamant that to express publicly the definite intention of entering general practice would be taken by staff and fellow students as evidence of very limited ambitions (and, perhaps not surprisingly, only one student present did declare this specific intention). Many of the students did, however, see general practice as an ‘insurance’ possibility: ie it was in their current circumscribed set of options but not their first preference. And, as indicated in the discussion of demand, as estimated by ST1 posts in Chapter 1, at least 35–40% of their cohort might be expected to make general practice their long-term career choice.

<table>
<thead>
<tr>
<th>Table 4.1 Percentage of male and female respondents who, at end of first year after qualification, specified selected branches of medicine as first choice of career. Selected UK qualifying cohorts.</th>
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<tbody>
<tr>
<td>General practice</td>
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<td>F</td>
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<tr>
<td>Surgical specialties</td>
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<td>Hospital medical specialties</td>
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<td>M</td>
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<tr>
<td>F</td>
</tr>
<tr>
<td>Obstetrics &amp; gynaecology</td>
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<tr>
<td>M</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>Total number respondents</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Lambert et al 2003a; 2006a; UK MCRG 2006; and personal communication.
4.29 Table 4.1 clearly shows that, although numbers and the proportion of women expressing early preference for a surgical career were higher in the 1990s than for the 1983 cohort, women have continued to be significantly less likely than their male peers to do so. The gender difference in preference for surgical specialties is apparent very early in medical careers.

4.30 A broadly similar picture to that shown for the 1996 cohort in Table 4.1 was found in the BMA’s first longitudinal cohort study of a sample of around 500 1995 UK medical graduates (with a gender ratio of almost exactly 50:50). For example, in their pre-registration year, 18.0% of all respondents (27.0% of males and 9.1% of females) cited surgery as their first preference (British Medical Association 2005).

4.30.1 In the BMA’s second cohort study, of around 500 2006 UK medical graduates (58% female), the percentage of all new graduates specifying surgery was lower at 14.0% (22.9% of males and 7.3% of females), and the percentages declined further by the end of foundation year. However, 17.1% of the sample were still undecided about their specialty at the end of their F1 year (British Medical Association 2007; 2008b).

4.31 In summary, in all specialties, the percentage of women among those expressing an early first preference has risen in successive cohorts between the 1980s and the early 2000s, as is to be expected, given the increased proportion of women in successive cohorts. Some of the relative differences in the distribution of women’s and men’s early preferences have narrowed between successive cohorts, but in the case of general practice, the relative difference has increased, although the percentage of either sex with early first preference for general practice has declined. The percentages of women and men expressing early first preference for the largest specialty group, the ‘physicianly’ specialties as a whole, and for anaesthetics, another large specialty, have been consistently similar since the mid-1990s.

The development of individuals’ career preferences over time

4.32 As noted earlier, very early specific preferences are not necessarily strongly preferred over other possible options, and first choices might not be sustained over time. But, if the model of circumscription is correct, then subsequent change is likely to be far from random, being mainly compromise between options located close to each other on the ‘map’.

4.33 The UK MCRG and BMA cohort surveys provide some data on changing career preferences over time, although most reports are of repeated cross-sectional analyses rather than genuinely longitudinal tracking of individuals’ preferences over time. In general, the data indicate that some early career preferences have been more strongly predictive of eventual outcome than others, and that, where there changes in career preferences are reported, these appear to have followed distinct patterns (eg Davidson et al 1998).

4.33.1 When the 1977 cohort were surveyed by UK MCRG in 2004, overall 50% of the 1977 qualifiers were working in their field of first preference in Year 1 post-qualification, rising to 70% for Year 3 first preferences, and 78% of Year 5 preferences (Taylor et al 2008a).

4.34 Early first preferences for general practice have been consistently highly predictive of entering general practice. For example, among the 1977 cohort followed-up by UK MCRG, 75% of men and 66% of women who chose general practice in Year 1 were working in UK general practice in 2004 (Taylor et al 2008a).
4.35 However, as noted earlier, there is also substantial movement of first preferences in the early years of a medical career away from ‘undecided’ and hospital specialties towards general practice (e.g. Lambert et al. 2002). General practice training is currently shorter than that for other specialties, and training opportunities have been relatively plentiful in the recent past. Compromising in the light of practical constraints and competition has long been likely to lead doctors (of both sexes) towards general practice away from hospital, although, as noted earlier, in the last decade, career posts in hospitals have increased relative to those in general practice.

4.35.1 The BMA’s 1995 cohort study found that, whereas in the first year after graduation, only 18% of the cohort had general practice as their first choice, this had risen to 35% by 2004 (and most of these doctors were actually working in general practice by then). Among the women, the proportion preferring general practice had risen from 23% to 45%, and among males from 12% to 24% (British Medical Association 2005).

4.36 Two corollaries of this movement towards general practice are, first, that there is movement away from major hospital specialty groups over time within cohorts; and, secondly, that relatively few doctors move in the other direction, away from a preference for general practice towards hospital medicine. It seems likely that, once eliminated, hospital specialties are rarely reinstated as preferences, while general practice is retained in the circumscribed set of options by many graduates.

4.36.1 Among those in the 1977 cohort who had first preference for surgery in Year 1, 50% of the men but only 30% of the women were working in a surgical field some 25 years later, but numbers of women were very small, and the concordance with third year preference for surgery was higher for both sexes (Taylor et al. 2008a).

4.36.2 In the 1993 qualifying cohort, the percentage of respondents giving surgery as first preference fell, among men, from 26.1% in Year 1, to 21.7% in Year 3, and, among women, from 7.8% to 5.7% (a slightly greater percentage fall among women, but numbers are again too small to be reliable) (Goldacre and Lambert 2000).

4.36.3 Among the BMA 1995 cohort, the percentages preferring surgery had fallen from 27% to 15% for men, and from 9% to 4% for women between 1995 and 2004, with equivalent figures for general medicine being a fall from 21% to 7% for men, and from 20% to 6% for women.

4.36.3.1 Once again, the slightly greater proportion of women changing their first preference from surgery is based on tiny numbers. In this study, the scale of movement away from medicine was as great as that from surgery.

4.37 There is also movement within the medical and surgical specialty groups. But UK MCRG follow-ups for some specific specialties indicate that relatively few doctors (of either sex) who did not include any surgical field as an early career preference subsequently enter surgery. For example:

- Most of those working in orthopaedics 10 years after qualifying chose this or another surgical specialty in their first and third years after qualification (Goldacre et al. 2008).

- Those who made early choices for the small specialty of ophthalmology were found to be particularly likely to be working in that specialty in later years. Although, overall and in almost every cohort and survey, a higher proportion of males than females chose ophthalmology, ‘in terms of career choice the specialty is less “male dominated” than surgery as a whole’ (Lambert et al. 2008: 8).5

5 That the workload in ophthalmology is not entirely surgical is explicitly recognised in the paper.
4.38 The implication of these data on early career preferences, and on changes in these preferences, is that the major factor in the low representation of women as consultants in the surgical specialties (shown in Chapter 1) has been the relatively low percentage of newly qualified women, at least in past cohorts, who have surgery as one of their initial career preferences. Whether those women who do consider entering, or actually enter surgery when they qualify, face specific barriers and obstacles is a separate question. As indicated above, the numbers of women identifying surgery as first preference has been so small in past cohorts that it is difficult to establish whether there are significant gender differences in moves away from early preferences for surgery. Among women, surgery overall does not appear to have a markedly higher attrition than medicine in terms of expressed career preferences over time.

4.38.1 As the percentage of women among UK medical graduates increases, the number of women with surgical specialties as first preference is also likely to rise (as would the proportion of women among those expressing preferences for surgery) even if the percentage of all women medical graduates who envisage a surgical career does not increase. That this is not clearly shown in Table 4.1 may be due to the response bias and response rate variations between the cohorts – but women were about a third of all respondents expressing first preference for surgery in the four most recent cohorts.

4.38.2 If the pattern of career preferences within each sex shown in Table 4.1 continues, and the gender ratio in UK medical school intake remains at not less than 35–40% male, there is unlikely to be an overall shortage of applicants for surgical training in the immediate future, unless demand for surgeons were to increase unexpectedly.

4.39 Long-term UK MCRG follow-ups of older cohorts have found women to be less likely than men to be working in a specialty cited as their first preference early in their careers. For example, among the 1977 cohort, 83% of men but only 69% of women were working in 2004 in the field they had given as first preference in their Year 5 survey (Taylor et al 2008a). In the BMA’s 1995 cohort study, a higher proportion of women than men reported being undecided about their final career preference in all ten years of follow-up.

4.40 If women’s early first career preferences continue to be, on average, less definite for longer and less predictive of eventual specialty destination, then this has implications for workforce planning and for the design of training programmes. One aim of the initial MMC reforms of specialist training was to reduce uncertainty through developing shorter, more structured training pathways, an aim which is not easy to reconcile with the demand for flexibility to accommodate late career decisions and changes (Tooke 2007).

Factors influencing early career preferences and choices

4.41 UK MCRG and other surveys (such as the BMA’s cohort studies) ask respondents to rate a list of factors with respect to their importance in influencing their early career preferences and later choices. These factors generally include intrinsic characteristics of the work (although what intrinsic features are being preferred is rarely established) and individuals’ attitudes and experience that might influence circumscription, and those relating to work organisation and extrinsic characteristics such as pay and career opportunities, more relevant to compromise.

4.42 In the early years after qualification, the factors consistently reported as having most overall influence on career preference for both women and men are intrinsic characteristics of
the medical work, their own experience and enthusiasm for the field and self-appraisal of aptitudes. As might be expected, rating of extrinsic factors, such as work organisation and job availability, tends to increase over time, with women being consistently more likely to place more importance on some specific features of work organisation, particularly working hours, than men. The proportion of women rating domestic circumstances and availability of part-time work as important also increases over time (eg British Medical Association 2005; Goldacre and Lambert 2000).

4.43 The UK MCRG surveys of 1996 and 1999 qualifiers in their first year asked about career choices that had been seriously considered and then rejected by this stage. Approximately one-third of respondents reported having been through this process, with surgical specialties, paediatrics and obstetrics and gynaecology being significantly ‘over-represented’ among rejected choices (ie seriously considered and then rejected by significantly more respondents than seriously considered and then ‘chose’ that specialty). Factors relating to quality of life were the most commonly reported reasons for rejecting hospital-based specialties, including, but not confined to, surgical specialties. Women were more likely than men to give such reasons for rejecting a hospital specialty.

4.43.1 Of the 562 doctors who reported having seriously considered and decided against surgery, 55% gave ‘quality of life’ as the main reason, but 24% specified ‘working relationships’. Qualitative comments quoted indicate that some women had seriously considered surgery and been put off by the attitudes of some surgeons and the culture of surgery, but this may also have been true for some men (Lambert et al 2003b).

4.43.1.1 Some of the students in our seminar indicated that they would not consider a surgical career because they wanted a ‘a life’. Students (male and female) also reported that most of the relatively few senior female clinicians they had experienced were ‘terrifying’; negative rather than positive role models. The students attributed this to generational factors, to the battles today’s senior female clinicians had to win in order to achieve professional success.

4.43.2 Other quantitative data from UK MCRG surveys do not suggest that women’s lower early preference for surgery is likely to be wholly due to their being put off by exposure to surgery and surgeons in their (once compulsory) surgical house posts. The first year surveys of 1999, 2000 and 2003 qualifiers did not find significant gender differences in satisfaction with these posts, including in ratings of the quality of training and support from senior doctors, a finding also supported by a qualitative interview study of pre-registration house officers (Goldacre et al 2003; Lambert and Goldacre 2006; Williams and Cantillon 2000).6

4.44 The UK MCRG has undertaken analyses of the factors influencing career choice across all cohorts for some specific specialties. Some consistent differences between specialties emerge. For example, self-appraisal of aptitudes and the influences of particular teachers tend to be higher among those who specified an early preference for trauma and orthopaedic surgery (and among those who eventually settled on a surgical career for older cohorts), while anticipated working conditions and hours and domestic considerations tended to be rated as rather less important, compared with those who initially preferred a non-surgical career (Goldacre et al 2008).

6 Ratings of quality of training in surgical posts tended to be lower than medical posts in these surveys for both men and women.
4.45 In contrast to orthopaedics, among the small number who had early preferences for ophthalmology, high importance was accorded to the attractions of regular working hours and good working conditions as well as to the intrinsic interest of the specialty and individuals’ enthusiasm. Indeed, the former were more frequently rated as highly important for would-be ophthalmologists than for any other field except general practice. As with general practice, concordance between early first preferences and eventual career destination was very high for ophthalmology (and, previously noted, the proportion of women considering ophthalmology was higher in the early years than for other ‘surgical’ specialties (Lambert et al 2008).

4.46 The evidence presented so far indicates that, if past patterns continue, further increases in the proportion of women qualifying in medicine in the UK could have implications for the overall distribution of early career preferences. For example:

- The total percentage and numbers of graduating cohorts with first preference for surgical careers may fall below current levels, although this would not necessarily result in a shortage of recruits for surgery (and the numbers of women preferring surgery might rise).

- As general practice currently recruits mainly women, the planned expansion of GP numbers might be more likely to be achieved if the proportion of women entering the profession continues to rise, although, as discussed in Chapter 5, more of any expanded GP workforce may work less than full-time.

- Women are more likely to report regular working hours and predictability-related aspects of working arrangements as important influences on their early career preferences confirming the value of the matrix in Fig 4.1. It is, therefore, possible that specialties with irregular and long working hours will become relatively less popular in terms of early career preferences as the proportion of women entering medicine increases.

- However, it is also possible that, if differences between specialties in terms of hours expected reduce, more women may consider the specialties that currently have unpredictable working patterns. The importance accorded intrinsic characteristics of the work involved in the different specialties suggests that all aggregate gender differences in early career preferences are unlikely to disappear as a result of adjustment in working hours alone. Moreover, other salient differences between specialties may remain: for example, in length of training.

For example, even under the shortened training planned under MMC, training for surgical specialties is currently expected to take at least one year longer than almost all other hospital-based specialties (Postgraduate Medical Education and Training Board 2008b).

4.47 So far, the evidence presented has, however, been primarily of surveys of career preferences, with some reference to career destinations of past cohorts, whose experience may no longer be relevant. In the following sections, actual job applications made and training posts currently held in different specialties are considered.
Gender patterns in postgraduate training posts

4.48 For careers in clinical medicine today, formal postgraduate training is a prerequisite for achieving a secure career position. So, making a successful application for a training post is an essential step for career progression. As described in Chapter 1, in the NHS the number of training places in each specialty is currently set through annual workforce planning exercises, involving the service and royal colleges at regional or national levels in assessing the likely demand for consultant or general practice provider posts.

4.49 As discussed in Chapter 2, there are several sources of data on doctors in the training grades, all of which have some problems. What follows, therefore, is a summary of some of the available material, none of which is entirely satisfactory for detailed analysis of trends in postgraduate training as the proportion of women eligible to apply for such training has increased. The discussion begins with consideration of trends in training for general practice over the last decade, followed by a similar analysis for the HCHS as a whole, using UK MCRG cohort and NHS workforce census data, with a more detailed examination of the specialties within the two largest specialty groups, the medical and surgical groups, drawing on information supplied by two royal colleges. Finally, the most recent data discussed are those for applications and acceptances in the first, and controversial, recruitment round for specialty training under MMC in 2007.

Recent trends in training for general practice

4.50 Given the evidence from cohort studies of women being more likely to express early preference for general practice, it is not surprising that there is abundant evidence that, for many years, they have been more likely than their male peers to have entered GP training, giving rise to Allen’s description of general practice as a ‘happy hunting ground’ for women doctors (Allen 1988). For example, in Table 4.2, comparison of UK MCRG surveys of the 1993, 1996 and 1999 cohorts, approximately six years after qualification, shows that, of those doctors who had entered higher training posts by this point, more of the women than the men were on the training path into general practice.

4.51 As a result of UKMG women’s greater preference for general practice, and the relatively low numbers of IMGs seeking to enter general practice in recent years, women have comprised the majority of those training specifically for careers in NHS general practice since the mid-1990s. From 2001 to 2007, the proportion of women among all GP registrars in England remained constant, at 60–61%, although the numbers of both female and male GP registrars fell between 2004 and 2007 (NHS Information Centre 2008a).

<table>
<thead>
<tr>
<th>Table 4.2 Percentage of doctors in registrar posts 6 years after qualification by gender and cohort of qualification.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qual. 1993</strong></td>
</tr>
<tr>
<td><strong>% of M</strong></td>
</tr>
<tr>
<td>Specialist registrars</td>
</tr>
<tr>
<td>GP registrars</td>
</tr>
</tbody>
</table>

4.52 In summary, the increasing proportion of women entering the medical profession has been particularly visible in general practice, although the rate of increase has stabilised since 2001, as the hospital sector of the NHS has expanded faster. As noted in Chapter 1, in 2007 42% of all NHS GP practitioners in England were female, compared to 31% in 1997 (NHS Information Centre 2008a). Over the last decade, as cohorts with a majority of female trainees have completed their training, the percentage of trained GP practitioners has risen among younger age groups. On current trends, the percentage of women among all NHS GPs in England is likely to exceed 50% by 2013.

4.52.1 In 1997, 38% of all GP practitioners under the age of 45 were female. By 2004, the percentage had risen to just over 50%.

4.52.2 In 2007, among UK-trained GPs, the percentage who were female was more than 50% in all age groups below the age of 50.

4.53 The marked increase in the percentage of younger GPs who are female is partly because the number of male GPs aged under 45 actually declined by a quarter (over 2,300 doctors) between 1997 and 2006, while the number of women rose by 2,100 doctors. In short, there has been a small net fall in the number of GPs aged under 45 over the last decade (and a reduction of 4.2% in the FTE equivalent GP workforce aged under 45 over the last decade).\(^7\)

**Recent trends in higher specialist training for hospital and community specialties**

4.54 Table 4.3 shows the numbers and percentages of women (both UKMGs and IMGs) in the ‘registrar’ grade for the 12 main specialty groups used in current staffing tables for NHS hospital and community services in England for 1996 and 2006. In theory, with the onset of structured training most of these doctors should achieve consultant appointments, but, as noted earlier, there will be some doctors recorded in this grade who are not in approved training posts.

4.55 The number of female registrars increased by 98%, males by 49% (not shown directly) and all registrars by 65% between 1996 and 2006. The proportion of women among all registrars rose from one-third to almost 40% over this decade. According to Table 4.3, the percentages of women in the registrar grades in all specialties, except radiology, increased between 1996 and 2006, as the hospital sector has expanded.

4.56 Numbers have grown in all fields except two. Trends over time in gender distribution between specialties will be affected by any differences in the growth/contraction of training opportunities and service demands, as well as by individual choices. Although public health has the highest proportion of women of all specialties, actual numbers have fallen, as a consequence of NHS reorganisation reducing the demand for trainees. Numbers in the registrar grades have also fallen for both sexes in psychiatry, a specialty with long-standing recruitment problems.

4.57 So, overall, there has been a considerable increase in women’s presence in the NHS pay grade that approximates to higher specialist training, but there remain major differences between the specialties.

4.57.1 Women were more than 50% of registrars in four specialties in 1996 (clinical oncology, paediatrics, pathology and public health). By 2006, obstetrics and gynaecology could be added to that list.

\(^7\) Data from NHS IC. Trends in FTEs may be affected by changes in contracts, coding and FTE calculations so should be treated with caution.
4.57.2 Women were at least 40% of registrars in all groups except three: accident and emergency, anaesthetics, and the surgical group. In the first and third of these, however, there has been a substantial increase in the percentage of women, and the second is a very large, expanding specialty.

4.57.3 In 2006, although women were still less than 20% of all surgical registrars, this was almost a doubling of the percentage in 1996, and the proportion of all women registrars who were in surgical specialties also increased.

4.58 A simple approach to comparing the distribution of men and women in different fields (sometimes known as horizontal gender segregation) is used in Table 4.3 to compare the gender proportions in particular fields with the average ratio across all fields (Hakim 1979). In the case of registrars in medical specialties this would be 33.3% female in 1996 and 39.9% female in 2006. Allowing ±10% either side of these average percentages generates average bands of 29.7–36.6% women registrars in 1996, and 35.9–43.9% women registrars in 2006.

4.58.1 For those specialties with a higher percentage of women than the upper boundaries for the average band, cell entries are in *italics* in Table 4.3, and for those with percentage of women within the average band, cell entries are in **bold**.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>1996 F nos</th>
<th>% of F SpRs</th>
<th>1996 M nos</th>
<th>% of M SpRs</th>
<th>Total nos</th>
<th>% of total</th>
<th>2006 F nos</th>
<th>% of F SpRs</th>
<th>2006 M nos</th>
<th>% of M SpRs</th>
<th>Total nos</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;E</td>
<td>49</td>
<td>1.2</td>
<td>1.8</td>
<td>184</td>
<td>26.6</td>
<td>301</td>
<td>4.0</td>
<td>4.4</td>
<td>802</td>
<td>37.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>495</td>
<td>13.0</td>
<td>13.0</td>
<td>1,479</td>
<td><strong>33.5</strong></td>
<td>865</td>
<td>11.5</td>
<td>12.5</td>
<td>2,283</td>
<td><strong>37.9</strong></td>
<td></td>
<td></td>
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<tr>
<td>Clinical oncology</td>
<td>70</td>
<td>1.8</td>
<td>0.9</td>
<td>136</td>
<td>51.5</td>
<td>179</td>
<td>2.4</td>
<td>1.1</td>
<td>302</td>
<td>59.3</td>
<td></td>
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<tr>
<td>Dental group</td>
<td>108</td>
<td>2.8</td>
<td>2.5</td>
<td>295</td>
<td><strong>36.6</strong></td>
<td>146</td>
<td>1.9</td>
<td>1.8</td>
<td>345</td>
<td><strong>42.3</strong></td>
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<tr>
<td>Gen med group</td>
<td>743</td>
<td>19.6</td>
<td>22.6</td>
<td>2,460</td>
<td><strong>30.2</strong></td>
<td>1,822</td>
<td>24.3</td>
<td>23.3</td>
<td>4,454</td>
<td><strong>40.9</strong></td>
<td></td>
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<tr>
<td>O&amp;G</td>
<td>335</td>
<td>8.8</td>
<td>7.0</td>
<td>863</td>
<td>38.8</td>
<td>827</td>
<td>11.0</td>
<td>4.4</td>
<td>1,328</td>
<td>62.3</td>
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<tr>
<td>Paediatric group</td>
<td>400</td>
<td>10.5</td>
<td>4.8</td>
<td>762</td>
<td>52.5</td>
<td>989</td>
<td>13.2</td>
<td>6.6</td>
<td>1,736</td>
<td>57.0</td>
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<tr>
<td>Pathology group</td>
<td>288</td>
<td>7.6</td>
<td>4.0</td>
<td>594</td>
<td>48.5</td>
<td>568</td>
<td>7.6</td>
<td>4.0</td>
<td>1,022</td>
<td>55.6</td>
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<tr>
<td>Public health</td>
<td>144</td>
<td>3.8</td>
<td>1.6</td>
<td>266</td>
<td>54.1</td>
<td>114</td>
<td>1.5</td>
<td>0.6</td>
<td>179</td>
<td>63.7</td>
<td></td>
<td></td>
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<tr>
<td>Psychiatry group</td>
<td>691</td>
<td>18.2</td>
<td>10.3</td>
<td>1,470</td>
<td>47.0</td>
<td>499</td>
<td>6.6</td>
<td>4.6</td>
<td>1,022</td>
<td>48.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiology group</td>
<td>208</td>
<td>5.5</td>
<td>3.6</td>
<td>484</td>
<td>43.0</td>
<td>411</td>
<td>5.5</td>
<td>5.2</td>
<td>1,004</td>
<td><strong>40.9</strong></td>
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<tr>
<td>Surgical group*</td>
<td>261</td>
<td>6.9</td>
<td>28.1</td>
<td>2,392</td>
<td>10.9</td>
<td>783</td>
<td>10.4</td>
<td>31.4</td>
<td>4,331</td>
<td>18.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All specialties</td>
<td>3,792</td>
<td>100</td>
<td>100</td>
<td>11,385</td>
<td>33.3</td>
<td>7,504</td>
<td>100</td>
<td>100</td>
<td>18,808</td>
<td>39.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


*Bold* indicates female:male ratio in average band for all specialties.

*italics* indicates females above average proportion.

*NHS surgical group, includes ophthalmology, excludes oral maxillo-facial surgery (OMFS).*
4.59 In 1996, there were seven broad specialties/specialty groups in which there were relatively more women than the average (clinical oncology, obstetrics and gynaecology, paediatrics, pathology, public health and community medical services, psychiatry and radiology). In three, the percentage of women was similar to that of women overall (anaesthetics, dental specialties and general medicine); and two had more males than the average (accident and emergency and surgery).

4.60 In 2006, there were six specialties with higher than average percentages of women (clinical oncology, obstetrics and gynaecology, paediatrics, pathology, psychiatry and public health); five had percentages of women in line with the average; and just one (surgery) had more males than might have been expected from the average.

4.61 The two fields that moved into the ‘average’ category were radiology, which moved from having more females than the average, and accident and emergency, which no longer had relatively more males than all specialties in 2007. Both these specialties exemplify movement over time on the two-dimensional map of specialty characteristics (Fig 4.1), and this may have some bearing on the changes in gender composition.

4.61.1 In the case of radiology, new investigative technologies have been developed, potentially increasing the unpredictable element in some branches of the specialty, hence moving some of the specialty’s work to the right in Fig 4.1. Earlier it was noted that, perhaps not coincidentally, there has been a significant increase in the percentage of men giving clinical radiology as first career preference in recent cohorts surveyed by UK MCRG (Turner et al 2006). Promotion prospects in radiology were also relatively good in the early part of the last decade, although in the 2007 MMC/MTAS round, radiology was a very competitive specialty.

4.61.2 Accident and emergency (emergency medicine (EM)) has expanded and developed considerably over the last decade, and, although the clinical challenges may remain relatively unpredictable, work patterns have become increasingly likely to be organised on predictable shift patterns. A recent report on the future workforce in emergency medicine noted that, EM is especially suited to doctors who wish to work on a part-time contract. With more multi-consultant departments and more shift work, the trend to less than full time working will increase’ (College of Emergency Medicine 2008: 33).

4.62 Table 4.3 also shows that there have been changes over the decade in the distribution of female and male registrars across the specialties. The proportion of all women registrars working in the specialties with above average percentages of women registrars decreased between 1996 and 2006.

4.62.1 Overall, in 1996, 8.5% of women registrars (310 women) were working in specialties where there were more men than the average, 35.5% in ‘average’ specialties; and 56.3% in specialties with an above average percentage of women. In 2006, the comparative percentages were, respectively, 10.4% (783 women), 47.2% and 42.3%.

4.62.2 Among male registrars in 1996, 29.8% (2,266) were working in specialties with more males than average, 38.0% in ‘average’, and 32.2% in specialties with above average percentage of females. In 2006, the equivalent percentages were 31.4% (3,548 – with surgery being the only field with above average percentage of males in 2006), 47.3% and 21.3%.

4.63 In summary, the NHS medical workforce census data indicate that, although there has been a very substantial increase in the percentage of women registrars in the HCHS over the last
decade, this increase has not occurred evenly across the specialties. This is partly a function of variation in the size and rate of expansion of different specialties. The data also indicate that the patterns of and trends in aggregate gender differences in early career preferences found in UK MCRG surveys are broadly reproduced in the ‘registrar and equivalent’ grade.

4.64 Over the last decade, there has been an increase in the percentage of registrars of both sexes who were working in specialties with an ‘average’ ratio of women to men, while the percentage of women working in HCHS specialties with above average proportion of women registrars has decreased. In this respect, ‘gender segregation’ has decreased over the decade as the number of women and the percentage they comprise of specialist trainees has increased. But in 2006, 1 in 3 men and 2 in 5 women registrars were training in specialties with an above average percentage of their sex. Even if there has been some decrease in the gender differences in specialty choice, these figures suggest that the differences will not disappear in the near future.

4.65 The NHS census statistics have, as already noted, several disadvantages. Not all the doctors in the ‘registrar’ grades will be in recognised training posts; the specialty groupings are broad; and MMC related changes from 2007 will reduce comparability with earlier years. While for trend data, there is no generally available alternative to the NHS workforce census, more specific information was made available for the most recent years by some of the royal colleges, as well as from MTAS for 2007, which might serve as better guides to the gender composition of the future consultant workforce. The discussion here is limited to the largest two specialty groups: medicine and surgery.

Specialist trainees in the ‘physicianly’ specialties

4.66 Table 4.4 presents data from the Royal Colleges of Physicians database from April 2007, showing all those recorded in higher specialist training in a medical specialty in the UK, compared with the NHS workforce census registrar data for England 2006. For most of the larger specialties, the proportion of women was slightly higher in the RCP data set, which may be because ‘registrars’ in service-only posts are not included. The same procedure for coding specialties in relation to the average gender ratio is used for the RCP data as in Table 4.3.

4.66.1 Five specialties (cardiology, gastroenterology, neurology, pharmaceutical medicine and renal medicine) have below average percentages of females compared to the overall percentage of female higher trainees in the ‘physicianly’ specialties. Just under 1 in 5 of all female medical specialist registrars (SpRs) were in these specialties, compared to almost 2 in 5 males.

4.66.2 Four of these five are acute specialties, traditionally with unpredictable workloads. Pharmaceutical medicine is located close to the ‘realistic’ pole on the career preference map (Petrides and McManus 2004).

4.66.3 Six specialties – dermatology, genito-urinary medicine, haematology, medical oncology, palliative medicine and rheumatology – have above average percentages of females (that is, more than 50%). In total 37.8% of female medical SpRs work in these six fields. These specialties are mainly organised on an outpatient basis or have relatively predictable working patterns, and most involve high social orientation in the form of long-term care of some individual patients.
Table 4.4  Female higher trainees and registrars in medical specialties.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>F</th>
<th>Higher trainees total</th>
<th>% F of SpRs in specialty</th>
<th>% F of registrars in medical group (NHS: England 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>112</td>
<td>569</td>
<td>19.7</td>
<td>18.3</td>
</tr>
<tr>
<td>Dermatology</td>
<td>160</td>
<td>218</td>
<td>73.4</td>
<td>71.3</td>
</tr>
<tr>
<td>Endo &amp; diabetes</td>
<td>196</td>
<td>456</td>
<td>43.4</td>
<td>41.1</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>145</td>
<td>569</td>
<td>25.5</td>
<td>25.6</td>
</tr>
<tr>
<td>Genito-urinary medicine</td>
<td>115</td>
<td>157</td>
<td>73.2</td>
<td>67.7</td>
</tr>
<tr>
<td>Geriatric medicine</td>
<td>265</td>
<td>581</td>
<td>45.6</td>
<td>42.9</td>
</tr>
<tr>
<td>Haematology</td>
<td>209</td>
<td>399</td>
<td>52.4</td>
<td>54.2*</td>
</tr>
<tr>
<td>Medical oncology</td>
<td>134</td>
<td>231</td>
<td>58.0</td>
<td>55.4</td>
</tr>
<tr>
<td>Neurology</td>
<td>70</td>
<td>192</td>
<td>36.5</td>
<td>30.3</td>
</tr>
<tr>
<td>Palliative medicine</td>
<td>171</td>
<td>207</td>
<td>82.6</td>
<td>81.9</td>
</tr>
<tr>
<td>Pharmaceutical medicine</td>
<td>67</td>
<td>186</td>
<td>36.0</td>
<td>n/a</td>
</tr>
<tr>
<td>Renal medicine</td>
<td>138</td>
<td>359</td>
<td>38.4</td>
<td>37.1</td>
</tr>
<tr>
<td>Respiratory medicine</td>
<td>263</td>
<td>612</td>
<td>43.0</td>
<td>41.3</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>155</td>
<td>279</td>
<td>55.6</td>
<td>55.7</td>
</tr>
<tr>
<td>Other*</td>
<td>295</td>
<td>687</td>
<td>42.9</td>
<td>55.0</td>
</tr>
<tr>
<td>All medical specialties†</td>
<td>2,495</td>
<td>5,702</td>
<td>43.9</td>
<td>40.9</td>
</tr>
</tbody>
</table>

Sources: Royal Colleges of Physicians Higher Medical Training Database, April 2007, and NHS Information Centre 2007b.
*Included in pathology group in NHS Census.  **Bold: Female:male ratio in average band for all specialties.
†Excludes pathology registrars.

4.67 Table 4.4 shows that, although the percentage of women registrars in the medical group as a whole was in line with the average for all specialty groups, at the specialty level, there was considerable variation within the medical group in 2007. But overall, more than 40% of trainees in eight of the 14 larger medical specialties were female.

Specialist training in the surgical specialties

4.68 Table 4.5 shows the numbers and percentage who were women in the registrar grade for all the surgical specialties identified in the NHS workforce census, compared with the figures of those completing specialist training in surgical specialties in the last two years (except for
Women and medicine

ophthalmology where the figures refer to all higher trainees). The Royal Colleges’ data do not consistently show a higher percentage of females than the NHS data, but the absolute numbers are so small as to give rise to chance variations, and those completing CCT are only part of the total stock of trainees.

4.69 Because the numbers of women are so small, categorising specialties into bands in relation to the average would be meaningless. However, some points about differences can be made.

4.69.1 As discussed in Chapter 1, excluding ophthalmic registrars reduces the percentage of females in the NHS surgical group, from 18.1% to 16.3%.

4.69.2 Within the RCS specialties, the highest proportions of females among NHS registrars or CCT achievers were in paediatric and plastic surgery. But total numbers are very small in both fields.

4.69.3 About one-third of both female and male surgical registrars were in general surgery posts, but, while 27.5 of the male registrars were in T&O posts, only 14.2% of females were. One in five female surgeons newly qualified at CCT in 2006–8 were in trauma and orthopaedics (T&O) (and 2 in 5 of male equivalents).

Table 4.5 Numbers and percentage of women in surgical specialties completing CCT 2006-8 and in NHS registrar grade in 2006, England.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>New CCTs Φ</th>
<th>Total</th>
<th>% F</th>
<th>NHS registrars F</th>
<th>Total</th>
<th>% F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiothoracic surgery</td>
<td>9</td>
<td>58</td>
<td>15.5</td>
<td>22</td>
<td>251</td>
<td>8.8</td>
</tr>
<tr>
<td>General surgery</td>
<td>48</td>
<td>274</td>
<td>17.5</td>
<td>259</td>
<td>1,302</td>
<td>19.9</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>2</td>
<td>44</td>
<td>4.5</td>
<td>27</td>
<td>208</td>
<td>13.0</td>
</tr>
<tr>
<td>Ophthalmology*</td>
<td>157</td>
<td>398</td>
<td>39.4</td>
<td>146</td>
<td>434</td>
<td>33.6</td>
</tr>
<tr>
<td>Otolaryngology+</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>72</td>
<td>310</td>
<td>23.2</td>
</tr>
<tr>
<td>Paediatric surgery</td>
<td>5</td>
<td>19</td>
<td>26.3</td>
<td>36</td>
<td>95</td>
<td>37.9</td>
</tr>
<tr>
<td>Plastic surgery</td>
<td>18</td>
<td>68</td>
<td>26.5</td>
<td>60</td>
<td>244</td>
<td>24.6</td>
</tr>
<tr>
<td>Trauma &amp; orthopaedic</td>
<td>24</td>
<td>291</td>
<td>8.2</td>
<td>111</td>
<td>1,193</td>
<td>9.3</td>
</tr>
<tr>
<td>Urology</td>
<td>9</td>
<td>79</td>
<td>11.4</td>
<td>50</td>
<td>294</td>
<td>17.0</td>
</tr>
<tr>
<td>OMFS</td>
<td>5</td>
<td>44</td>
<td>11.4</td>
<td>18</td>
<td>118</td>
<td>15.3</td>
</tr>
<tr>
<td>All surgical specialties‡</td>
<td>120</td>
<td>757</td>
<td>13.7</td>
<td>783</td>
<td>4,331</td>
<td>18.1</td>
</tr>
</tbody>
</table>

Sources: Women in Surgery (WinS) at RCS and NHS Information Centre (2007b).

*Not an RCS specialty. Figures in CCT column are SpRs and LATs in 2007, as supplied by Royal College of Ophthalmologists.

†Not available.

‡Totals for CCTs include OMFS & exclude ophthalmology (and converse for NHS total).

Italics: more females in specialty than average.
4.70 The data shown in Tables 4.3, 4.4 and 4.5 suggest that, although the percentage of females among trainees is rising in almost every specialty, the variation in gender ratios between specialties found among the existing stock of consultants is likely to continue for the immediate future. Most of the trainees recorded in these three tables, however, will have qualified at least five years ago, and some considerably earlier. The next section considers information about more recent entrants to specialist training.

Applications and acceptances for ST1 posts in 2007 under MMC/MTAS

4.71 The most recent data on young doctors’ career choices that were available to this project were from the 2007 MMC/MTAS specialty application process. Although, as noted already, these data need to be treated with some caution because of the exceptional circumstances prevailing in 2007, they do have the advantage of providing some information about applications as well as about posts accepted. 8

4.72 Those who applied for ST1 level posts in 2007 were, in theory at least, young doctors embarking on specialist training for the first time. Applicants under MTAS for ST1 posts in 2007 could apply for posts in more than one specialty, while nominating a first choice of post, and therefore, by implication, a first choice of specialty. Table 4.6 shows the distribution of first choices for all ST1 applicants and acceptances, and for UKMG applicants and acceptances only, in England in 2007.

4.72.1 In Table 4.6, cells in the columns listing the percentage of women in each specialty are coded relative to the average percentage for all specialties ±10% as before.

4.73 Women were 50.8% of all these applicants, 53.8% of UKMG applicants, and 47.4% of the IMG applicants. The percentage of women among acceptances was slightly higher than among applicants: 54.5% for all, 56.6% among UKMGs, and 48.4% among IMGs.

4.73.1 For all specialties except ophthalmology and paediatrics, the percentage of women among acceptances was at least as high as the percentage of first choice applicants. The same was true when only UKMGs are considered (except for surgery where the difference was minute). So, these data provide prima facie evidence that women were no less likely than men to have been successful in finding posts in the 2007 ST1 competition.

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8 Latest data for 2007 supplied by WDAT was on 11 February 2008. ‘Acceptances’ and ‘successes’ refer to the situation as of 12 November 2007, and to positions in England only. Some doctors whose first preference was for a post in England may have been successful in obtaining posts in one of the other UK constituent countries and some acceptances will be of doctors whose first preference was not in that specialty.
4.74 IMG applicants and acceptances were more likely to be female in this recruitment round than in training grades in the NHS at present, but IMGs were less likely to be accepted than UKMGs. IMGs comprised, in total, 45.2% of applicants whose first choice posts were recorded, but only 25.4% of acceptances.

4.74.1 Five specialty pathways attracted a higher percentage of IMGs’ first choices than among UKMGs: clinical radiology, general practice, O&G, pathology and psychiatry. In pathology and psychiatry, the majority of acceptances, 60.7 and 57.7% respectively, were IMGs. In O&G and paediatrics, over 30% of acceptances were IMGs.
4.74.2 Female IMGs’ first choices and acceptances were particularly high in pathology, O&G and paediatrics.

4.75 Although some of the new MMC pathways differ slightly from UK MCRG and NHS specialty categories, the distribution of first choice preferences and acceptances by specialty within each sex shown in Table 4.6 broadly confirms the validity of the UK MCRG early career preference data, particularly when the UKMG ST1 applicants’ ‘first choice’ patterns are compared to those for the most recent UK MCRG cohort yet reported on (2002 qualifiers). Moreover, there is considerable continuity in patterns of both applications and acceptances with the NHS and other data on those already in specialist or registrar training grades.

4.76 In all three data sets, specialties can be grouped into three categories: those with a higher percentage of first choices and acceptances among women; those with similar percentages of applications and acceptances for each gender; and those with higher percentages of applications and acceptances among men than women. The specialties in each category are the same, although actual percentages vary. Those in the first set are primarily from the left-hand side of the matrix (Fig 4.1) and those in the second set are primarily those in the lower right quadrant.

Recruitment to ST1 posts in general practice in 2007

4.77 Recruitment to general practice ST1 positions under MTAS in England in 2007 is generally reported to have gone rather more smoothly than for hospital specialist positions. The data, summarised in Table 4.6, indicate that women continued to comprise the majority of those seeking to enter and taking up training posts in general practice. This was particularly the case among UKMGs.

4.77.1 The actual proportion selecting general practice was higher among ST1 UKMG applicants than among recent first year UK MCRG cohorts, but this is to be expected, as the former will have had at least two years’ postgraduate experience, so more may be moving towards general practice.

4.77.2 There was no difference among women in the percentage of UKMG and IMG applicants who made general practice their first choice, but only 28.7% of male UKMGs, compared to 37.8% of male IMGs did so.

4.77.3 Overall, 61.8% of acceptances for ST1 in general practice were female. The acceptance rate appears, however, to have been much higher for UKMG applicants of both sexes than for IMGs. Among the former, there were 83 and 76 acceptances per 100 ‘first choice’ applicants, for females and males respectively, and 31 and 25 per 100 applicants among female and male IMGs.

4.77.4 In total, 34.8% of all ST1 acceptances were for general practice posts (35.3% of all UKMG ST1 acceptances). Among UKMG women’s acceptances, 37.6% were for general practice, but for UKMG men, the percentage was only 29.1%.

4.78 Although there appears to have been no shortage of acceptable applications for general practice training posts in the 2007 MTAS recruitment round, there may be no grounds for complacency, if demand rises to the equivalent of 50% of new UK graduates (Department of Health 2008b). UK MCRG data on early career preferences cited earlier suggested that, during the 1990s, general practice was becoming relatively less attractive for UK-trained women, and
even more so for UK-trained men. The 2007 MMC/MTAS data indicate that, although there have been significant changes to GP contracts and conditions since 2003, less than 1 in 3 UKMG men had general practice as first choice or accepted ST1 posts in general practice in 2007, a year of very stiff competition for hospital training posts.

4.78.1 Proposals to increase the length of training for general practice will need to consider the implications, for recruitment and managing transition, of almost two-thirds of new GP trainees being women (Tooke 2007).

Recruitment to HCHS training ST1 posts in 2007

4.79 Although women were less likely than men to have HCHS posts as first choice or acceptances (rather than general practice), Table 4.6 shows that c60% of women’s acceptances (and c70% of men’s) were in HCHS specialties.

4.80 More women than men had first choices in the much smaller fields of paediatrics and O&G, as was also the case for public health, although numbers here are very small. More than half of the women applicants made one of these specialties or general practice their first choice, as did a third of men (general practice being much the largest specialty). Approximately three-quarters of the acceptances in paediatrics, O&G and public health were of women.

4.81 There were four large specialty pathways in which the proportion of women and men who made it their first choice was very similar: acute care common stem (ACCS), anaesthetics, core medical training (CMT) and psychiatry. In total, these specialties accounted for 31.4% of all first preferences. Acceptances in these specialties were in similar proportions.

4.82 Two specialty groups, surgery and clinical radiology, attracted clearly higher proportions of men’s ST1 first choices than women’s, with slightly more men than women opting for ophthalmology. More than 30% of UKMG males had one of these as first choice specialty. These three are the only specialties in which less than half of all acceptances were for women.

4.82.1 Clinical radiology has already been noted as a specialty in which the proportion of men has been increasing.

4.83 As Table 4.6 shows, surgery was chosen by almost three times the percentage of all UKMG men as of women – although twice as many UKMG women made surgery in general their first choice as chose obstetrics and gynaecology. A higher proportion of UKMG males had first choices of surgery than of medical specialties. Once again, the pattern of acceptances was broadly in line with that of applications, although the percentage of all acceptances that were for surgery was slightly smaller than the percentage among ‘first choice’ applicants.

4.83.1 Among UKMGs, there were 65 acceptances per 100 first choices for surgery for women, and 68 for men. Among IMGs, the equivalent rates were 34.6 and 32.9 respectively. Almost all IMG acceptances were of fixed-term specialty training approved (FTSTA) posts.

4.83.2 Of the 290 acceptances for run-through (RT) ST1 posts in surgery in 2007, 30% were women. So, among this particular first MMC cohort, the proportion of women among those most likely to achieve CCT in a surgical specialty was far from negligible, even if lower than in other specialties.
4.83.3 Within the surgical training pathway, women were more likely to have plastic and paediatric surgery as their first choice (although numbers were very small), and men to have trauma and orthopaedic surgery. Equal proportions chose generic or general surgery (66.9% of women and 62.5% of men with surgery as first choice).

4.84 The final column of Table 4.6 shows that, in all specialties except clinical radiology, ophthalmology and surgery, more than half the acceptances were of women. In five specialties – general practice, obstetrics and gynaecology, paediatrics, pathology and public health – the proportion was over 60%. While not all those taking up these posts will achieve CCT or work in the NHS, the percentages in this column give a possible indication of the future gender ratio among entrants to career grade posts in a few years’ time.

Comparison of data sources on specialist trainees

4.85 Table 4.7 shows data on specialist trainees from the three different sources used in this chapter: the NHS medical workforce census as adjusted for MMC changes in 2007 (with 2006 figures in parentheses); information provided on trainees from royal colleges where comparable data were available; and the MTAS acceptances at ST1 level for all posts in 2007, with those designated as RT or academic posts in parentheses.

4.86 Although differences in the column values are small in most cases, in every row the percentages of women in the NHS census for 2006 are the lowest. The table suggests that the NHS workforce data on ‘registrars’ in 2006 understated the percentage of women among higher

<table>
<thead>
<tr>
<th>Specialty Group</th>
<th>NHS Census England 2007 Registrar Grade (2006)</th>
<th>Royal College Higher Specialist Trainees (SpRs/Type 1 programme 2005–7)</th>
<th>MMC/MTAS Acceptances ST1 Posts – All Types (RT/Acad)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaesthetics</td>
<td>42% (38%)</td>
<td>not available</td>
<td>52% (52%)</td>
</tr>
<tr>
<td>Medical group (CMT)</td>
<td>46% (41%)</td>
<td>43%</td>
<td>51% (58%)</td>
</tr>
<tr>
<td>O&amp;G</td>
<td>65% (62%)</td>
<td>62%</td>
<td>79% (84%)</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>37% (34%)</td>
<td>39%</td>
<td>36% (35%)</td>
</tr>
<tr>
<td>Paediatrics group</td>
<td>59% (57%)</td>
<td>–60%</td>
<td>72% (73%)</td>
</tr>
<tr>
<td>Psychiatry group</td>
<td>49% (49%)</td>
<td>not available</td>
<td>52% (57%)</td>
</tr>
<tr>
<td>Clinical radiology</td>
<td>43% (41%)</td>
<td>43%</td>
<td>42% (43%)</td>
</tr>
<tr>
<td>Surgical group*</td>
<td>21% (16%)</td>
<td>19%</td>
<td>27% (30%)</td>
</tr>
<tr>
<td>General practice</td>
<td>61% (61%)</td>
<td>not available</td>
<td>62% (64%)</td>
</tr>
</tbody>
</table>

Sources: NHS Information Centre, WDAT, and relevant royal colleges.
*Excluding ophthalmology.
specialist trainees because of the inclusion of doctors in service posts (more likely to be IMG males in some specialties).

4.86.1 The MMC/MTAS column represents a single (and the most recent) year’s flow of entrants to a training pathway. So, it is not surprising that it shows a higher percentage of women, especially among RT posts.

**Specialty choice outcomes: current and possible future patterns in the NHS**

4.87 Comparison of the gender composition by specialty of those in training grades with those in the main NHS career grades shows a broad association: the percentage of women among trainees tends to be highest in those specialties that have a high proportion of women consultants (or GPs), as shown in Table 4.8. Variation in the gender ratio between specialties is unlikely to disappear soon. However, to emphasise the variation between specialties is to risk underplaying the more significant general change: the increase across the board in the numbers of women and the percentage they comprise of entrants to specialist training – and the implications that this increase has for the future stock of career grade doctors in the NHS.

4.88 If specialty choices remain broadly similar to those for ST1 in 2007 for the next decade, in a decade’s time the majority of new consultants appointed from all but three of the MMC specialty pathways (as currently organised) will probably be women. In the case of general practice, it seems likely that a majority of all GPs will be women well within the decade.

### Table 4.8 Percentage of females among ST1 acceptances and consultant/GP posts, NHS England, 2007.

<table>
<thead>
<tr>
<th>Specialty</th>
<th>% females of ST1 acceptances</th>
<th>% females of NHS consultants/GPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCS (A&amp;E)</td>
<td>52.1</td>
<td>23.2</td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>52.6</td>
<td>28.8</td>
</tr>
<tr>
<td>Clinical radiology/ radiology group</td>
<td>40.8</td>
<td>31.3</td>
</tr>
<tr>
<td>CMT/medical group</td>
<td>50.9</td>
<td>25.0</td>
</tr>
<tr>
<td>O&amp;G</td>
<td>78.6</td>
<td>32.8</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>35.9</td>
<td>21.1</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>72.4</td>
<td>44.0</td>
</tr>
<tr>
<td>Pathology*/pathology group</td>
<td>60.7</td>
<td>38.5</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>51.8</td>
<td>37.7</td>
</tr>
<tr>
<td>Public health</td>
<td>77.1</td>
<td>48.8</td>
</tr>
<tr>
<td>Surgery/surgical group*</td>
<td>27.0</td>
<td>6.6</td>
</tr>
<tr>
<td>General practice</td>
<td>61.8</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Sources: WDAT and NHS Information Centre (2008b).
* Includes clinical pathology, histopathology, medical microbiology and virology.
* Excludes ophthalmology, includes OMFS.
International comparisons

4.89 Information was sought on the gender patterns within specialties in other countries, in order to establish whether the patterns found in the NHS were found elsewhere or whether they were likely to be the result of specific features of the NHS. Inevitably, the information obtained was often incomplete, and caution needs to be exercised in comparing different healthcare systems and specialty categories. For example, many countries have no or a much smaller primary medical care (general practice or family medicine) sector compared to 'specialists'. The definition of and process of becoming a specialist may vary considerably between countries (Crompton et al 1999).

4.90 Figure 4.3 shows broadly comparable recent information for eight affluent Western countries, all of which have seen a considerable increase in the proportion of women entering medicine in recent years, albeit from different baselines. Among these eight countries the overall percentage of women in the profession ranged from approximately 29% (USA) to 55% (Finland), with the percentage of fully licensed or trained physicians being slightly less, ranging from 27% (USA) to 48% (Finland).

4.91 As with the data on trainees in the English NHS, the different specialties were categorised in relation to the percentage of women specialists (including primary care physicians) in each country, with the boundaries to the 'average' band set at ±10% of the overall figure. There are strong similarities in the patterns observed in the eight countries.

4.92 In seven of the eight countries, the percentage of women is above average in primary medical care or family medicine or in the specialties that serve as primary care specialties in some countries, such as in the USA.

4.92.1 An exception (not shown in Fig 4.3) to the generalisation that women are strongly represented in general practice has been France, at least in the 1990s. This has been explained in terms of the relative ease of establishing specialist practice in France at the time and the very long hours typically worked by independent 'omnipracticiens'. In other words, the working conditions that favour women's choice of general practice in the UK were absent in France (Le Feuvre 2003).

4.93 In nearly all countries, there was a well above average percentage of women in obstetrics and gynaecology and paediatrics. In contrast, anaesthetics had a lower proportion of women among specialist anaesthetists in all but Finland. (There is international variation in the extent to which nurse-anaesthetists provide routine services so the role of medical specialists in this field may vary.)

4.94 The ‘physicianly’ specialties showed a fairly mixed pattern overall – but there may be international differences in specialty boundaries in this category. However, the acute medical specialties of cardiology and gastroenterology were consistently likely to have a lower percentage of women than average.

4.95 In all eight countries, women were less likely to be in most forms of surgery than in the profession overall. The percentage in trauma and orthopaedic surgery is particularly low, even in the Scandinavian countries which have a higher proportion of fully trained women doctors than in the UK (Riska 2001a, b).
## Women and medicine

### Fig 4.3 Percentage women in selected medical specialties in eight countries.

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<tbody>
<tr>
<td>All ages active in medicine</td>
<td>55</td>
<td>44</td>
<td>41</td>
<td>37</td>
<td>33</td>
<td>38</td>
<td>29</td>
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<tr>
<td>All specialists licensed or fully trained</td>
<td>48</td>
<td>38</td>
<td>35</td>
<td>33</td>
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<td>28</td>
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<tr>
<td>General/Family practice (trained)</td>
<td>55</td>
<td>43</td>
<td>43*</td>
<td>36</td>
<td>43*(Prim care=35)</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>All hospital and community specialties</td>
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<td>29</td>
<td>24</td>
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<td>Accident and emergency medicine</td>
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<td>29</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
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<tr>
<td>Anaesthetics</td>
<td>43</td>
<td>28</td>
<td>29</td>
<td>26</td>
<td>26</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Clinical oncology</td>
<td>71</td>
<td>48</td>
<td>38</td>
<td>31</td>
<td>19</td>
<td>30</td>
<td>37</td>
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<tr>
<td>*General medicine group</td>
<td>25</td>
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<td>21</td>
<td>21</td>
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<tr>
<td>General/ intern medicine</td>
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<td>22</td>
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<td>15</td>
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<tr>
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<td>12</td>
<td>16</td>
<td>9</td>
<td>14</td>
<td>10</td>
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<tr>
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<td>33</td>
<td>64</td>
<td>53</td>
<td>53</td>
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<td>45</td>
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<tr>
<td>Dermatology (derm-venerology)</td>
<td>73</td>
<td>61</td>
<td>46</td>
<td>39</td>
<td>25</td>
<td>32</td>
<td>35</td>
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<tr>
<td>Endocrinology and diabetes mellitus</td>
<td>43</td>
<td>34</td>
<td>21</td>
<td>48*</td>
<td>30</td>
<td>22</td>
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<tr>
<td>Gastroenterology</td>
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<td>15</td>
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<tr>
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<td>26</td>
<td>51</td>
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<tr>
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<td>16</td>
<td>23</td>
<td>13</td>
<td>32</td>
<td>25</td>
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<tr>
<td>Occupational health (small usually)</td>
<td>51</td>
<td>33</td>
<td>33</td>
<td>25</td>
<td>35</td>
<td>20</td>
<td>20</td>
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<tr>
<td>Palliative medicine</td>
<td>64</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Rehabilitation medicine</td>
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<td>40</td>
<td>29</td>
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<td>34</td>
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<tr>
<td>Renal medicine</td>
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<td>20</td>
<td>32</td>
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<tr>
<td>Rheumatology</td>
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<td>29</td>
<td>42</td>
<td>29</td>
<td>38</td>
<td>38</td>
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<tr>
<td>Obstetrics and gynaecology</td>
<td>70</td>
<td>57</td>
<td>33</td>
<td>44</td>
<td>28</td>
<td>27</td>
<td>46</td>
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<td>Paediatrics</td>
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<td>39</td>
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<td>32</td>
<td>32</td>
<td>43*</td>
</tr>
<tr>
<td>Public health, community or social medicine</td>
<td>44</td>
<td>34</td>
<td>49</td>
<td>40</td>
<td>43</td>
<td>43</td>
<td>13*</td>
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<td>Psychiatry group</td>
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<td>31</td>
<td>26</td>
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<tr>
<td>Radiology group</td>
<td>42</td>
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<td>31</td>
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<td>27</td>
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<td>35</td>
</tr>
<tr>
<td>Surgical group</td>
<td>8</td>
<td>13*</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<td>6</td>
</tr>
</tbody>
</table>

**Key to bands:**

- Higher % women than average:  <53, >42, >39, >36, >35, >31, >37, >30
- Lower % women than average:  <43, <34, <31, <29, <28, <25, <25, <24

*Including retainers, not registrars*  *excluding D&G*  *Primary care specialty*
4.95.1 The proportion of women in ophthalmology is in the average band in Finland and above average for Sweden. Nearly half of all plastic surgeons in Finland are female (although total numbers are small).

4.96 It was not possible to obtain much detailed recent information at specialty level about Russia or the other ex-Soviet countries in which women have been the majority of doctors for many years. Such information as has been obtained for Russia, Poland, Estonia and Lithuania indicates that, at least during the 1990s, women were less likely to be working in surgery and more likely to be in primary care or public health than their male peers (Barr and Boyle 2001; Riska 2001a; Riska and Novelskaitė 2007) and personal communications.9

4.97 These international comparisons suggest that gender differences in career destinations within medicine do not necessarily disappear when the proportion of women in medicine is higher than it currently is in the UK, although some of the differences may diminish. In the eight countries shown in Fig 4.3 (and many other countries), there is a general tendency for the highest percentage of women to be found in primary or family care specialties or public health, and the lowest in acute medical and surgical specialties. So, the gender patterns observed in the UK at present are not likely to be wholly explicable by features of NHS organisation.

4.98 At the same time, Fig 4.3 shows that there are some variations between countries, which may reflect differences in the organisation of clinical care and in specialty boundaries, or in social factors. There is variation for example, between Sweden and Finland, with Finland having more integrated (average) fields. Further detailed investigation of these international similarities and differences could shed light on the relationship between gender and career destination, and on the impact of the increasing entry of women into medicine on all of the countries shown in Fig 4.3.

Gender patterns in specialty preferences, choice and destinations: some emerging conclusions

4.99 The examination of recent trends and current patterns in career preferences, choices and destinations in this chapter has shown the following, in relation to the increasing proportion of women entering the UK medical profession.

4.99.1 The increasing proportion (and number) of women is having an impact on almost all NHS specialties in terms of increased entry of female trainees. Almost all specialties had a majority of women among new trainees in 2007.

4.100 Nevertheless, there is still considerable variation between specialties in their gender ratio – and where data are available on trainees and younger trained doctors, these suggest that such variation will not disappear rapidly in the UK.

4.100.1 Data on young doctors’ early career preferences suggest that there are, currently, aggregate differences in female and male career intentions from an early stage of a medical career. Although early preferences are not always maintained, many changes appear to follow relatively consistent patterns. More longitudinal analysis of such changes, of career transitions and continuities over time would be valuable.

9 Personal communications from Professor O Aasland, Dr T Fedorova, Dr J Harden, Professor E Riska, Professor P Romanov.
4.101 As the percentage of women in UK medicine has risen over the last decade, the percentage pursuing careers in hospital specialties has also risen, as this sector has expanded relative to general practice. But general practice has remained a more frequent career preference and career destination for women compared to men. If general practice continues to be relatively unattractive to male UKMGs, there could be a shortfall of supply in the future.

4.102 Women continue to be less likely than men to express preferences for careers in the surgical specialties at an early stage in their careers. There are, however, an increasing number (and percentage) of women in these specialties, and in some fields where surgery or other invasive procedures are involved. The reverse trend in radiology suggests that technological innovation may be a factor affecting doctors’ career preferences.

4.103 There is considerable similarity between the UK (as represented by data from England) and other Western countries in the aggregate patterns of career destinations for men and women. Although the percentage of women in each specialty generally increases as the percentage of women in the profession overall increases, there are still marked inter-specialty variations. This suggests that the UK pattern is not wholly due to specific features of the NHS, the UK medical profession or particular features of social policy, but that there are consistencies in the organisation of different specialties and/or in their appeal to women across healthcare systems.

4.103.1 Women are generally an above-average percentage of doctors in primary care or in those specialties providing primary care in other countries, and in the care of women and children. The converse is true for the surgical specialties.

4.104 In general, the specialties which women have been most likely to express preferences for, and to enter, are located on the left-hand side of the matrix identified in Fig 4.1, with high predictability of working patterns, and particularly in the top left quadrant: high ‘social’ orientation. Men, on the other hand, are relatively strongly clustered in the bottom right of the matrix, in surgical specialties and in some acute medical specialties.

4.104.1 There are exceptions, obstetrics and gynaecology and paediatrics being fields with a high proportion of unpredictable work and a high proportion of women. Further investigation might reveal intra-specialty variations in specialisation and working arrangements in these fields.

4.105 If one of the most crucial factors determining women’s choices is the plan-ability or predictability of different forms of medical work, then it is possible that there will be increasing divergence in the gender composition of specialties at different ends of the predictable–uncertain dimension if there continue to be major inter-specialty differences along this dimension. As more women enter medicine, they may become more likely to enter specialties on the left-hand side of the matrix (Fig 4.1).

4.106 On the other hand, if moves to reorganise ways of working in many specialties (such as greater shift work) continue, then this might move some acute, unpredictable specialties towards the left-hand side of the matrix, making it more likely that women will enter them. One of the questions that the increase of women into medicine raises is the extent to which there are limits posed by the clinical workload and the need to optimise patient care to job redesign in different specialties. Another is the relative importance of work organisation in shaping career preferences and career destinations. This is addressed further in the next chapter.
5 Modes of working in medicine

Adapting the Oslerian ideal of professional commitment in medicine

5.1 Medical careers and modes of working in medicine have traditionally been organised in terms of a particular model of professional work and professional identity. At least for those who wished to reach the top of the profession, long, intensive, competitive training under the leadership of senior professionals was expected to take precedence over family and personal commitments. The training ladder comprised a series of short-term appointments, with uncertain, competitive transitions and, possibly, geographical relocation, between each step—at a time when many young men and women would normally also be starting families. Immersion in medical life through long hours spent providing emergency on-call cover was regarded as an important part of the ‘situated learning’ required for the development of professionalism (Lave and Wenger 1991). Training was followed by life-long, round-the-clock commitment to patients, as an autonomous practitioner, taking personal responsibility for professional judgements. The idealised expectation for doctors was described as follows by the 19th century physician, William Osler: ‘heavy as are your responsibilities to those nearest and dearest, they are outweighed by the responsibilities to yourself, to the profession and to the public’ (Verney 1957; cited in Dumelow et al 2000: 1440).

5.2 In practice, it has probably never been the case that all medical careers lived up to this ideal. For many years, very few doctors have been available for their patients 24 hours a day, seven days a week, and, historically, the professional elite (consultants) usually worked part time in any particular setting, although usually with very full-time professional commitment overall (Stevens 1966). But, arguably, the Oslerian image of uncircumscribed professional dedication remained at the centre of medical professionalism, so that departures from it, such as opting to work reduced hours overall, setting boundaries to one’s professional availability, perhaps because of family responsibilities, could be regarded as, ipso facto, evidence of a lack of professional commitment and dedication, as well as posing problems for patient care.

5.3 For many reasons, however, the appropriateness of this traditional understanding of professionalism for medicine (and for those who use its services) has recently come under increasing scrutiny (Levenson et al 2008; Royal College of Physicians 2005). Traditional working arrangements and career structures are coming into question in the light of current and possible future changes in characteristics of the supply of doctors and in the demand for medical work. On the supply side, there are at least two much discussed changes: the first being the increase in women entrants that is the focus of this project, and the second, the putative cohort and generational differences among doctors. On the demand side, there are the ongoing and proposed changes in the ways in which medical work is delivered described in Chapter 1, which have implications for doctors’ career paths and working patterns.

5.4 The increase in the proportion of women entering medicine has raised particular questions about the extent to which these women’s working patterns and career paths will diverge from
the assumed masculine norm, particularly through discontinuous working (or leaving the profession altogether), or through opting to work less than full time. Underlying such questions are generally one or both of two concerns (Dacre 2008; McKinstry 2008). The first is concern about the implications of divergence from the conventional career structure for gender equality. The second concern is about the possible implications of such divergence for medical productivity, workforce planning and service organisation and quality. If permanent exit, time out of the workforce or 'less than full-time' working are much greater, on average, for women than for men, the return on investment in training will, ceteris paribus, be lower for women, for the profession and the public, and, in a UK context, for the NHS. As the proportion of women in the profession increases, any such implications will be greater.

5.5 The second putative supply-side change relates to the attitudes and behaviours of new generations of doctors, female and/or male. It is often claimed that there are significant cohort or generational differences between today’s younger doctors (as members of so-called ‘Generations X and Y’ etc) and their predecessors in, for example, attitudes to professional work–life balance, experiences of early training, or in the more general social circumstances in which they are making their careers.¹ For example, general social trends of later marriage or partnership and later and fewer children (discussed below), increased house prices and student debts make the context for career decisions of female and male doctors qualifying in the 2000s rather different from those qualifying two or three decades earlier.

5.6 Gender and generational differences may interact. Indeed, the increase in women is, in itself, a possible cause of such generational differences. For example, the experiences and outlook of those young men and women who have entered medical school since the early 1990s, with women being the majority of medical students and of entrants to many other professions, may differ from those who entered in the early 1970s, when women were clearly a minority in medical schools, in a context of active feminist campaigning.² The increase in women students is likely to have affected men’s experience too. For example, chances of male doctors having spouses or partners who are also qualified in medicine (or another demanding profession) will be greater among more recent cohorts. So it is possible that, as these doctors’ careers develop in tandem with their family and other commitments and interests, their modes of working will be different from their predecessors.

5.7 One much discussed putative generational difference is that young doctors of both sexes might or will be less willing to work very long hours and/or more likely to work less than full time. For example, one finding from the the BMA's 1995 cohort survey has attracted much attention: namely, that 10 years after graduation, 94% of the women and 46% of the men

¹ The terms ‘Generation X’ and ‘Generation Y’ have no precise definition but are often used in marketing literature and journalism to refer to those born in (approximately) the 1960s and 1970s and in the 1980s and 1990s, whose experiences while growing up and attitudes and values may be rather different from those of previous generations, particularly the ‘baby boomers’ born in the 1940s and 1950s. Among the putative differences are growing up in a less economically and socially stable society and, especially for Generation Y, more costly higher education, less commitment to particular employers, higher expectations of rewarding work while seeking a good work–life balance.

² There might be parallels with the differences identified by historians between the 19th century pioneer generation of US medical women and their immediate successors (Drachman 1982).
responding said that they either were working part time or ‘may do so in the future’. This appeared to presage a radical reduction in the productivity of doctors of both sexes in the future.

5.8 Such survey findings need to be treated with great caution, as it is impossible to know whether the intention of ‘working part time in the future’ might mean winding down in the 2–3 years before, or even after, formal retirement (made easier by recent changes to pension legislation); reducing work duties for a few months to study for an exam or train for a sporting event; or spending 30 years working two days a week. (The proportions actually working less than full time at the time of this BMA survey were much lower: 52% of women and 8% of men, at a career stage when the proportion who were parents was increasing (British Medical Association 2005).)

5.8.1 Although the apparently large proportion of current cohorts of young doctors expressing the desire or intention to work part time may indicate cultural changes in the perception of part-time working or to what would count as a good work–life balance, there is little information about the views of earlier cohorts.

5.9 It would appear that recent cohorts of newly qualified doctors do not necessarily expect their medical careers to dominate their lifestyles. The BMA surveys of samples of 1995 and 2006 qualifiers found that only about 1 in 10 held this view on graduation. Just under 30% of the women in both cohorts, and 20–25% of the men, agreed with the statement that ‘the practice of medicine must be organised in a way which allows doctors to balance their careers with family and other interests’. At the same time, the clear majority of all respondents saw medicine as a ‘major commitment’, not as just a job (British Medical Association 2008a).

5.10 The working patterns and practices of current and future cohorts of doctors will also be shaped by external and demand-side changes which may make their experiences very different from those of their predecessors, most obviously the EWTD and reconfiguration of specialist services, and changes in consultant and GP contracts, as summarised in Chapter 1. There are two likely effects of all these changes.

5.10.1 First is an increase in the demand for medical modes of working, including those of established specialists, that are flexible from the employer’s perspective, to cover shifts in acute, inpatient specialties, to provide out-of-hours care in general practice, and generally to make doctors more substitutable for each other (NHS Employers 2007; Tooke 2007).3

5.10.2 Second is the likely decrease in average total NHS working hours (including any on-call commitments) for many full-time doctors, although the intensity of actual hours worked may be increasing, and their working hours may be differently arranged, for example into permanent shifts rather than office hours plus on-call rota hours.

5.10.2.1 Among new generations of junior doctors, many may never experience the very long working days and frequent on-call nights that were routine for most of their predecessors (although it would be premature to regard these as consigned permanently to the past). Such changes may have implications for the opportunities available for less than full-time work and training, and, indeed, for the very distinction between full-time and less than full-time working, and for what it might mean for doctors to seek a ‘good work–life balance’ (as well as for patient care).

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3 Some of the implications of this for career posts are discussed in Chapter 6.
5.10.2.2 If full-time hours shorten substantially, the demand for part-time working might reduce, even as the proportion of women in medicine increases.

5.11 There is little information about the implications of these changes, so the rest of this chapter focuses on the major supply-side development – the increase in the proportion of women in medicine. But it is important to set discussion of any impact of this increase on modes of working in the context of these other, concurrent changes affecting the medical workforce, and to recognise that calls for more ‘flexible’ ways of working in medicine may come from both doctors and their employers. Even if not brought about directly by the increase in women doctors, some of these ongoing or proposed changes in delivering NHS medical services may interact with the increase of women in medicine in complex ways.

5.12 It is therefore important that proposals for service redesign take account of the changing gender composition of the workforce (without losing sight of the primary aim of the best possible patient service). For example, centralising some specialist services at tertiary centres while relocating others to local ‘polyclinic’ facilities may have implications for staff’s practicable travel-to-work distances, which may present problems for doctors (and other staff) with extensive childcare or other caring responsibilities.

5.13 It is also important to set discussion about medical women’s working patterns into the broader social and recent historical context of women’s employment generally. So some brief points about trends in women’s working patterns and those of medical women over the last half of the 20th century precede the detailed discussion of the more recent data specifically relating to doctors.

Overview of women’s paid working patterns since the 1950s

5.14 Over the last 50 years in Britain, there have been some significant changes in the paid working patterns for women in general as well as in their educational qualifications. In the 1950s, most women worked full-time on leaving education, but marriage or motherhood generally led to leaving the labour market permanently (and marriage rates were rising in the 1950s). By the 1960s, part-time working for married women was increasingly promoted as a means of solving labour shortages for employers, while allowing women with caring responsibilities to earn and to return to the labour market after a break for full-time childrearing.

5.15 What developed was the so-called bimodal or M-shaped aggregate working pattern for women in the UK and the USA (but to a much lesser extent in most European countries), with high full-time participation in paid work before motherhood; sharply reduced participation during the main childrearing years; followed by a second peak as children reached secondary school age or left school, the second peak being much lower, and very often comprising part-time rather than full-time work.4

5.16 Since the 1960s, UK women’s overall participation rates (that is, the percentage of women of working age in paid employment or actively seeking it at a particular point in time) have increased. The average lifetime labour market participation for individual women has also

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4 The original concept of women’s ‘M-shaped’ working pattern clearly referred to aggregate cross-sectional patterns of working by age cohorts of women. The term is sometimes also used to describe individuals’ working patterns over time, which may be what produces the aggregate pattern, but the two phenomena are analytically distinct (Ward and Silverstone 1980).
increased, with women spending less time out of the labour market for childrearing, partly because of later and fewer childbirths, along with later marriage (or cohabitation) and higher divorce rates – changes which are sometimes seen as helping to bring about the decline in the sole male breadwinner model of the family (Crompton 1999). In recent decades, the UK has had one of the highest rates of women's participation in the labour force among affluent countries, including most of Europe. However, the UK female labour force has been much more likely to work less than full-time (including a high proportion of women working very few hours per week) than in most of these countries (Hakim 1996).

5.16.1 In spring 2008, 70% of all women in the UK aged 16–59 were in paid work, including 57% of those with children aged under 5, 71% of those with children aged 5 to 10, and 78% of those whose youngest child was aged 11 to 15 (and 73% of those without dependent children, that is those aged 15 or under).

5.16.2 However, 38% of women with dependent children worked part time compared to 22% of those without dependent children. The equivalent figures for part-time working for men were 4% and 7% (Office of National Statistics 2008).5

5.17 As women’s entry to higher education and the professions increased, particularly from the 1980s, along with the participation of mothers in the paid workforce generally, some analysts suggested that there was increasing polarisation in the female labour market between those (mainly young) women with good educational or professional qualifications who were often attempting to pursue careers on a mainly full-time, more or less continuous basis, even with young children, and those, particularly those without good qualifications, who tended to work discontinuously and part time (Hakim 1996). Some aspects of the polarisation thesis are controversial (see eg Crompton 1999), but it is the case that there are some differences as well as similarities between the aggregate working patterns of professionally qualified women (including doctors), and those of women as a whole, over the last half-century.

5.18 Several surveys of medical women in the 1950s and 1960s showed that almost all single medical women worked continuously and full time, but as marriage and motherhood rates increased (both events generally occurring soon after qualification), so the M-shaped or bimodal participation pattern was apparent when successive age groups of women doctors were compared. Many, but by no means all, medical mothers took career breaks and/or worked part time.

5.18.1 In the context of the very long working hours including on-call worked by many doctors, going 'part time' may have had special salience but still represented a substantial commitment for medical women.

5.19 But overall participation and retention were much higher than among women as a whole. The surveys indicated that, at any one time, 35–40% of respondents aged under 65 were working full time, and a further 35–40% were working part time, strikingly high proportions. At a time when less than half of all working age women were economically active, 75–80% of medical women were (Elston 1977; Jefferys and Elliott 1966).

5.20 Later cohort surveys of women doctors in the 1970s and 1980s showed higher levels of participation, again at a much higher level than for all women, and also shortening of career breaks for childrearing over time (Allen 1988; 1994; Day 1982; Elston 1980).

5.20.1 For example, Allen’s surveys of a sample of 1986 UK medical qualifiers five years after qualification, found 86% of women respondents working in medicine (67% full time and 19% part time) (Allen 1994: 272).

5.21 As this section has indicated, the idea that there were very large numbers of professionally inactive medical women in the first 40 years of the NHS is not supported by the evidence, although there may have been many who were ‘under-utilised’ relative to their male peers.

5.22 Between the 1950s and the 1980s, when the proportion of women among UK qualifying cohorts rose from just under 20% to over 40%, many surveys indicated that there were opportunities for part-time ‘working’ in medicine. What was much more difficult was having a part-time ‘career’ in medicine. From the 1960s onwards, there were some important small-scale, initially largely ad hoc initiatives to improve retention and access to part-time training and to assist ‘returners’ through creating supernumerary posts. The greater degree of fluidity in training pathways (compared to today) in the context of expanding hospital provision in the 1960s and 1970s undoubtedly meant there were opportunities for some women part-timers to achieve consultant posts (Day 1982).

5.23 For the most part, however, women who did not conform, for whatever reason, to the ‘more than full-time’ and continuous commitment traditionally demanded for professional success, were much more likely to be found ‘off the career ladder’ – as locums or assistants in general practice; in non-consultant posts in NHS hospitals; or in the almost entirely part-time posts in community health services – rather than as consultants or GP principals (Allen 1988; 1994; Day 1982; Ward et al 1981).

5.24 Since the 1980s, as the proportion of women entering UK medicine has risen further, this apparent polarisation between having a ‘career’ and ‘working’ in medicine, associated with going part time, has been increasingly questioned by professionals and policy-makers. Ad hoc provisions and small numbers of part-time posts may have served to accommodate those with unconventional work requirements when these were a very small minority, but not when those most likely to present such requests are the majority entering the profession.

5.25 At the same time, as will be described in more detail below, there are generational changes between today’s doctors and those of 20–30 years ago, in the extent and timing of the demand for flexible working and career breaks within medicine because of the major demographic changes that have taken place. The demand for part-time working as a consequence of childcare responsibilities is now more likely to come from doctors who have already made considerable progress and investment in specialist training, not from those whose careers were ‘interrupted’ by motherhood before they had really started.

5.26 As a result, less than full-time (LTFT) working is sometimes now promoted not only as an option for women ‘returners’, nor even as a compromise to cover the early years of motherhood, if the alternative is taking extended career breaks; but as a positive alternative to full-time working, which should not entail foregoing career advancement and professional success, possibly for all professionals (not just women) seeking to accommodate non-work commitments and interests alongside a genuine medical career. For example, a recent Medical Women’s Federation (MWF) report, Making part-time work (2008), presents qualitative research on doctors’ recent experience of working part time, and recommends policy measures to make part-time routes to professional success more practicable and more attractive.
5.27 Changes in medical women’s working patterns over time are, as for women in general, likely to be associated with demographic changes, although the causal relationships may be complex. Although recent data are limited, the family formation patterns of women doctors from the baby boomer generation, born in the late 1940s and early 1950s, were very different from those born 20 or 30 years later, particularly with respect to age (and prevalence) of marriage and first childbirth.

5.27.1 For example, the UK MCRG’s surveys of successive cohorts of UK qualifiers, from 1974 to 1999, have shown that, for both sexes, age at marriage and at birth of first child have increased between successive cohorts. Moreover, for all cohorts for which relevant data are available, these life events occur, on average, later (or are less likely to have occurred at all) for women than for men, and for doctors compared to the population as a whole.7

5.27.2 For example, among 1974 UKMGs, 41.9% of women (and 46.3% of men) were married in or before their first year after qualification. Among 1999 qualifiers, 29.1% of women and 25.4% of men were living with a spouse or partner in their first post-qualification year (Lambert et al 1998; UK Medical Careers Research Group 2001).

5.27.3 Among those women doctors who qualified at the age of 24 (mean age of qualification for all cohorts), 21% of the 1974 cohort but only 8% of the 1983 cohort had at least one child by the age of 27. By the age of 35, the relevant percentages were 74% for the 1974 cohort and 65% for the 1983 cohort (Lambert et al 1998).

5.27.4 The trend to postponed parenthood appears to have continued among more recent qualifiers. Of 1993 UK qualifiers, 74.7% of men and 78.2% of women had no children five years after qualification (1998), while among the 1999 cohort surveyed in 2005, 82.5% of men and 83.4% of women had no children (UK Medical Careers Research Group 2001; 2006).

5.27.5 For the 1995 qualifiers followed up by the BMA, it was not until the tenth post-qualification year that more than 50% of either sex were parents (British Medical Association 2005).

5.27.6 Similarly, the RCP’s 2007 census of SpRs/StRs in the physicianly specialties found that only 41.7% had children, and most of the children were aged under 6 (Federation of Royal College of Physicians 2008).8

5.28 In short, it appears that, whereas among those women (and men) who qualified in UK medicine before the mid-1970s, at least two-thirds had children within 5–6 years of qualification, this was true for less than a quarter of 1990s qualifiers. General social trends make it likely that this pattern of ‘deferred’ parenthood or, possibly, childlessness has continued among more recent

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6 No information about the family formation patterns of IMGs was retrieved for this project.
7 Not all the UK MCRG surveys have asked about marriage and parenthood. Allen’s comparison of samples of 1981 and 1986 qualifiers showed similar ‘postponement’ of marriage and childbirth, but numbers are small (Allen 1988, 1994).
8 Response rate to this first RCP Census of Registrars was only 30% of those contacted of this mobile population. Women respondents were slightly over-represented relative to their presence in the College’s database of higher trainees (47 to 45%).
cohorts. Even if childbirth and childrearing are not the only reasons for career breaks and part-time working, these demographic changes are likely to have pushed the peak demand for such departures from traditional male medical work patterns to later in a medical career, including into the career grade stage, for recent cohorts.

5.29 Given that, in 2007, 43% of all the women doctors working in the NHS in England were under the age of 35, it is quite possible that about half of these have yet to have any children, but that many will do choose to do so in their 30s or even 40s.9

5.30 In the next decade, as larger cohorts of medical students qualify, with, on current trends, at least 55–60% women qualifying, the proportion of UKMG doctors who are women of childbearing age will increase very significantly.

Modes of working in medicine for women and men: current evidence and future implications

5.31 Having set the context for considering the evidence on the current modes of working for medical women and men, the following sections present some of this evidence, along with comments about the adequacy of this evidence. The main focus is on the rates of retention, career breaks and the extent and pattern of reduced hours working among the increasing proportion of women in the profession, and their male peers. If it is the case that the average return on medical training is significantly less for women than for men, then this is an important consideration for future medical workforce planning – although present trends will not necessarily continue.

5.32 At the outset, however, it is important to recognise that it is difficult to assess the true scale of any differences in participation and working hours, because of the limitations of the data available either in routinely collected statistics or in completed analyses from cohort studies.

Permanent attrition and long-term retention

5.33 It is sometimes claimed that women who train in medicine are much less likely to stay in the profession than men, or that there is a substantial pool of ‘wasted’ women doctors who could and should be brought back into the profession.

5.34 Good data on the extent to which doctors are permanently lost from the profession are, perhaps inevitably, hard to obtain. Employers’ and professional bodies’ records are unlikely to distinguish reliably between those who leave their books but go to work elsewhere, and those who leave the profession permanently. Those who have left medical work are probably less likely to be traced and less likely to respond to cohort surveys than those who have remained (and, given the general gender bias in survey response rates, this may lead to understating of male exits). Whether ‘career breaks’ are permanent exits from the profession can often only be determined in retrospect.

5.35 What the limited data do suggest, however, is that, at least for the last 20–30 years, medicine has been a profession with similar (and very high long-term) retention rates, for men and women.

9 Calculated from NHS Information Centre (2008a; b) (locums excluded).
For example, follow-up of the 1981, 1986 and 1991 UK medical school entry cohorts found no evidence of gender differences in the likelihood of those who had ever registered with the GMC still being registered in 2008, which suggests some continued involvement with the profession, although not necessarily being in active practice.\(^\text{10}\)

The BMA’s longitudinal study of the 1995 graduating cohort found that, by the ninth year after qualification, a total of 3% of the sample reported that they had left medicine permanently, 4% of the women and 2% of the men (British Medical Association 2005).\(^\text{11}\)

5.36 Two potential causes of loss to the profession might be greater among men than women, although, hopefully, both are rare. Actuarial considerations predict that, among a given cohort, slightly more medical men than women will die before reaching retirement age (just over 1% of 1974 qualifiers were known to be dead by 1998, and 2% of the 1977 qualifiers in 2004 (Lambert \textit{et al} 2004; Taylor \textit{et al} 2008a)). Male doctors are, at present, somewhat more likely than females to be known to have health or other difficulties which might lead to exiting medicine on patient safety or disciplinary grounds (Firth-Cozens 2008).

5.37 Any gender differences in retirement patterns will become a more important consideration as the increasing proportion of women moves through successive age groups, although literature searching for this project found little information. Two large-scale surveys of GP principals in 1998 and 2001 did not find gender differences in retirement intentions (Sibbald \textit{et al} 2003). The UK MCRG’s 2004 survey of the 1977 UK graduating cohort (mostly aged in their early fifties) did not find any gender differences in the percentage intending to retire early. Men were significantly more likely than women to express the wish to reduce their hours as they approached retirement (but proportionately more women were already part time) (Taylor \textit{et al} 2008b).\(^\text{12}\)

5.38 Some recent cohort surveys have found permanent emigration of UK-trained doctors to be slightly higher among males than females, although some of this small ‘loss’ may be overseas nationals (who are mainly males) returning home after completing their studies (Davidson \textit{et al} 1998; Goldacre \textit{et al} 2001).

5.39 There is little published research on IMG flows in or out of the UK, but one recent study found that, among IMG doctors joining the NHS for the first time between 1993 and 2004, doctors’ gender did not influence the likelihood of retention in the NHS for two, three or four years after first joining, although doctors’ age, nationality and specialty did (Hann \textit{et al} 2008).\(^\text{13}\)

5.40 ‘Leavers’ from particular NHS posts are not necessarily permanent leavers from the NHS or the profession. A 1998 survey of GP principal ‘leavers’ (doctors who appeared on the NHS

\(^{10}\) Personal communication Professor IC McManus, September 2008. The introduction of compulsory revalidation has the potential to make GMC registration data more reliable indicators of professional activity.

\(^{11}\) Job titles reported by some of the leavers indicate that a medical qualification might still be relevant to their current employment, eg ‘medical marketing manager’, ‘medical advisor’ (British Medical Association 2005: 8).

\(^{12}\) No recent UK cohort studies have followed doctors beyond their early 50s.

\(^{13}\) This study also found that gender did not influence retention over these time periods for UKMGs either (most UKMG joiners being newly qualified doctors).
GPs database in 1996 but not in 1997), found that the vast majority of young leavers of both sexes were still working in medicine or intended to return in some capacity, but not usually as GP principals among younger women (Leese et al 2002; Young et al 2001; 2002). In 2005 and 2006, the ratio of GPs joiners to leavers in the NHS in England, was almost identical for women and men aged under 40 (Royal College of General Practitioners 2006).

5.41 To overcome response bias relating to those who have exited medicine, exhaustive tracing and capture-recapture analysis, using NHS employment and other databases, has been undertaken by the UK MCRG for several cohorts of UK qualifiers.

5.41.1 Among the 1974 cohort in 1998, and the 1977 cohort in 2004, that is roughly 25 years after they qualified, just over three-quarters of both cohorts were working in the NHS (although they had not necessarily done so continuously since qualification). For both cohorts, the percentage of women who were practising in the NHS at the time of these surveys was fractionally less than that of their male peers but ‘the similarities between men and women in this respect are much more striking than the differences’ (Taylor et al 2008a).

5.41.2 Of those who were not working in the NHS, the majority were still working in a medical capacity, with a slightly higher proportion of men than women working in medicine outside the NHS.

5.41.3 From all information available about the 1977 cohort, it was estimated that, at most, 3% of men and 8% of women in the original cohort (ie including non-respondents to the survey) were not employed in medicine in 2004. A similar picture of high long-term retention emerges from UK MCRG surveys of other cohorts (Goldacre et al 2001).

5.42 In summary, any claims that the increased proportion of women currently entering medicine will in itself lead to a marked increase in the rate of permanent ‘exit’ of trained doctors from the medical profession, or from the NHS, are not supported by available data about the recent past. Long-term retention rates of UK medical graduates from the 1970s have been very high, but this does not exclude discontinuous working in intervening years.

5.42.1 If the percentage of women leaving medicine ‘permanently’ were similar to the UK MCRG’s estimated 8% not working in medicine after 25 years (as for 1977 graduates), the loss for current qualifying cohorts, with 60% women, would be approximately 2% more doctors at this stage than for the 1977 cohort with c.35% women. Applying the BMA’s 1995 cohort loss rate of 4% of women within 10 years to a 60% female cohort (rather than 50% female) would produce an additional 0.4% wastage in the first 10 years post-qualification (British Medical Association 2005).

5.43 Of course, the experience of more recent cohorts might be different from those from the 1970s, 1980s and 1990s. Given that the general social trend is of increased participation in the paid workforce among professionally qualified women, the percentage leaving permanently is unlikely to be increasing, although the state of professional morale and overall competition will affect retention for both sexes. On the basis of the 1995 BMA cohort’s exit rate, should it transpire that more than about 4% of recently qualified UK women doctors, or more than about 2% of men, leave medicine permanently within 10 years of qualification, then this would be a significant new development for the profession.
Career breaks and discontinuous working

5.44 As suggested above, there is an important conceptual distinction, with policy implications, to be made between permanent exit from medicine and temporary career breaks. Actually making this distinction is not always easy, and data on career breaks in different surveys are not always easy to compare. Some surveys ask about work commitments at the time of survey, others about breaks over a set period, and the minimum period not working specified to count as a ‘break’ also varies between surveys. Longitudinal analyses of the length or timing of individuals’ career breaks are rare, so it is difficult to compare the contribution over time of female and male medical graduates.

5.45 Furthermore, several contextual factors are important to consider in interpreting trend data on career breaks (and/or breaks from working in the NHS).

5.45.1 First, not all career breaks are related to childbirth and childrearing. Cohort studies suggest that, at least in the recent past, many young doctors of both sexes took short breaks for travel or for postgraduate study, or worked in medicine overseas to gain experience (eg British Medical Association 1997; 1998). The structure of uncoordinated, short-term hospital posts in the early post-qualification years and the timing of some College membership examinations may have been conducive to this pattern. It is possible that implementation of new training curricula and MMC, especially with run-through training paths, may be reducing the level of ‘irregular’ working in these very early years.

5.45.2 Secondly, women doctors’ eligibility for statutory and NHS provision for maternity leave from a given post is very different today compared to 30 years ago, when the fixed-term status of hospital training posts, with frequent relocation often required, and the self-employed status of most GPs, made taking maternity leave from a specific post much more difficult than it is today (and it is not necessarily easy now). Today, doctors on (relatively short-term) temporary paid maternity leave from a particular post might not be recorded in some data.

5.46 Overall, the evidence from cohort studies retrieved for this study indicates that, after the early post-qualification years, at any particular point in time, more women are likely to be not working in medicine than men, and, where reasons for the break are given, maternity leave and childcare become more prominent over time. But, for the most part, these women report such breaks as temporary and/or women are shown in subsequent surveys to have returned to some form of medical activity.

5.47 There is evidence that, as the demographic changes would predict, career breaks for family reasons are occurring later in more recent cohorts.

5.47.1 For the 1977 UK medical school qualifiers, surveyed over 18 years post-qualification, the percentage of women not working in medicine increased steadily over the first 8 years to a peak of 10%, and then declined, stabilising at around 3.5% from year 12 (Davidson et al 1998).

5.47.2 The BMA 1995 cohort study is not precisely comparable, but its reports indicate that career breaks attributed to maternity and childcare were negligible in the first 5 years post-qualification, but thereafter began to increase. In the tenth year post-qualification, 23% of the women and 3% of men reported taking a break for childcare (with a few more doing so for health or study reasons) (British Medical Association 2006).
5.47.2.1 Given that, as noted earlier, only half of the sample had had children by this stage, it is likely that the percentage of the sample taking career breaks related to caring responsibilities will have continued to increase after 10 years. But, at a mean length of 9.5 months, time lost per break to date was relatively small, and may well be less on average per doctor than in earlier cohorts (although possibly applying to a larger proportion of doctors).

5.47.3 Both studies show that a significant proportion of those who took family-related career breaks returned to medicine, but that they often did so on a less than full-time basis. This may be a more significant ‘loss’ of aggregate UK medical womanpower than time spent out of medicine.

Part-time or less than full-time working

Methodological considerations

5.48 Information on working hours in the UK medical profession takes two main forms: that based on employment contracts, as in the NHS Medical and Dental Workforce Census data; and that obtained through questionnaires or time diaries completed by doctors themselves (which may include questions about contracts), as in the UK MCRG cohort surveys.

5.49 Contract-related information from the annual NHS medical and dental workforce censuses has generally been made available in two main forms (eg NHS IC 2008a, b, c):

5.49.1 There are statistics on numbers of doctors holding different types of contract: for example, for consultants. The categories currently used are full time, maximum part-time, part time, honorary and fixed term. These categories give no information on the actual hours contracted for within categories, and whether the increasing numbers of HCHS doctors on fixed-term contracts are on full- or part-time contracts is not currently indicated in the published statistics.

5.49.2 NHS workforce statistics on the total headcounts (actual numbers) of doctors in a category can also be compared to the full-time equivalent (FTE) totals of doctors in that category (that is numbers adjusted to take account of varying contractual commitments) at the census point. FTE counts have the advantage of taking account of reduced NHS commitments implicit in other types of contract, not just ‘part-time’ ones. The NHS participation rate (number of FTEs per 100 doctors in a given category) is generally regarded as a sensitive measure of aggregate medical input (not of productivity as such) in NHS workforce planning. It is, however, not sensitive to variations in the distribution of different levels of commitment or in the types of contracts within categories.

5.50 Statistics on different types of contract and NHS participation rates are both cross-sectional data, measuring contractual status at particular points in time. Neither take account of any changes over time in the overall contractual definition of full-time working – a potentially important consideration, given the general trend, discussed above, towards shorter contracted working hours, for example, under EWTD.

5.50.1 Interpretation of trends in work commitments based on contract statistics can be problematic because of changes in NHS contracts, which can affect doctors’ behaviour, and
(often related) changes in coding rules: for example, some consultants may have switched from maximum part-time to full-time contracts under the 2003 contract, with very little effect on their actual NHS input. Changes in GPs’ contracts in 1990, 1997 and 2003 make long-term comparisons of variations in contractual commitment difficult and little information is available since 2005 (Royal College of General Practitioners 2006).14

5.51 Information on LTFT based on NHS contracts gives no information about actual hours worked; about any additional work commitments held simultaneously; or about any reasons for working LTFT. Here information must be directly sought from doctors, with associated potential problems of recall and bias. For the most part, available information comes from the UK cohort surveys, so there is little information on IMGs. Moreover, most published cohort survey reports to date only consider cross-sectional snapshots, rather than examining the longitudinal patterns of individuals’ work commitments over time. (Although such data may be collected, it is hard to analyse.) The result is that little is known about the extent to which doctors move between part-time and full-time commitments (and the timing of such moves) over the course of their careers, and how this might have changed between cohorts.

5.52 Although the focus in the following sections is on reduced hours working, it is important to bear in mind that the total number of hours worked per day, per week or per year may not be the only significant time-related factor of importance for doctors or their employers. The timing of working hours during the day (office hours or unsocial), the predictability of variations in the work commitment, the extent of on-call but offsite work may all be significant, especially for those with domestic responsibilities (or who wish to combine medical work with other activities), as they will affect, for example, the need for and the costs of paid-for childcare.

Some overall findings on part-time working

5.53 In the following sections, some of the evidence relating to current patterns of part-time working among doctors is reviewed, with some consideration of possible future trends. The current overall picture is that a clear majority of all doctors working in the NHS in England, and the majority in all cohorts studied to date, are working full time. Of the approximately 120,000 doctors working in the NHS in England in 2007, about 15% were on part-time contracts and the estimated NHS participation rate overall was just under 95 per 100.15

5.54 However, these overall figures mask considerable variations by sector, age group and gender. For example, among men, about 8% of HCHS doctors and 12% of GPs are on part-time contracts, while among women, the equivalent approximate figures are 21% and 49%.

5.54.1 The estimated average NHS participation rates in 2007 were, for males and females respectively, 97 and 93 per 100 for HCHS medical staff, and 97 and 88 per 100 for GPs.

14 The increasing divergence of NHS doctors’ contracts following devolution makes comparison of trends in commitment between England, Scotland, Wales and Northern Ireland more difficult.

15 These figures are based on information supplied by NHS Information Centre, with GP figures estimated on the basis of 2005 data. ‘Part-time’ contracts do not include maximum full-time or honorary contracts. To avoid double counting, the small number of hospital practitioners and clinical assistants who are mainly GPs also working part time in hospitals were excluded, as were GP registrars and GP retainers (by definition, part time).
Two examples of reports on previous cohorts also illustrate the gender and sector differences.

On the basis of successive UK MCRG surveys of five cohorts of UK qualifiers between 1974 and 1993, Goldacre et al have estimated that, after taking account of time out of medicine and part-time working, the FTE equivalent available to the NHS for doctors, over 15 years post-qualifying, was 60% of every 100 women qualifiers and 80% of every 100 men (Goldacre et al 2001).

In the 1977 cohort surveyed in 2004 (ie most doctors in their early 50s), 11.4% of men and 50.1% of women respondents were working part time. Among those working in NHS hospitals in this survey, 10.9% of the men and 42.3% of the women worked part time, and, among those in general practice, 11.1% of men and 53.8% of women were part time. The estimated FTE equivalents were 73 per 100 for men and 56 per 100 women, giving an overall FTE rate of 67% (Taylor et al 2008a).

The mean percentage of females in the five cohorts in the first report was just under 40%, and 27% for the 1977 cohort. So, if these figures are applicable to recent and future cohorts, with 50–60% female qualifiers, the reduced input from women will be proportionately greater.

For cohorts with 40% women, the FTE equivalent for the whole cohort over 15 years, at the rates calculated above (Goldacre et al 2001), would be 73 per 100 doctors. For a cohort with 60% women, the FTE equivalent would be 68 per 100.

As discussed above, it is possible that the total time lost through career breaks may be less for today’s women medical graduates than in the past. It is less clear that this is likely to be true for part-time working, especially if increased support for part-time working becomes available, and it is no longer mainly promoted as a means of retaining doctors who might otherwise leave medicine temporarily or permanently. Facilitating part-time working may have the effect of encouraging those who might otherwise work full time to opt for reduced hours.

Given these figures, and much other evidence that, at present, as in the past 50 years, women doctors are more likely to work part time than men, overall and at given points in their careers, it seems likely that the increasing proportion of women entering the profession will lead to an overall decrease in the proportion of doctors working full time, and in the participation rate at any single point in time.

Much less clear is how working patterns of women doctors today or in the foreseeable future will compare with those of previous generations in terms of, for example, the level of activity, the duration of part-time working and the actual working arrangements. If the next generations of medical women have fewer children, or if full-time working hours reduce further, average time spent working LTFT over the course of a career, and any aggregate difference between men’s and women’s input over time, might decrease.

Part-time and flexible postgraduate training

Following four to six years of medical school, medical graduates in the UK have to pursue extended postgraduate training and further qualifications if they wish to be entered on one of the GMC’s specialist registers. The content and length of postgraduate training required depends on the field, being currently set by PMETB in association with the medical royal colleges and faculties.
5.61 Since 1969, there has been some, albeit limited, provision within the NHS for flexible training for doctors. Following the 2000 NHS plan, and the publication of the Improving working lives standards (Department of Health 2000a, b), NHS Employers declared the intention in principle to improve provision, including promoting flexible use of established posts (eg ‘slot-shares’) rather than supernumerary positions (NHS Employers 2005). Currently, all NHS medical trainees in the NHS have the right to ask to train ‘flexibly’, if they conform to the statutory conditions for such requests or have ‘well-founded’ reasons for doing so, with priority given to requests from those with young children and certain other family circumstances – although such requests do not have to be granted. To count for professional training purposes, ie towards CCT, clinical commitment of at least 50% FTE is required, as is gaining appropriate emergency experience, including overnight work if relevant for the particular specialty (COPMed 2008; Medical Women’s Federation 2008).

5.62 Earlier commentators have drawn attention to the difficulty of obtaining accurate current information about the numbers of women and men training flexibly (Goodyear and Lynch 2007). There are intrinsic difficulties (and costs) in keeping track of what is likely to be a fluctuating population. Consistent data could not be provided on flexible trainees by all the royal colleges and deaneries approached (although some have good information). Longitudinal data tracking the movement of trainees in and out of flexible training and their progress up the career ladder were not obtained. Thus it was not possible for this project to draw any conclusions about the proportion of trainees who might have at least one episode of part-time working during their training or how long any such episodes typically might be over the course of a postgraduate training career.

5.63 The cross-sectional data that are available indicate that, at any given time, part-time postgraduate trainees are a relatively small proportion of total trainees, particularly in the very early post-qualification years for women and men, and that this proportion has not increased in recent years, despite the increased entry of women into the medical training grades.

5.64 In 2007, NHS England HCHS workforce census reported 3.1% of all doctors, 5.7% of female doctors and 0.8% of male doctors in all the training and equivalent grades were on part-time contracts. The percentage of women in the registrar grades in NHS hospital and community services in England who were on part-time contracts declined slightly over the decade 1996 to 2006, from 19.1% to 15.1% in 2006. The percentage of males was 1.3% in 1996, and 1.2% in 2006, with the percentage of all ‘registrars’ decreasing from 7.2% to 6.7% over the same period.

16 For example, we were advised by NHS WRT that those changing commitments within the same post or doing reduced sessions in an established full-time post may be under-recorded.

17 2007 HCHS Detailed results, NHS Information Centre 2008b.

18 Data supplied by NHS Information Centre. 2007 figures for the registrar grades are not included as they are not comparable with earlier years following implementation of MMC. Moreover, doctors in the training and equivalent grade are increasingly recorded as being on ‘fixed-term’ contracts, and no distinction is made in the published headcounts between those on full-time and part-time fixed-term contracts, but the latter appear to be few in number. In 2007, the NHS participation rate in the (enlarged) registrar grade was 96.3%, and for males 99.8%.
5.64.2 However, the number of women ‘registrars’ on part-time contracts increased by 58.7% over the decade, from 704 to 1,117, with the number of men increasing from 94 to 129.

5.65 In 2006, the NHS participation rate for all women registrars was 93.8 FTEs per 100 doctors, and 98.7% for men, and, with 40% of those in the grade being women, 96.7% for all registrars. Among registrars on part-time contracts only, the participation rate was 63.9 for women, and 51.1 for the very few men.

5.65.1 These rates imply that, overall, 100 women in the registrar grade contribute the contractual equivalent of 95 men, with the average contract for part-time women being almost two-thirds full time.

5.65.2 So, the difference in contracted input between the sexes at registrar level appears to be fairly small at any given time. Assuming participation rates stayed the same, a change from 40% women to 60% women would reduce the total NHS participation rate among doctors in the (pre-MMC) registrar grade by 1 FTE per 100.

5.66 Not all of these NHS ‘registrars’, however, will have been in true training rather than service-only posts, and the increasing numbers of these may explain some of the relative decline in part-time ‘registrars’ since 1996. However, where data are available on flexible working among ‘true’ trainees, these also indicate that this remains a relatively rare option at any point in time, and the proportion has not been increasing.

5.66.1 Information on flexible trainees has been collected from UK deaneries by COPMeD since 1995. The number of flexible SpRs, and the proportion they comprised of all SpRs in England, rose from 389 (3.5%) to 1,067 (8.4%) in 2001, with substantial variation between regions and between specialties. Subsequently the numbers stabilised, or even fell in some areas (Gray et al 2004).

5.66.2 The 2005/6 national (UK) deanery survey reported that flexible trainees comprised only 5.0% of all trainees in 2005/6, with almost three-quarters of this small group being in the SpR grade (768 doctors). Of all these flexible trainees, 95.2% were female. This survey also indicated a slight fall in the total number of flexible trainees between 2004/05 and 2005/6, from 2,413 to 2,143. So the percentage share of flexible workers among all trainees was at about the same level as in 1995, but, overall, there were three times as many flexible trainees in 2005/6 than in 1995. But the 2005/6 numbers were below those in 2001 (COPMed 2008).

5.67 This relatively small proportion of flexible trainees in cross-sectional data is confirmed by the 2007 PMETB survey of all trainees (Postgraduate Medical Education and Training Board 2008b). This found that 4.2% (7.7% of all women and 0.7% of all men) were currently flexible trainees. In addition, a further 9.3% of women and 1.4% of men were expecting to start flexible training ‘soon’ or were waiting for either a post or funding (but had presumably had their applications approved in principle).

5.68 Flexible trainees are not evenly distributed between specialties, partly reflecting the different gender choices discussed in Chapter 4. Not surprisingly, the general medicine group has the largest share of all flexible SpRs followed by paediatrics, as these are the specialty groups with the most women SpRs. At SHO level, general practice and psychiatry together accounted for 45% of the 508 flexible SHO trainees reported in the 2005/6 deanery survey (COPMed 2008).
The specialties with the highest percentages of trainees (male and female) working flexibly were, according to the 2007 PMETB survey, public health (34.7%) although total numbers are small; radiology (13.5%); pathology (12.9%); general practice (11.6%); psychiatry (9.9%); and anaesthetics (8.7%). The nine specialties in the surgical group had the lowest percentage of flexible trainees (2.0%). The difference between specialties remained significant after accounting for differences in gender mix, implying women in surgical specialties were less likely to train flexibly than women in other specialties (PMETB 2008a: Section 8).

UK MCRG cohort surveys have reported that, at least in the recent past, trainees see differences between specialties in the availability of part-time training. For example, among 1996 graduates surveyed in 2002, those in general practice were more positive than those in hospital medicine about the scope for flexible training. Among the former, only 19%, compared with 41% of the latter, agreed with the statement, ‘There are few opportunities to follow flexible and part-time postgraduate training in my specialty.’ There were also significant differences between hospital specialties, with 59% of general surgeons and 48% of those training in A&E, but only 17% of psychiatrists and 20% of radiologists, agreeing with the statement (Lambert and Goldacre 2005).

There is relatively little information at present about the impact of periods of flexible training on career progress and on subsequent working patterns, for example on whether those who do some training on a part-time basis are subsequently more likely to work part time in career grades than those who do not, or how much flexible training typically delays achievement of CCT.

A COPMeD survey of UK deaneries (excluding Wales) to identify the destinations of all those leaving flexible training schemes between 1 September 1999 and 31 August 2001, found that the majority (52.5%) left to take up consultant posts, of which 24.2% were known to be part-time posts (with contract not known for 44.6%), 7.6% went into NCCG posts, 10.6% returned to full-time training, and almost all the remainder were continuing training in some form (eg following inter-deanery transfer) (Gray et al 2004).

A postal survey was conducted in 2004 of all flexible SpRs and a sample (matched by hospital specialty) of full-time SpRs leaving training schemes in three deaneries between April 1996 and March 2004. Of the flexible trainees, almost half had trained LTFT for less than three years and less than a fifth for more than seven years. Just over 90% of both flexible and full-time SpRs had achieved CCT, with 81% and 77% being in consultant posts. However, 52% of the flexible trainees and only 3% of the full-timers had moved into part-time consultant posts, and 40% of those who were part-time consultants envisaged working part time for 15 years or more. This was a small survey, with a relatively low response rate (56%), but it suggests that flexible training is clearly associated with subsequent flexible working (Gray et al. 2005).

One indicator of delay as a result of flexible training (or possibly maternity breaks) found is that, in 2005, the average length of training for female trainees in paediatrics in England

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19 The highest percentages of part-timers among female NHS ‘registrars’ in England in 2006, were in public health (45.2%), palliative medicine (30.9%), dermatology (23.8%), paediatrics (21.4%), obstetrics & gynaecology (19.2%) and clinical oncology (19.0%). Among the surgical group, overall 7.9% of female ‘registrars’ were on part-time contracts, with ophthalmology having the highest at 9.6% (NHS Information Centre).
was estimated to be 7.2 months longer than for males (Royal College of Paediatrics and Child Health 2006).

5.71.4 Flexible training is not the only reason why training might take longer than the minimum. Among the 1996 graduate cohort who were in NHS SpR posts when surveyed in 2002, two-thirds expected to take longer than the minimum time to obtain their CCSTs (59% of men and 74% of women), with 23% expecting to take up to one year longer, 25% up to two years longer and 15% more than two years longer. The most common reason given for expecting to take longer was to do research (50%); gaining additional experience or working abroad was cited by 31%, followed by having a family or training flexibly (27%) (Lambert and Goldacre 2005).

5.72 There is also little information on the circumstances faced by or the alternatives available to those seeking flexible training. In one survey of flexible trainees in medical specialties, two-thirds of respondents said that they would have chosen either a career break or worked full time, had they not been able to train part time. But, as this group had, by definition, not had to choose between these alternatives, no clear conclusions could be drawn (Federation of Royal Colleges of Physicians 2001). These are all areas on which quantitative research based on longitudinal data on entire cohorts and qualitative research could be very helpful.

5.73 The extent to which the current relatively low uptake of flexible training among both women and men is due to genuine lack of demand rather than to difficulties in arranging flexible working is not clear. There are many anecdotal reports of difficulties in arranging posts or of obtaining appropriate experience by those who did seek flexible training, and of problems in relation to funding, and of variations in policy between deaneries (Goodyear and Lynch 2007; Medical Women’s Federation 2008).

5.73.1 A particular problem has been the implementation of the 2001 pay deal for trainee doctors, which had the effect of making some flexible trainees with on-call commitments expensive for trusts to employ, although some additional funds were made available (Gray et al 2004).

5.74 There is evidence of unmet demand in that the PMETB 2007 survey found that, among full-time trainees, 12.6% of women and 5.9% of men stated that they would like to train flexibly, but ‘were not eligible’ to do so (although how many of this group had actually tested their eligibility with their deaneries was not established) (Postgraduate Medical Education and Training Board 2008a). Trainees in this ‘ineligible’ group were much more likely to report considering giving up medicine frequently than either those training full-time or those currently training ‘flexibly’ (although they had clearly not actually done so at the time of the survey).

5.75 This same survey, however, found that the vast majority of trainees, 92.0% of males and 70.4% of females did not wish to train flexibly, at least at the time of the survey (Postgraduate Medical Education and Training Board 2008a). If, as seems likely, childcare responsibilities are currently the main reason for trainees seeking to work flexibly, it should be recalled from the

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20 Only five formal applications were reported to have been rejected in the 2005/6 deanery surgery, although it was recognised that there were a larger number of informal enquiries that did not result in a formal application (COPMed 2007). Anecdotal reports suggest that some deaneries have been more likely than others to accept requests from those who do not meet the stipulated conditions for Priority 1 entitlement.
earlier discussion of the age structure of the medical workforce and of demographic change, that
the proportion of current trainees with children is likely to be relatively small: less than 20%
within the first six years post-qualification, if more recent cohorts are similar to 1999 UK
qualifiers (UK Medical Careers Research Group 2001; 2006).

5.76 Early parenthood in a medical career is also associated with early moves into general
practice for both sexes, which may also reduce overall demand for flexible working in hospital-
based specialties (although whether parenthood precipitates or follows entering general practice
is less clear). For example, among the doctors in the BMA’s 1995 cohort study who were still
working in hospitals in the tenth year after qualifying, 57.6% of the women and 47.1% of the
men did not have any children at that stage of their careers, compared to only 32.1% of the
women and 26.9% of the men in general practice.21

5.76.1 Not only is GP training currently shorter (although this may change (Tooke 2007)), but
also, in any given location, there are likely to be more opportunities available for GP practice
training, and hence for flexible training and working.

5.77 Thus, the evidence suggests that, currently, those training in hospital specialties are more
likely to have their children later than those entering general practice, which may mean not until
specialist training is well advanced (or completed). As a result, the proportion of flexible trainees
among those actually achieving CCST/CCT may be rather higher than the overall figures indicate.
For example, 23% (136 of the 591) women who gained CCT/CCST in anaesthetics between 2002
and 2006, were recorded as flexible trainees at this point.22 Although postponing motherhood
might have many advantages for remaining on the career track, it may be difficult for slot-share
partners or appropriate service cover to be organised within practicable travel-to-work areas for
advanced trainees in highly specialised fields, or specialties where there are very few women
trainees and an acute workload.

5.77.1 If this is so, it could be one factor in the low percentage of flexible trainees among women
training in surgery. The total number of women trainees has been so small as to make requesting
flexible training exceptional, and finding a suitable slot-share partner very difficult. Only in
general surgery, and trauma and orthopaedics, were there more than 100 women trainees in
total in the registrar and equivalent grades in England in 2006 (NHS Information Centre 2007a).
Reduced sessions in full-time slots are likely to be the only practical option for flexible specialist
training in most surgical fields, with implications for maintaining service cover as well as for
arranging appropriate clinical experience. It may also be the case, however, that relatively few
women surgical trainees wish to extend the already long surgical training, or have children or
other commitments that may make flexible training desirable. But it is also clear that some do,
at least for part of their training.

5.77.2 More information about the compatibility of flexible training provisions, and run-
through training if it is retained under MMC, will be required in the future. Shorter, coordinated
training paths may make it easier for more doctors to achieve CCT before starting a family, but
could make it more difficult for those requesting flexibility at a late stage in their training.

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21 Personal communication, Tania Fisher, BMA Health Policy and Economic Research Unit.
22 Information from Royal College of Anaesthetists.
5.78 There are particular concerns about the availability and practicality of flexible clinical training for those pursuing careers in academic medicine, which have been recently reviewed by the Medical Schools Council (2007) and the Women in Academic Medicine Working Party (2008). This sector is discussed further in Chapter 6.

5.79 To summarise, available cross-sectional data suggest that, at present, the great majority of trainee doctors in the NHS, male and female, are not training flexibly, and when surveyed do not report actively planning to do so, although rather more women than men are recorded as doing both. Because of the lack of longitudinal data analysis, it was not generally possible to determine the proportion of trainees who have at least one period of part-time training before achieving CCT, or how long such periods typically are.

5.80 Childcare is the most frequently reported reason for flexible training. The general social trend to later marriage/partnership formation and motherhood, compared to three decades ago, may be a factor contributing to relatively low uptake rates. Among the cohorts of women doctors qualifying since the mid-1990s, it seems likely that many of those training for hospital-based specialist careers do not have children until they have completed at least a substantial proportion, or even all, of their postgraduate training. Qualitative research has found both advice recommending delay and complaints about its being a forced choice (Medical Women’s Federation 2008).

5.80.1 However, the increasing numbers of graduate entrants to medicine might bring in more trainee doctors who already have children, or who are very reluctant to postpone parenthood for many years. As doctors, they will be aware of the problems that delaying starting a family can bring and their specialty choice may be particularly influenced by perceived availability of flexible training.

5.81 Organisational and funding constraints within the NHS in recent years may have also served to reduce uptake of part-time training. Uptake also varies between specialties, to a greater extent than gender mix alone would predict, and is particularly low in the surgical specialties.

5.82 Over the next decade, the numbers seeking flexible training are very likely to increase as the increasing numbers of women entering medical school since 2000 move through the postgraduate training years, and if more men wish to take this option; particularly if the training for general practice is lengthened. The percentage of all trainees doing so might also increase – although the immediate past suggests that this may not happen. Further shortening of the typical time required to achieve CCT might dampen demand further, if family formation patterns remain the same.

5.83 Even if the demand were to remain relatively low as a percentage of all trainees, it is important that opportunities for flexible training are available, and that the experience of those who seek to train flexibly is a positive one. Although there are many reports of problems arranging posts, and difficulties experienced in post (see Medical Women’s Federation 2008), it is worth noting that there are also many reports of good experiences. The 2007 PMETB survey found that the majority of those actually in flexible training posts rated the quality of training as similar to that of their full-time peers and, like most of their full-time peers, they very rarely considered giving up medicine (Postgraduate Medical Education and Training Board 2008a). But without more longitudinal evidence on the timing and length of individuals’ episodes of flexible training, it is not clear how far there is a distinct subgroup of flexible trainees, rather than trainees, some of whom complete part of their training part time.
Part-time career grade posts in hospital medicine

5.84 Although the vast majority of career grade doctors in the NHS hospital and community services in England are currently on full-time contracts, a higher proportion overall are on part-time contracts than among trainees, and a higher proportion of women than men in career grades are on part-time contracts.

5.84.1 In 2007, 14.1% of all NHS consultants in England were on part-time contracts, 30.1% of women consultants and 7.7% of men.23

5.84.2 Among staff and associate specialist grades (SASGs), 44.8% of women but only 7.0% of men were on part-time contracts in 2007. How far this high level of part-time working reflects difficulties experienced by women in obtaining part-time consultant posts, rather than specific opting for SASG level work among those who seek reduced commitments is not known.

5.85 Figure 5.1 shows the percentage of all consultants, all female consultants and all male consultants on part-time contracts from 1996 to 2007. The percentage for all female and for all consultants was higher in 2007 than in 1996 (30.1% compared to 23.8% and 14% compared to 11% respectively), although the percentage of male consultants on part-time contracts was very slightly lower (7.7% compared to 8.3%).

![Graph showing percentage on part-time contracts by gender from 1996 to 2007](image)

Fig 5.1 NHS consultants: percentage on part-time contracts by gender, 1996–2007.
Source HCHS England (Unpublished data from HCHS Census supplied by NHS Information Centre).

5.86 The fall in the percentage of part-timers between 2003 and 2005 for all three categories might reflect the implementation of the new consultant contract, and/or the impact of the large number of new consultant appointments in some specialties in this period. However, the recorded

23 All figures in this section are from NHS Information Centre (2008a), or provided by the IC unless otherwise indicated. Maximum part-time and honorary contract holders are not included here as ‘part-time’ consultants, nor are the small but growing number of consultants on fixed-term contracts, some of whom are part time.
downturn appears to have reversed subsequently, and the increasing numbers of women consultants, with their greater likelihood of being on part-time contracts, has led to a small increase in the percentage of all consultants who were on part-time contracts over the last decade.

5.86.1 The number of women consultants on part-time contracts in 1996 was 936 and, in 2007, 2,746, an increase of 193%, while the number of men on part-time contracts increased from 1,316 to 1,823 (a 38% increase).

5.86.2 In total, there were 2,314 more part-time consultants in the NHS in England in 2007 than in 1996, a rise of 103%. Just over 60% of all the part-time consultants in 2007 were female.

5.87 Turning to trends in NHS participation rates, the rate for all NHS consultants in England has risen very slightly between 1992 and 2007, from just over 91 to 93.5 doctors per 100, which may be the result of the contract changes. Taking male consultants alone, it is clear that they are not all contracted to give the NHS 100% of their services: their NHS participation rates ranged from 91.8 to 95.0 per 100 between 1992 and 2007. The NHS participation rate of female consultants is consistently lower: ranging from 88.0 per 100 to 89.9 per 100 over the same period: that is, every 100 female consultants will, on average, provide about 6 FTEs less per year than 100 male consultants, although in practice there will be considerable variation between specialties. (Some of the reduced NHS participation for both males and females will reflect academic work, private practice and other professional commitments.)

5.88 The NHS participation rates for all female consultants on part-time contracts have averaged 70.8 FTEs per 100 between 2004 and 2007, equivalent to an average commitment of about 3.5 days or 7 four-hour programmed activities (PAs) per week. The equivalent figure for male consultants on part-time contracts was 67.3.

5.89 Comparing participation rates for women consultants aged under 45 and those aged 45 and over between 1992 and 2007 does not show any ‘return to full-time work’ effect among older women consultants, or possibly any such effect is counterbalanced by some older female consultants opting for part-time work for professional or personal reasons. Younger male consultants have had consistently higher participation rates than their older colleagues, probably reflecting lesser involvement in other professional activities, including academic work, private practice, or the ‘winding down’ of older consultants. The difference between older and younger male doctors has increased over the decade, perhaps reflecting contract changes.

5.90 One consistent feature over the last decade is that IMG consultants of both sexes, particularly those who qualified outside Europe, have slightly higher NHS participation rates than UKMG consultants. Whether this is the result of differences in social and personal circumstances or specialty worked in, or the product of lower involvement of IMG consultants in clinical academia, private practice or in professional activities outside the NHS was not examined in this project.

5.90.1 Female UK-qualified consultants have had the lowest NHS participation rates, and males qualified outside Europe the highest over the whole period. Among consultants aged under 45, the divergence between these two groups has increased over time, as shown in Figure 5.2.

5.90.2 In 2007, for every 100 UK-qualified women consultants aged under 45, there were 10 less FTEs contracted than for every 100 ex-EEA qualified males, but only 4 less than for every 100 UK-qualified men. In recent years, the NHS participation rate ‘gap’ between younger women
consultants qualifying outside Europe and in the UK has widened slightly, and the former have had slightly higher ‘productivity’ scores than younger UK-qualified males.

5.90.3 One implication of this is that, overall, a reduction in the appointment of doctors qualifying outside Europe as NHS consultants may lead to lower mean NHS participation rates among consultants in the future, or to a need for more consultants to provide the same level of contracted service input. The impact on overall participation rates of any increase in UKMG female consultants working LTFT will also be greater.

Part-time working in different hospital and community health specialties

5.91 There is variation between specialties in the proportion of career grade doctors who are contracted to work part time, and, not surprisingly, this is broadly related to the proportion of women in each specialty. Figure 5.3 shows that, in the four specialties with the highest percentage of women consultants, more than 40% of these consultants are on part-time contracts.

5.91.1 However, at least 1 in 5 female consultants are on part-time contracts in all the fields shown except four: obstetrics and gynaecology, anaesthetics, cardiology, and the surgical group, once ophthalmology is excluded (numbers being small in these last two fields). All four of these fields have, potentially, a substantial proportion of emergency inpatient work.

5.91.2 Figure 5.3 suggests that for most female consultants currently on part-time contracts, this is not a way of managing the demands posed by acute care specialties so much as the outcome of previous decisions to work in specialties where the workload was relatively predictable, as indicated in the matrix discussed in Chapter 4.

5.91.2.1 This project did not obtain any systematic information on the routes into part-time consultant (or SASG) posts. Among a sample of 40 purposively selected female consultants interviewed for the recent MWF report, one-third had been appointed to a post advertised as part
time, and the remainder had negotiated their part-time status on a personal basis on appointment or had switched from full-time incumbency of the same post (Medical Women’s Federation 2008).

5.92 The NHS does not currently publish information about consultants’ contracted programmed activities (PAs) under the 2003 contract. Several of the royal colleges do collect self-reported data on this. Where such information is available, it shows that women are more likely than men to be contracted to work less than 10 PAs (ie part time). Furthermore, there is some indication that, among full-timers, ie those contracted for 10 or more PAs, women have, on average, fewer contracted PAs, and fewer contracted on-call PAs. This may be partly a function of different gender balances in the different specialties and subspecialties, within the relatively broad fields within the remit of most royal colleges. 24 Two examples will suffice.

Among paediatric consultants contracted for less than 10 PAs 79% are female, as are 37% of those with 10–12 contracted PAs, but only 31% of those with more than 12 contracted PAs. Those in community paediatrics tend to have fewer contracted PAs (and ‘the proportion of women [consultants] is higher the greater the community component of the job’, with 81% of those consultants working 100% in the community being women, compared to 39% of 100% general paediatricians) (Royal College of Paediatrics and Child Health 2006: 34).

24 Response rates to some of these census questions are relatively low, so some caution needs to be exercised in drawing the policy implications of the data.
Gender differences in mean PAs were less marked among consultant physicians. In 2006, the mean contracted PAs for full-time consultant physicians in England was reported as 11.4 for men and 11.1 for women, with consultants generally claiming to work more than their contracted hours (12.2 PAs for full-time men and 11.83 for full-time women). Perhaps more significantly, the majority of all male consultants (54%) were contracted to be on-call for unselected emergencies, whereas only 28% of all female consultant physicians were, presumably reflecting the differences in specialty distribution by gender within the medical group.\textsuperscript{25}

Part-time career posts in general practice

5.93 Part-time working is, statistically, more common in general practice than in HCHS medical work. The latest figures available to this project (for 2005, because of data comparability problems) indicate that virtually half, 49%, of all women GP principals and 10% of all male GPs in England were on part-time contracts (Royal College of General Practitioners 2006).

5.94 The trend in the participation rate for all GP practitioners in England was downwards from 1996 to 2005, from 94.5 to 89.3 per 100 (although changes in the coding of LTFT contracts need to be borne in mind). This fall mainly reflects the increased entry of part-time women into general practice but the participation rate for both male and female GPs fell slightly over the decade, from 97.2 to 95.4 per 100 for men, and from 85.8 to 80.4 per 100 for women.\textsuperscript{26}

5.95 In general practice, therefore, there is some evidence of a small increase in the proportion of male doctors working part time. Of the 29% of the BMA’s 1995 cohort sample who were working in general practice in 2004, 21% of the men and 76% of the women were working part time (Jones and Fisher 2006). However, the self-reported mean working hours of both part-time and full-time women GPs are less than those of their male counterparts; 4.9 and 6.4 hours respectively according to one recent survey. The same study found that male GPs on part-time contracts are more likely than females to work in more than one practice (Gravelle and Hole 2007).

5.95.1 A survey of Scottish GPs found that male GP principals claimed to spend, on average, 18% more time providing patient services activities, and 50% more time on other professional activities, such as training and practice management (McKinstry \textit{et al} 2005). Some, but not all, of these differences were because women GPs were less likely to be partners in their practices, being over-represented among sessionally paid assistants or locums (see also Allen 1992).

5.96 In 2000, the Royal College of General Practitioners estimated that, in order to offset the reduced hours and career breaks of women as their presence in general practice increased, 150 GP registrars per annum would be needed to replace every 100 retiring doctors (Royal College of General Practitioners 2000). Some have suggested that this figure is now too low because of the further increase of women in general practice (McKinstry \textit{et al} 2005). However, it is also possible that the relinquishing of responsibility for out-of-hours care by many GP practices in England may have reduced the gender difference in hours worked, particularly among full-time GPs.

\textsuperscript{25}Information supplied by the Medical Workforce Unit, Royal College of Physicians.
\textsuperscript{26}Calculated from information supplied by the NHS IC. These figures exclude GP registrars and GP retainers (all part-time by definition). The number of retainers has not increased over the past decade, but it may be that the GP flexible career scheme, introduced in 2002, is proving to be an alternative for those who wish to work between 2 and 5 sessions a week (Hastie and Viney 2008).
GPs (and may alter the implications of choosing between full-time and part-time commitment in general practice in the future).

5.97 A further recent development, however, over the last decade in English general practice is an increase in salaried doctors. Although the vast majority of GPs are still self-employed contractors, by 2005, some 12% of GPs in England were salaried, following the introduction of greater scope for flexibility in terms and conditions of general practice work from 1997, with further changes from 2004 (Ding et al 2008). The main aim behind the policy of increasing salaried provision was to address geographical inequalities in access to primary care, and recruitment and retention problems in general, not specifically related to women. Research had indicated that many young doctors of both sexes were unenthusiastic about the constraints and demanding out-of-hours and management workload associated with the GP principal role, and the expectation of entering into equity partnerships, which, for example, made geographical mobility problematic (eg Baker et al 2000; Leese et al 2002; Young and Leese 1999; Young et al 2001).

5.98 Early entrants into pilot personal medical services (PMS) salaried schemes tended to be male (Williams et al 2001). Subsequently, however, salaried GPs have become predominantly female (71% in 2005) and predominantly part time (64% in 2005) (Ding et al 2008). In itself, this is not surprising. Most new entrants to general practice in these years were women and, moreover, younger women who are particularly likely to have young children. The new provisions for salaried positions may have provided some young women (and some men) with more attractive flexible options for general practice work than the sessional non-principal positions which, prior to 1997, were the main alternative to partnership. Whether these options will be preferred over the long term cannot yet be determined. But, if they are, this may have profound long-term implications for the future organisation of NHS general practice. This is discussed further in Chapter 6.

**Trends in male doctors’ working patterns**

5.99 As already noted, it is often claimed that working part time is becoming, or will become, a more popular option for male doctors. Surveys indicate that a significant and possibly growing proportion of male doctors report the desire or intention to work reduced hours at some point in their career (eg British Medical Association 2006). The evidence available to this project, however, suggests that, currently, relatively few male doctors actually take this option and, of those who do, many may combine one part-time NHS appointment with other professional commitments, or be working part time for health reasons. Some of this evidence has already been presented, but is summarised below.

5.100 To date, working part time in training or equivalent posts appears to be rare among male doctors in the NHS in England. In 2007, only 185 (0.8%) of all the males in training and equivalent grades were on part-time contracts, compared to 1,233 females. Only 8% of male respondents to the PMETB 2007 trainee survey said that they wished to train flexibly, and only 0.7% were actually doing so at the time of the survey (Postgraduate Medical Education and Training Board 2008a).27

5.101 Cross-sectional data on the NHS HCHS in England show that, in 2007, 4,037 male doctors (7.3% of all males) were reported as being on part-time contracts, compared to 6,671 female doctors (18.9% of all females). Of male consultants, 7.7% were on part-time contracts,

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27 As before, the data in this section is from the NHS IC, eg NHS Information Centre (2008b).
as were 7.0% of those in SASG posts and 0.8% of male doctors in the training and equivalent grades (compared to 30.1%, 44.8% and 5.7% respectively for females).

5.102 The distribution of part-time contracted hospital doctors by grade was different for men and women in 2007. In particular, 38.6% of all male ‘part-timers’ compared to 17.3% of all female ‘part-timers’ were hospital practitioners or clinical assistants, posts which are normally part-time and which doctors combine with other medical work, mainly in general practice. If these doctors are excluded, the proportion of consultants among all HCHS part-timers was 73.0% for men and 48.4% for women.

5.103 Omitting some very small specialties, those with the highest percentage of male consultants on part-time contracts in 2007 were plastic surgery (18%), public health (17%), dermatology (16%) and ophthalmology (16%) – in plastic surgery the percentage of part-timers was higher among males than among females.

5.104 The proportion of male NHS hospital consultants who are on part-time contracts has not increased over the last decade. But it does appear to have increased in NHS general practice over the same period, although the proportion remains very much lower than for women. In some cases, this may be older male doctors reducing commitments or taking up new activities.

5.104.1 There is, however, some qualitative research evidence that salaried working (with or without reduced hours) is a positive lifestyle or work–life balance related choice for some young men entering salaried general practice (Jones and Fisher 2006). As noted earlier, the BMA 1995 cohort survey found that young male doctors opting for general practice were more likely to have children early than their hospital-based peers (British Medical Association 2005). So it is possible that some men’s move to part-time general practice is a way of adjusting to parenthood responsibilities in dual career relationships. At present, however, this appears to be only on a very small scale. And there are also anecdotal allegations of exploitation and poor morale among male salaried doctors in the face of increasing competition for jobs and, particularly, for partnerships.28

### Beyond working hours: gender variations in styles of practice and workload

5.105 It is sometimes claimed that women bring different qualities and abilities to medical practice, such as more empathy or better communication skills, qualitative benefits which might offset any alleged lower average quantitative input (eg Howe 2008). Although one recent review has concluded that there is no compelling quantitative evidence for claims that women doctors, in general, have better communication skills (Kilminster et al 2007), there is a large body of (mainly qualitative) research which suggests that there may be subtle variations in the workload and practice activities at the micro-level between women and men doctors working in what are ostensibly the same specialties and posts.

5.106 These variations may come about because, for example, some women may themselves value different aspects of their specialty from men (as in Riska’s study of pathologists: Riska 2001a); or they may be encouraged, if surgeons, by their seniors to specialise in specific operations (eg Cassell 1998). Studies of NHS general practice show that women may be involved in task ‘swaps’ with their male colleagues, and, whether they wish it or not, tend to have a very different

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28 For example, letters published in British Journal of General Practice, March 2008, 58, p. 204.
caseload, because women patients choose to see women doctors, and expect different communication styles (Brooks 1998; Chambers and Campbell 1996). Thus, although neither women nor men are homogeneous in their outlook and attitudes to practice, the actions of others may help to crystallise aggregate gender differences.

5.107 Detailed analysis of this large body of research literature on possible gender effects on medical input (and, occasionally, on outcome) is beyond the scope of this project. Some comment, however, on the possibility of there being aggregate differences is, however, appropriate, because of the recent publication of a study which attracted considerable mass media coverage, with such headlines as: women ‘treat fewer patients’ and senior women doctors ‘are less productive than male colleagues’, and a good deal of controversy at our seminar with members of the medical profession.29

5.108 The study (Bloor et al 2008), is rather more considered than the press headlines suggest. It found that, among full-time and maximum part-time NHS consultants in ten medical and surgical specialties in England, women had, on average, significantly fewer finished consultant episodes (FCEs) per annum recorded in their names than men. (The ten specialties were cardiology, general medicine, gastroenterology, geriatric medicine, paediatrics, ophthalmology, general surgery, urology, ear, nose and throat surgery, and trauma and orthopaedic surgery.) The differences were large and remained highly significant after controlling for various factors, including age of consultant, specialty, size of hospital, tariff-cost as proxy for case-mix, contract and markers of experience such as distinction award. Some caution is necessary, however, in interpreting the findings.

5.108.1 The study provides a very limited basis for generalising about all women NHS consultants in that the sample (selected by virtue of the specialties chosen) included only 21.9% of all full-time and maximum part-time women consultants in the relevant year, and 14.4% of all female consultants, compared to 40.3% and 33.2% respectively for male consultants.30

5.108.2 In seven of the ten specialties chosen, there were fewer than 100 women consultants, while 72.2% of the women consultants (39.3% of men) were in just three specialties – general medicine, geriatric medicine and paediatrics. While the analysis controlled for specialty, it recognised it could not control for any possible ‘token’ effect, for example if women in specialties where they are rare have greater involvement in non-clinical duties.

5.108.3 Nor, as was recognised, could the study control for hidden and subspecialty differences, which could have a disproportionate effect in those specialties with few women. For example, if more of the 82 women general surgeons are breast rather than gastrointestinal surgeons than their male colleagues, or if more of the 33 women orthopaedic surgeons specialise in, for example, hand surgery, rather than in performing large numbers of routine hip or knee replacements, this could affect clinical activity and overall productivity, as could differences in the extent to which males and females were contracted to provide emergency on-call cover. The workloads of consultants sampled as being in ‘general medicine’ may be very heterogeneous, as the majority of these will hold dual registration in acute and general medicine and another physicianly specialty, and overall clinical work content will vary with the latter (Royal College of Physicians 2008).

5.108.4 In our seminar with doctors, it was claimed the attribution of FCEs was notoriously unreliable, and that senior women were more involved than male colleagues in teaching and administrative tasks, as well as in being ‘token’ representatives of their sex, and that this would reduce their clinical input. If this putative different involvement is institutionalised, it ought to be becoming apparent in the distribution of contracted PAs under the new consultants’ contract. (Bloor et al (2008)’s study was conducted before full implementation.) There is, however, some relevant information on PAs collected in two royal colleges’ censuses.

5.108.5 As noted earlier, among full-time paediatric consultants, in 2005, men were more likely than women to be contracted for more than 12 PAs in total, and men were more likely than women to be working in acute rather than community paediatrics, with the former having, on average, a higher ratio of clinical PAs to ‘other’ and ‘supporting’ PAs (Royal College of Paediatrics and Child Health 2006). This is consistent with the claim that women paediatric consultants do proportionately more non-clinical work than their male peers.

5.108.6 According to the RCP’s 2006 Census of consultant physicians, among all full-time consultant physicians, the mean clinical PAs contracted for men was 8.1, compared to women’s 7.8, with clinical PAs forming 68.5% of male average PAs (66.2% of female), but this very slightly greater clinical activity among males did not apply in all specialties.

5.108.6.1 Contracted PAs for full-time male and female physicians did, however, differ in one further respect. Only 32.4% of all female full-time consultant physicians were contracted to be on-call for ‘unscheduled medical emergencies’, compared to 48.1% of male equivalents. These emergency on-call duties might lead to a higher number of FCEs being attributed to duty consultant physicians, producing significant mean gender differences in ‘general medicine’ activity.31

5.108.7 These data give a little support to the idea that there might be aggregate gender differences in consultants’ contracted job plans – which would imply that any gender differences in ‘average clinical activity’ are likely to be the result of women’s having different contractual obligations. But much more extensive evidence on contracts, on actual PAs worked, and on outcomes would be needed to establish if this is the case and has any consequences for productivity and patient care.

5.109 In summary, it would seem premature to come to firm conclusions about the extent of gender differences in practice styles and workloads, let alone about their impact on productivity and patient outcomes. In order to assess the implications of the increasing entry of women into different medical fields, and the implications of service redesign, much more detailed quantitative and qualitative research at the micro-level is now required.

Interprofessional comparisons

5.110 Comparing modes of working in medicine with the other professions in the UK with increasing proportions of women is not easy, because of a lack of comparable information, and because of variations in employment structures and age profiles. In general, professional women are shown to work shorter hours on average than men, and their working arrangements also

31 Information supplied by RCP Medical Workforce Unit.
tend to differ. In particular, in professions with a large element of owner-run small businesses, women tend to be more strongly represented in salaried or sessionally paid positions or, if the option exists, in the wholly salaried sector.

5.111 In 2006, 25% of women veterinary surgeons worked part time compared to 5% of men, and women were much more likely to be salaried assistants or salaried partners than their male counterparts, even allowing for the younger average age of women. As the proportion of women entering the profession has risen, so average hours of work and on-call hours are declining, and the use of out-of-hours deputising services is increasing, suggesting that women may be limiting their commitment in this respect (Royal College of Veterinary Surgeons 2006).

5.112 The percentage of women among solicitors in the small salaried sector of legal work (e.g. in local government) is higher than in private practice firms. The overall proportion of solicitors reported to be working part time is relatively small, probably reflecting the young age profile of women solicitors. In 2004, 14.4% of female solicitors and 3.7% of men were ‘part time’, including 23.5% and 4.9% respectively of those in private practice (Law Society 2004).

5.113 Women outnumber men in the very small salaried NHS community dentistry sector. But most women dentists are in ‘high street’ dentistry, where they seem to be particularly likely to work less than full time, although the evidence relates only to those who do some NHS work. In 2007, the average working hours for male dentists in this category were 39.5 hours and for women 32.6 hours, but the difference is greater among dentists over the age of 30, perhaps as women dentists start their families.

5.114 As with medical GPs, general dental practitioners who are owners of their businesses work longer hours than those who are not. Women owners work, on average, less than men owners, but women are much less likely to be practice owners (‘provider-performers’) than men (NHS Information Centre 2008a). A recent qualitative study of the professional expectations of trainee dentists concluded that the profession was often chosen because it offered good financial prospects, security and flexible working opportunities, and it would appear that women make use of these features (Gallagher et al 2007).

5.115 Although the pharmacy profession includes a large component of owner-run businesses, women pharmacists are more likely to work in hospital pharmacy or as employees in multiple and community pharmacies rather than owning their own businesses. Owners report working much longer hours than other pharmacists. Overall, women are more likely to work less than 33 hours per week than men (41.0% to 18.9%). An emerging feature of pharmacy work is the portfolio career, with women being the majority of those holding more than one part-time job (Hassell et al 2006).

Medical women’s modes of working: some international comparisons

5.116 Precise quantitative international comparisons of women’s modes of working in medicine are not possible, partly because the information available is so variable. In most Western countries, however, average working hours for women doctors are reported as being less than men’s. For example, women doctors are reported as working, on average, 9.5–10 hours less per week than their male colleagues in Australia in 2004, and an average of 7.4 hours less than men in the USA in 2006 (Australian Institute of Health and Welfare 2006; Association of American Medical Colleges 2008). Female primary care physicians in Canada aged 35–55 in 2003 worked
81% of the mean working hours of their male peers (Watson et al. 2006). Reduction in the volume of medical input per doctor is a prominent theme in discussions of the increased entry of women into medicine in many countries.

5.117 This generally observed gender gap in average working hours is associated with the broad patterns of gender differences in specialty choice, with women being more likely to favour fields with predictable working (and shorter average hours), as noted in Chapter 4. The size of the gender difference in hours, the extent to which women doctors work ‘part time’, and the relationship between specialty choice and working arrangements does, however, vary between countries. In-depth comparative studies of medical women’s working patterns indicate that these are not just influenced by national variations in healthcare organisation, but also by wider social factors including the legal and social policy frameworks that govern working practices generally, the extent to which equal opportunities are important political goals, and cultural values (Crompton and Le Feuvre 2003; Riska 2001a).

5.117.1 For example, the UK has, with the Netherlands, higher rates of officially recorded part-time working by women generally than most other European countries, partly because greater labour market flexibility has encouraged the growth of part-time jobs (Crompton 1999; Hakim 1996). This may be one reason why part-time working for medical women is such a prominent issue in the UK.

5.117.2 In contrast, Riska reports that in the Nordic countries part-time posts in medicine are not strongly associated with women physicians, but rather with men, in the form of private practice as subsidiary work in addition to public sector employment; although in Norway, a small proportion of women doctors hold a portfolio of part-time posts, rather than a single full-time post (Riska 2001a: 69; Gjerberg 2003). If full-time working hours for women doctors (albeit less than men’s on average) are the norm in Scandinavian countries, this may not simply be the consequence of extensive state provision of pre-school childcare.

5.117.3 In France, where there has long been similar extensive public childcare support, medical women have, until recently, been nearly as likely to work part time as in Britain (Crompton et al. 1999). One possibly crucial difference between France and Scandinavia is that, traditionally, men have much lower levels of participation in domestic labour in France, and there has been little public policy or social support for change in this area, as there has been in Scandinavia (Crompton and Lyonette 2006). Recently, there are indications that working hours are rising for both women and men in medicine in France, but the gap between male and female working hours remains (Crompton and Le Feuvre 2003).

5.118 In countries with opportunities for both self-employed and salaried employment in healthcare, women tend to be over-represented in salaried practice, as in the USA and Canada. This may be partly because salaried practice, particularly in the public sector, tends to be associated with specialties with predictable hours, and partly because, in the USA in particular, the salaried sector has been expanding relative to self-employed practice, and therefore attracts more younger entrants, including more women (Leicht and Fennell 2001). But there are exceptions, as in France, where sole practice self-employment has been relatively more popular than hospital employment for women specialists (Crompton and Le Feuvre 2003).

5.119 What these patterns, including the exceptions, suggest is that if medical women, especially those with family responsibilities, seek ‘time sovereignty’ (Crompton and Le Feuvre 2003) or
predictability of working patterns, the means of achieving this may vary to some extent between societies, as well as between different healthcare work settings (and different professions) within countries. In countries where equal opportunities and family-friendly policies are strongly institutionalised in employing organisations, salaried practice may have advantages for women (and there may be differences between public and private sector employment in this), and part-time work may be relatively rare. Where they are not, and where the capital costs of setting up in sole private practice are manageable, this may offer opportunities to manage time by limiting the number of patients taken on, but this is decreasingly available as an option in medicine in most countries.

5.120 In the following chapter, some connections between modes of working and the extent of advancement within professional career structures are discussed.
6 Advancement and leadership capacity in medical careers

Introduction

6.1 One of the concerns that led to the commissioning of this project was whether the increasing entry of women into medicine had implications for leadership within the profession. There was speculation, for example, about whether the pool of potential professional leaders might be reduced, if women were, for whatever reason, less likely than men to pursue or to achieve leadership positions. If so, it was suggested that this could not only represent a waste of women's talents, but also might lead to weaker professional leadership and reduced influence and status for the UK medical profession in policy-making and society generally. In the context of a wider ongoing debate about the future role of the profession, for the President of the RCP (Dame Carol Black) to hint that there might be an association between the ‘downgrading [of influence and] professionalism’ in Russian medicine and its being an almost entirely female profession, and that the UK profession might follow, was bound to create public and professional controversy (Independent, 2 August 2004). 

6.2 Addressing general questions about the future of leadership in medicine and the status of the profession falls within the scope of other, concurrent RCP initiatives on the future of professionalism and the role of the doctor (Levenson et al 2008; Royal College of Physicians 2005). This chapter attempts only to document some of the evidence relating to women’s advancement within medicine, examining the extent of their professional success and their participation in a range of leadership roles within medicine, with some inter-professional comparisons. The focus is on a broad conception of advancement and leadership as well as on elite positions, and on the extent to which women have advanced, rather than on their achievements relative to men’s. Attention is drawn, however, to some problematic implications of changes in the profession for women, and to the likely persistence of some gender differences in career advancement and leadership participation.

6.3 One point established early in the project was that the prospect of a ‘leadership deficit’ arising simply from the disappearance of men from medicine was unlikely, because men are not

Although good data are scarce, it is estimated that c70% (or more) of Soviet doctors were female from the 1940s to the collapse of the USSR (and no more recent reliable evidence has been found). So, the preponderance of women in Russia has a long history. Indeed, there were considerable numbers of Russian women in and training for medicine from the mid-nineteenth century, although much of this was specifically for work with women and children, and institutionally separated from men’s training. After the 1917 revolution, male entrants to medicine fell rapidly as university medical education and autonomous professional practice were destroyed, and state priority given to industrial production, while women doctors were officially encouraged as vital for preserving the nation’s health. Women were the clear majority of Soviet doctors by the 1930s. The high level of women’s entry was, therefore, probably more a consequence rather than a prime cause of the political weakness and lack of independence of Soviet (and pre-Soviet) medicine (Bonner 1992; Field 1967; Riska 2001a).
disappearing. As shown in Chapter 3, in terms of numbers, more young men have entered UK medical schools in every year since 2000 than ever before. In this respect, the potential competition from men for the limited numbers of elite positions in medicine is not reducing.

Success and leadership in medicine

6.4 As Chapter 3 showed, medicine attracts highly qualified, highly motivated recruits who are likely to have high career expectations. Whether such expectations are necessarily focused on achieving particular elite positions is another matter. It is possible, even probable, that the vast majority of entrants, male or female, never harbour the ambition to be president of a royal college or a professor of surgery, and certain that, if they did so, the vast majority of both sexes would fail to realise these particular ambitions. By definition, only a few can succeed in gaining elite positions.

6.5 Within the profession, there are likely to be many views as to what counts as success. This is partly because medicine offers such a wide variety of career options. This and the strong sense of professional identity generated in medical training are probably important factors in the very high long-term retention rates found for medical graduates of both sexes described in Chapter 5 (together with the relatively good overall prospects for finding medical employment in the UK over the past half-century). For some doctors, long-term part-time working in a congenial general practice, achieving good relationships with patients and a reasonable income, while having time for family or other valued interests outside medicine, might count as success. For others, part-time working might be a frustrating, short-term enforced compromise between temporary domestic exigencies and professional ambition. Defining success or failure solely in terms of achievement of formal high status positions obscures such variations.

6.6 Similarly, professional leadership is not exercised only through elite positions. Although it may no longer be the case that doctors are always the leaders in multidisciplinary teams, or see themselves as authorities over, rather than as 'partners' with, their patients, trained doctors are still required to offer leadership within clinical and organisational teams in their daily work, as well as, 'where they have appropriate skills, to take senior leadership and management positions in research, education and delivery' (Department of Health 2008b: 10). It is therefore, apposite to consider trends in advancement through the career structure before discussing the elite leadership roles occupied by a very small minority of the profession. The latter include academic leadership of the profession through teaching and research; clinical leadership exercised by outstanding practitioners; managerial leadership within the NHS or other health service delivery organisations; and professional representational roles within professional organisations such as royal colleges or the British Medical Association.

Models of advancement in professional careers

6.7 Professional work can be organised under different organisational arrangements, each offering distinct career pathways to senior positions. For this project, three main organisational models in professional work were identified as relevant, summarised below in idealised form.

(1) The traditional, self-employed professional practice model, led by solo practitioners or partners, with an equity stake in the practice (ie capital investment in premises, equipment etc). Service delivery, management and leadership are all mainly in the
hands of the sole or partner equity owners. There is little internal hierarchy or career structure, although there may be a small number of associate or assistant practitioners working on a salaried basis.

(2) The competitive professional tournament or high attrition ‘up or out’ model, in which professional organisations might be represented as an inverted funnel – a very large number of entrants at the bottom, of whom only a very small number (possibly only 10–20% of an intake cohort) will reach the top leadership positions (partnership status), with the rest having to settle for definitely secondary positions within the organisation or, more often, leaving the organisation after 10–15 years of intensive service for less prestigious work.

(3) The bureaucratic career ladder, or ‘cylindrical model’ with low attrition, in which many, possibly most, entrants can expect to rise up a hierarchy to the large number of senior positions within the organisation. Entry levels are planned with this in mind.

6.8 In some professions, one of these types may predominate, although rarely to the exclusion of all others, while others offer a more balanced menu of organisational models. For example, UK dentistry and veterinary medicine are overwhelmingly supplied through the first type of traditional self-employed practice, although both have a small, mainly public sector, salaried ‘cylindrical model’ sector. In contrast, the solicitors’ branch of the UK legal profession is increasingly dominated by a number of very large and expanding private practice firms, with the route to partnership following the competitive funnel model, although there is still a large, although rapidly declining, number of traditional small private practices (and a small wholly salaried sector). Pharmacy currently offers a range of options, including traditional practice in the form of community pharmacy businesses, and bureaucratically ordered careers in the NHS hospital sector, or, increasingly, in the multiple retail chains which are encroaching on the community pharmacy sector.

6.9 Our seminar with representatives of a range of professions produced clear views on how patterns of advancement for the large numbers of women now entering these professions differed between these models. (A literature search produced supporting evidence for these views, some of which is cited in Chapter 5.)

6.9.1 Under the first traditional model, predominant in dentistry or veterinary medicine, many women were reported to be entering into equity partnerships following probationary periods (eg as assistants). Overall, however, women were less likely to do so than men, particularly if they wished to work less than full time. The financial capital requirements and responsibilities of owning and running a business could be very onerous, and long-term commitment to a particular practice was desirable. Owner/partnership was not completely incompatible with reduced commitment, but developing equitable arrangements between full- and part-time partners was not always easy. Thus, part-time work might be more easily accommodated by alternatives, such as associate positions paid on a sessional or salaried basis, including holding a portfolio of part-time positions in different practices, as is developing in pharmacy (Hassell et al 2006).

6.9.1.1 In sum, one possible implication of the increased entry of women into professions where traditional self-employed practice organisation was still important, is that women might be less likely to be in practice leadership positions, although this was not seen as inevitable. If
large numbers of women opted for alternatives to traditional small equity partnership, this could have implications for traditional leadership, but this was only one of the pressures on this model.

6.9.2 Under the second ‘funnel’ model, seen as increasingly dominant in commercial service professions, such as accountancy and law, reaching the most senior positions was considered to be near impossible without being not just full time, but ‘more than full time’: demonstrating commitment through investing in many extra activities; long working hours, willingness to travel extensively and at short notice; and, in general, demonstrating the revenue-generating potential required for partnership. Seeking reduced commitment in these organisations was therefore incompatible with professional advancement.

6.9.2.1 Our informants reported that most men and even more women did not (and would not expect to) reach the most senior positions (partnership) where the workload remained intense. Thus the increased entry of women at the bottom was not being reflected at the top of these organisations. However, examples were given of new intermediate organisational positions created to retain the skills of highly able women, who did not seek or could not meet the demanding workload expectations inherent in partnership status, but whom the organisation did not want to lose.

6.9.3 In the third, cylindrical professional model (mainly found in the public sector), where careers were more stable, promotion prospects were thought to be relatively good for women who remained within the organisation, because there were a large number of senior positions relative to those working their way up the ladder. Equal opportunities policies were seen as having a much greater role here than in the other two models. It was possible for those working less than full time to advance to fairly senior positions, although usually more difficult, and slower, than for full-timers. Thus, although women’s prospects were good, they were not, on average, as good as those for men.

Models of advancement and career structures within UK medicine

6.10 The relevance for medicine of these different models and points from other professions is three-fold:

(1) Different models may provide different opportunities and constraints, and expectations about advancement to leadership positions, and advancement may be more or less compatible with LTFT working or career breaks.

(2) Advancing to leadership positions in all three models involved considerable commitment and investment in careers, but particularly so in the second ‘funnel’ model.

(3) Medicine in the UK offers elements of all three models, shaping advancement to the two main career positions in which on-the-job leadership is exercised: the GP and the hospital consultant grade.

6.11 NHS general practice has historically exemplified the first traditional practice model, with the self-employed principal being usually either sole owner or part of an equity partnership. As described in Chapter 1, within the hospital sector (through which all UK-trained GPs will pass) there has been tension throughout the history of the NHS between the second (‘funnel’) and third (‘cylindrical’) models: tension between the demand for competitive selection to ensure that only the best reach the consultant career grade (funnel) and orderly workforce planning (cylinder), so
that there are permanent jobs for most UKMGs, bearing in mind that much of their training is at public expense (and that there has long been a powerful professional demand for job security).

6.12 Since the mid-1990s, with the implementation of the Calman reforms, and the establishment of quotas of specialist training numbers and coordinated training programmes (now extended to general practice under MMC), the specialist training ladder has been explicitly designed to come closer to the cylinder model for those able to get onto the ladder in the first place.

6.12.1 The implication of a more cylindrical model is that those doctors, male or female, who actually get on to the training ladder at the critical stage (ST1 under MMC), might be expected to advance relatively more easily than in the very highly competitive funnel model, becoming typical of commercial service professions, where the transition from wide entry to narrow leadership positions comes later in careers, and much more sharply.

Professional practitioner and service posts in UK medicine

6.13 Within each different career advancement model, even those with a relatively orderly bureaucratic or ‘cylindrical’ career ladder, and a high proportion of senior positions available, there are positions to the side of the main career track. These may be occupied, temporarily or permanently, by qualified members of the profession who can provide expert services, but who, for whatever reason, are neither in nor moving towards the standard senior positions within each model. Such posts do not offer or require the same opportunities to exercise leadership as the mainstream senior positions, but may be crucial for delivering services.

6.14 Such positions have been termed ‘practitioner’ or ‘service’ (rather than ‘career’) posts, and have often been identified as ones that may lend themselves to flexible working, and which women may be more likely to occupy, at some life stages (Crompton and Sanderson 1990). Examples from other professions include ‘portfolio’ sessional work in pharmacy and associate solicitor positions, as already cited.

6.15 Within NHS medicine, there have been various types of practitioner posts. In general practice there have been locums and salaried assistants (see Chapter 5). In the hospital sector since 1948, various non-consultant career grades have been available for those regarded as no longer in training, but ineligible or not seeking consultant posts. (These are now mainly categorised as associate specialists.) There are also posts designed to be held part time alongside other commitments, such as clinical assistantships.

6.16 For most of the NHS’s history, the ratio of practitioner posts to career posts has been low. In general practice, access to career posts as principal was relatively open, at least for those who could meet contract and partnership conditions. In hospitals, reliance on service cover from doctors in training grades left the consultant grade as the main career post. However, a number of recent policy developments have refocused attention on practitioner posts. These need to be considered when reviewing the past and possible future trends in women’s advancement into NHS career posts and hence into on-the-job leadership.

Women’s advancement in general practice

6.17 At the clinical and organisational level, leadership in NHS general practice has been largely in the hands of the single-handed or partner owners of practices, albeit operating within the
constraints of the NHS General Medical Services contract. Since the 1960s, group practices have expanded relative to single-handed ones, generally with arrangements for full partners to move towards parity of ownership and decision-making over time. Although the option of salaried partnership was available, as discussed in Chapter 5, secure alternatives to being a practice partner for fully trained GPs were limited until about a decade ago. Since then the scope for more flexible (Personal Medical Services (PMS)) contracts and salaried practice have been expanded, including the possibility of direct employment by primary care trusts (PCTs) or by alternative providers as well as by practice partners.

6.18 Evidence has already been presented showing that, for many decades, women have been consistently more likely to enter general practice than their male peers and that they now constitute more than 40% of all fully trained GPs in England, and that many work LTFT. Cohort studies have generally shown that women in general practice have been more likely than male peers to be working in posts other than as principals (now termed ‘providers’) (Lambert 1996; Lambert and Goldacre 2002).

6.19 The difference, however, diminishes over time within cohorts. Confirming general practice's historical exemplification of the first (traditional) model of professional advancement, the vast majority of both female and male GPs work as GP principals/providers, who in turn are mostly partners (or solo practitioners).

- Among 1988 qualifiers who became GPs, 78% of women and 94% of men were principals at 16 years post-qualification (UK Medical Careers Research Group 2006).
- Allen’s surveys of three 1980s cohorts of GPs completing vocational training showed that among those who were principals in group practice (whether full time or part time), over 85% for both sexes in all cohorts were full partners, although women were slightly more likely than men to be salaried partners among the small remainder (Allen 1992: 69).

6.20 As might be expected, the gender composition of practice partnerships has changed somewhat as the proportion of GP principals who are women has increased.

- In 1996, 41.5% of all 9,113 NHS GP practices in England were either owned by single-handed males (26.0%), or all-male partnerships (15.5%). A further 31.7% of group practices had more male partners than female (whether salaried or full partners not specified).
- By 2006, the total number of practices had fallen to 8,325, with the percentage of male single-handed practices falling to 21.8%, and all-male partnerships to 12.9%. The percentage of all partnerships with more male partners than females was virtually unchanged from 1996, at 30.9%.
- Between 1996 and 2006, the percentage of all practices that were multi-partner practices with at least as many female as male partners increased from 19.0% to 27.5%, although the proportion of practices that were single-handed female or exclusively female partnerships remained the same (6.5% and 6.4%) over the decade.\(^2\)

\(^2\) Data from NHS IC.
6.21 So, with the increase in the proportion of GPs who are female over the last decade, the proportion of all practices in which women are potentially involved in leadership and management has increased. One-third of practices in 2006 had at least as many women partners as men, although a further third still had only male partners or solo male principals.3

6.21.1 These data do not distinguish between salaried and full partnership status, nor do they give any information about partnership agreements or working arrangements. Allen’s (1992) survey documented some complaints from women part-time principals (and assistants) about lack of influence within the practice. But there seems to have been little recent research into partnership decisions and organisational leadership within general practices. The statistical evidence suggests that that many women have entered potential leadership positions within individual general practices over the last decade.

6.22 Whether they have done so in proportion to the increase in their entry to general practice is less clear. As reviewed in Chapter 5, there has been a recent increase in young GPs of both sexes who are not principals, and the introduction of new possibilities for salaried general practice in the last decade has seen these positions predominantly entered by women, often on a part-time basis. This is reflected (albeit approximately) in the ratio of ‘GP others’ to ‘GP providers’ in the NHS statistics on the general practice workforce in different age groups (‘others’ being salaried GPs within partnerships).

| In 2007, 25.2% of all women GP practitioners but only 9.7% of men were ‘others’. |
| For both sexes, the majority of the small number of GPs (excluding registrars) aged under 35 were ‘others’. Among the 35–39 age group, 58.0% of women and 32.8% men were ‘others’, declining to 23.6% women and 9.5% men in the 40–44 age group (NHS Information Centre 2008a). |

6.23 Given the gender differences in age profile, and the fact that nearly half of all female GPs are working part time, it seems likely that women are not currently involved in leadership and management decisions within general practices in proportion to their increasing numbers. If so, this may in turn lead to women’s being less involved in GP leadership beyond individual practices. For example, a search of the websites for 152 PCTs in England in November 2007 indicated that professional executive chair positions were overwhelmingly held by male GPs.

6.24 Whether working in new salaried positions will become a long-term career choice for a large proportion of today’s younger, predominantly female entrants to general practice cannot yet be determined. Past trends would suggest that, as the increased proportion of female entrants moves into older age groups, they will mainly follow the traditional models of professional advancement, by moving into partnerships, whether full time or part time, with increased equity ownership and involvement in practice leadership.

6.25 However, if this does not happen, then, as older, predominantly male owner partners retire, the increased entry of women might contribute to general practice’s shift away from the traditional independent contractor self-employed model, a shift which may also be influenced by other policy changes unrelated to the increased entry of women. If the new provider models for primary care expand, salaried practice could, in time, become the normal career option in general practice rather than primarily a ‘practitioner niche’.

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3 Single-handed male and all-male partner practices might employ female GPs as assistants etc.
Gender and professional advancement in hospital medicine

6.26 The core career and leadership grade in hospital medicine is that of consultant. That women currently comprise a lower proportion of NHS consultants than among medical students is indubitable. As shown earlier, just under 28% of all NHS consultants in England in 2007 were female, compared to just under 60% of all medical students. Sometimes, the discrepancy between these two figures is used as evidence of women’s lack of advancement in medicine. Such a comparison is, however, misleading for several reasons.

6.26.1 The entities being compared are the current stock of consultants, who may be in post for more than 30 years, with one part of the current flow into the profession (UKMGs). A more appropriate starting point for comparison would be new consultant appointments.

6.26.2 Statistics on new consultant appointments are no longer collected centrally by the NHS, or by most medical colleges. So the best approximation in NHS workforce data is the stock of younger consultants. At least in the recent past, most consultants have been appointed in their mid-to-late 30s, with some in their 40s, and, recently, a few earlier. (There is variation between specialties, and possibly between women and men if women take longer to obtain CCT because of career breaks and part-time training.)

6.26.3 Given the time necessary for the increased entry of women to move up the career ladder from medical school, the appropriate comparison of the current stock of younger consultants is not with the percentage of women in current medical school intake, but with the intake at least 15, and perhaps, 20–25 years earlier; that is, in the late 1980s.

6.26.3.1 This would make the ‘expected’ proportion of women among NHS consultants aged less than 45 to be in the region of 40–45%, assuming no gender differences in attrition.

6.26.4 A further consideration is that the stock of NHS consultants includes many IMGs. Comparisons between the gender ratio of UK medical school intakes and in subsequent NHS consultants posts need, therefore, to exclude IMGs.

6.26.4.1 In 2007, 28.9% of all NHS consultants in England were IMGs; and they were slightly less likely to be female than UKMG consultants – 25.0% and 28.8% female respectively.

6.26.4.2 The composition of the total NHS consultant workforce in 2007 was 50.6% UKMG males, 20.5% UKMG females, 4.7% other EEA-qualified males, 2.5% other EEA females, 16.9 ex-EEA qualified males, and 4.7% were ex-EEA females (NHS Information Centre 2008b).

6.27 Excluding IMG consultants, and focusing on only younger age groups, reveals higher percentages of women among NHS consultants in England in 2007 than found in the overall figures.4

6.27.1 Women comprised 47% of the very small number (402) of UK-trained consultants aged 30–34. (Not surprisingly, these women, who have moved very rapidly up the career track, have an NHS participation rate of 97.6, suggesting that almost all are full-time in the NHS.)

6.27.2 Women were 36.2% of consultants aged 35–39, and 33.9% among those aged 40–44. The percentage declines by successive age groups, with only 19.7% women among consultants aged 55–59 and 14.0% among those aged over 60.

4 Data from the annual medical workforce census for hospital and community services supplied for the project by the NHS Information Centre, unless otherwise indicated.
6.28 These figures indicate that the recent advancement of the increased numbers of women up the NHS hospital career ladder may be rather greater than is usually recognised. Conversely, the proportion of women among older consultants, who are the most likely to occupy some elite positions, is considerably less than among all consultants.

6.29 Figure 6.1 shows the trends in the percentage of women among UK-trained consultants aged under 45 years compared to the intake to UK medical schools 20 and 25 years earlier, with the trend for all UK-trained consultants also included for reference. It is clear that, although there is a ‘gap’ between the lines representing earlier medical school intakes and younger consultants, the gap is much smaller than that for all consultants.

Fig 6.1 Percentage females of consultants of all ages and of UK-trained consultants aged under 45 years (NHS England, 1992–2007) compared to percentage females among intake to UK medical schools 20 and 25 years earlier.
Source: NHS Information Centre, University Grants Committee and NHS Workforce Review Team.

6.30 While the comparison provided in Figure 6.1 gives an indication of the trends in UK-trained women’s advancement to consultant status, it is a very crude substitute for longitudinal cohort data. These could show directly both progress and attrition from hospital training, and the extent to which a cylinder model of career progress was in operation for either sex. Such data were not available to this project, although relevant information could be extracted from existing cohort surveys. But some rough estimates can be inferred from UK MCRG reports, using achievement of consultant posts as the relevant outcome (Goldacre et al 2001; Lambert et al 2002; UK MCRG 2006).

6.31 The reasoning underpinning the following estimates is as follows:

- Among any cohort of medical graduates, there will be some who make early decisions to leave NHS hospital medicine; that is, they are effectively never on the consultant track. As noted in Chapter 4, early commitment to general practice is probably rarely reversed.

- It is from the remainder that those who are contenders for hospital consultant posts will be primarily drawn. (Among these there will be some ‘others’ who will also not
be in the ‘real field’, because they choose non-NHS practice, leave medicine or leave the UK at an early stage, but these cannot be distinguished in aggregate data from would-be consultants gaining wider experience.)

As women have been more likely than men to opt early for general practice, this will reduce their presence in the ‘real field’ of contenders for hospital consultant posts to below their share in the original graduating cohort.

The following rough estimates were made for the 1988 cohort surveyed by UK MCRG as illustrative examples.

6.32.1 The percentage of females in the 1988 qualifying cohort was 45%. Some 16 years later, among respondents to a follow-up survey, 30% of all women respondents and 47% of all men were consultants or academic equivalents. (Women were 37% of all those in these posts.) So women are less likely than their male peers in this cohort to have become consultants by this stage (although some might still be on the ladder).

6.32.2 However, if the ‘real field’ of potential consultants is narrowed to only those who had not entered general practice within 5 years, the percentage of women gaining consultant posts was at least 43% and might have been as high as 69% of those who set foot on the specialist training ladder. The range of estimates reflects uncertainty about the career intentions of the ‘others’ who were in neither general practice nor hospital medicine at relevant points.

6.32.3 The precise figures are less important than illustrating the value of developing better analysis of career progress, rather than relying on comparing cross-sectional data.

6.33 These estimates of women’s advancement up (and attrition from) the consultant training ladder are lower than the equivalent percentages estimated for men. They are, however, significantly higher than the 30% of original qualifiers first cited.

6.34 Both the NHS workforce data comparison and these approximate estimates imply that the advancement rate for UKMG women qualifying in the last two decades is likely to be much greater than would be found in the ‘funnel’ or competitive tournament advancement model prevailing in large commercial accountancy or legal service firms. This is what should be expected under the cylinder model implicit in current NHS workforce and specialist training planning, but it underlines the point that, for recent cohorts of UK-trained medical women, advancement in NHS hospital medicine as a whole has been considerable.

6.34.1 Within the NHS in the last decade, consultant posts generally have expanded faster than the general practice sector. This may have led to more young medical women seeking and gaining...
consultant posts compared to earlier decades (a claim supported by trends in reported early career choices between cohorts (Lambert and Goldacre 2002)).

6.35 To repeat, this does not mean that there are not, on average, differences in the promotion patterns and advancement rates between men and women on the ladder. It is very likely that there are. If women are more likely to train flexibly or have career breaks, they will, on average, take longer than male peers to achieve CCT, and, by implication, consultant posts (although some men take time 'out of programme' too). Women may be more likely to enter non-consultant career posts for various reasons.

6.35.1 An analysis of doctors in registrar (including senior and SpR) grades in Scotland between 1991 and 2000 found that, overall, women were less likely to have achieved consultant status in the study period, as were those who worked part time, but the effect of interaction of these two factors was not determined (Mavromaras and Scott 2006).

6.36 Given the differences in the distribution of women and men trainees between specialties, differences in the expansion and/or competitiveness between specialties may also influence the average advancement rates for women and men. The evidence already reviewed about career preferences in Chapter 4 would suggest that women’s advancement in hospital medicine should be more apparent in some specialties than others.

6.37 The limited information and small numbers reduce scope for detailed analysis of gender trends at specialty level, but there are, currently, clear specialty differences in the percentage of women among younger consultants, broadly in line with the matrix of specialty characteristics outlined in Chapter 4.9

6.37.1 In 2007 in the NHS in England, 40% or more of all consultants aged under 45 were female in six specialty groups: public health medicine, paediatrics, clinical oncology, pathology, obstetrics and gynaecology, and psychiatry, with the first three having a majority of women among these younger consultants.

6.37.2 In the very large, heterogeneous general medical group, 34.5% of all consultants aged under 45 were women in 2007. The 2007 FRCsP consultant census found that the majority of new appointments of physician consultants under 35 were of women.10

6.37.2.1 Four of the physicianly specialties had a female majority among younger consultants: clinical genetics, dermatology, palliative medicine and genitourinary medicine: all high in patient interaction, and relatively plannable specialties.

6.37.2.2 The physicianly specialties with the least predictable, most acute workload have the lowest percentages of young women consultants, with gastroenterology and cardiology, renal medicine and neurology all having less than 25% women among younger consultants.

6.37.3 In 2007, of all NHS specialty groups, only one had less than 30% women among younger consultants: the surgical group, with only just over 10% of those aged under 45. Here again, there is the expected inter-specialty variation according to predictability of the clinical workload.

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9 NHS Information Centre data. IMGs are included because of small numbers in some specialties.
10 The NHS data on physician consultants generally correspond well with the FRCsP data on new consultant appointments and appointments by age group in England (Federation of the Royal Colleges of Physicians 2008).
6.37.3.1 Trauma and orthopaedics had the lowest figure, with just under 5% of younger consultants being women. In contrast, more than 25% of consultants aged under 45 were female in the much smaller field of ophthalmology, which is not a solely surgical specialty, has its own distinct training programme rather than coming under the auspices of the RCS, and offers great scope for regular hours of work.

6.38 In short, as already indicated by the data on trainee doctors in Chapter 4, on current trends, at least 40% of consultants in most HCHS specialties will be women within a decade.

**Practitioner and service posts in hospital medicine**

6.39 As already described in Chapter 1, one of the ways in which service shortfall has been met by NHS employers, particularly NHS trusts, over the last decade has been the increasing appointment of relatively inexperienced doctors, many of them IMGs, to explicitly service-only posts, albeit paid on training and equivalent pay scales.

6.40 Within the NHS, there have also always been a small number of career-grade HCHS posts held by experienced doctors regarded as having completed training but who are not, for whatever reason, appointed as consultants. The nomenclature for these posts has varied over time, but the terms non-consultant career grade (NCCG) or staff and associate grade specialists (SASGs) are both in current use.

6.41 Current numbers in SASG posts are fairly small (just over 9,000 SASGs in England in 2007 compared to over 33,000 consultants) (NHS Information Centre 2008b). The MMC controversy, the pressures on NHS trusts to expand service posts to cover shifts under EWTD, the drives towards UK self-sufficiency in doctors, with the implied reduced dependence on IMGs and towards a hospital sector service primarily delivered by trained doctors rather than trainees, have all led to renewed debate about these SASG posts. The Tooke Enquiry shared the expectation of expansion, while adding its voice to the many calls for the destigmatisation of these posts, and for better access to training for a group allegedly seen in some quarters as ‘an undesirable ‘sump’ (Tooke 2007: 152).

6.42 To date, there seems to have been little research on the circumstances and career paths of those who enter this ‘sump’ in order to clarify what their training and career development needs are. It is widely recognised that IMGs currently predominate among SASGs overall. Perhaps less widely recognised is that, in 2007, 40% of all SASGs in England and 66% of the UKMGs in these grades are women (44% of the latter being on part-time contracts).11

6.43 As with salaried positions in general practice, it is likely that, for some doctors seeking reduced commitment, SASG posts do offer more flexibility and more manageable workloads than the consultant track, at least at some points in their lives. However, if the number of SASG posts increases substantially, this might have unintended consequences for gender equality by reducing incentives for employers to offer flexible working conditions in consultant grade posts.

6.44 On similar grounds, the possibility, sometimes raised, of having an internally stratified consultant grade for those who have achieved CCT is potentially double-edged for women’s advancement prospects. Tiers might differ in the scope offered for reduced commitment.

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11 Data from NHS IC.
Women’s advancement to career posts in the NHS: summary

6.45 The discussion of women’s position in general practice and hospital medicine has shown that, in recent decades, the majority of medical women have moved into the same career grades as the majority of men; that is, as the proportion of women entering the profession has increased, so more women have been moving into positions in which they might be expected to exercise leadership as part of the job.

- In general practice, the proportion of practices that are exclusively male run and owned appears to be declining, and the vast majority of women GPs are direct providers of primary medical care rather than employees.
- If the greater likelihood of women to opt for general practice rather than hospital careers is taken into account then, among UKMGs qualifying 10–20 years ago, women who started on the hospital career ladder had a good chance of eventually achieving consultant posts.

6.46 Recognising the positive progress, and the relatively good rate of advancement for women in UK medicine compared to other comparable high status professions, does not imply there are no gender differences in career progress and outcome, or that advancement has been easy for women to achieve. On average, women may advance more slowly than men into career grades and are more likely to be in practitioner posts, which may offer greater flexibility for reduced working or career breaks. But, as Chapter 5 shows, working part time is far from impossible in the mainstream career grades, at least in some specialties.

6.47 Women’s greater likelihood of working part time at career grade level may, however, have implications for professional leadership, particularly as the proportion of women in medicine increases.

6.47.1 First there are the possibilities just alluded to, that increases in workforce reforms may lead to increases in practitioner posts (rather than career posts) or to hierarchies within the main career grades. If so, it is possible that options for flexible working might be more concentrated in practitioner or lower tier career posts, so that these become the posts in which women are more likely to work.

6.47.2 Secondly, although it is clear that part-time working and career breaks do not preclude achieving consultant posts or GP partnerships, it seems likely that, if these working patterns are because of extensive caring responsibilities (or indeed if full-time career post doctors have extensive caring responsibilities), time available for the extra professional commitment over and above demanding daily clinical work will be limited. Such responsibilities are most likely for women in their 30s and 40s, that is, in the age groups which currently have the most women in career posts, with perhaps another peak closer to normal retirement age, for elder care, potentially clashing with opportunities for involvement in other forms of medical leadership.

6.47.3 Such factors are likely to contribute to women’s relatively low representation, at present, in some of the more visible, elite leadership roles, as described below.

Medical leadership in NHS management

6.48 Attempts to enrol clinicians formally into NHS management structures and processes have a long and complex history. Over the last two decades, the structure of local NHS decision-
making bodies has been streamlined, reducing professional representation as such, in favour of more explicitly managerial expertise. One result is that, although senior clinicians have been encouraged to acquire management and leadership skills, it is less easy to identify specifically medical management posts, and the number of doctors at NHS board level has been reduced.

6.49 Given the time available for this project, the proportion of women among senior medical managers was investigated, through a search of relevant websites, at three levels: strategic health authorities, NHS acute trusts and PCTs.12

6.49.1 In the 10 strategic health authorities in England, among executive board members, no doctors were identified other than in the two specifically designated positions of medical director (3 male, 2 female, 5 unspecified) and director of public health (7 male, 2 female (both of whom also filled the medical director post), 1 unspecified).

6.49.2 Some information on board composition was retrieved for more than 180 acute trusts. Although specific detail was not always given, very few trusts appeared to have ‘doctors’ on their boards, other than as medical directors. Out of 183 medical directors for whom gender could be confirmed, 160 were male. If medical women have managerial responsibilities in acute trusts, this appears to be mainly below board level.

6.49.3 Websites for 152 PCTs (now reduced in number) revealed only one medically qualified chair and one chief executive. Up to three PCT board posts are likely to be filled by doctors. Of 134 directors of public health for whom gender could be ascertained, the majority were women (71:63). But of these only 39 women and 44 men were definitively identifiable as being medical doctors.13 Of the 45 medical directors for whom gender could be ascertained, 36 were male. As already noted, the vast majority of professional executive chairs (almost always GPs) were male (90:17).

6.50 It would appear that, at present, few women are currently in those board level NHS medical leadership roles that are likely to be held as ‘extras’, on top of professional commitments (even though this may be recognised in consultant contracts). Only in the positions in which board membership is part of the normal job (that is, in public health posts), are there significant numbers of women.

Political and professional leadership in medicine

6.51 Another form of elite professional leadership is that exercised on behalf of professional peers, either in organisations dedicated to particular fields of medicine, such as the medical royal colleges and faculties and the many specialist associations, or in organisations serving or representing the entire profession, as is done, in very different ways, by the GMC and the BMA.

6.52 There are methodological difficulties in establishing trends in this form of professional leadership. Not all organisations have easily accessible records of the membership of their councils or equivalent ruling bodies. The size and structure of such bodies varies considerably between organisations. In most cases, the number of official positions is too small to make for reliable inferences about numbers over time, even if the numbers are available.

12 Links to more than 200 organisations from the NHS Choices website (via www.nhs.uk) were followed up in October and November 2007.

13 Some specialist posts in public health are open to non-medically qualified trained specialists.
6.52.1 Through websites and personal communication with staff at 18 UK medical royal colleges and faculties, some information about council (or equivalent) composition in 2007 was retrieved. Of the 18 colleges, 10 had had at least one female president, with the then current incumbent being female in six cases. None of the surgical colleges had had female presidents, although several had (or have had) vice-presidents. All 18 had at least one woman on their then current council. For four colleges, more than one-third of council members were female; all were colleges for specialties with above-average proportions of women.

6.52.2 The GMC has been subject to major changes in composition and progressive reduction in medical membership in recent years. For as long as membership was mainly senior representatives of medical corporations, female membership of the council was very low. When the proportion elected by the profession increased, so did number of women on the council, to at least 25% of the c50 elected members between 1994 and 2001. From 2003, total membership was reduced to 35, with 19 places allocated to doctors elected by the profession, of whom six were female in 2007. Further changes are currently being implemented.14

6.52.3 The BMA, the main professional organisation negotiating terms and conditions of service for doctors in the NHS, has a governing council with 50 members in 2007, of whom 12 were female, including the deputy chairman, and two junior doctor representatives.15

6.53 Getting to such positions and fulfilling the duties once in requires investing time in ‘extras’, such as out-of-hours meetings, conferences and preparing speeches. For some of these organisations, making such investments is dependent on prior establishment of a successful clinical career. The most visible product of such investments, such as membership of a College’s council, is likely to come at a relatively late stage in a career, and most likely to be achievable through a more than full-time long-term professional commitment. Given the current differences in the age profile of male and female doctors, it is not surprising that the visible leadership of these professional organisations is still predominantly male.

6.54 Only a small minority of doctors of either sex are ever likely to become involved in this kind of leadership. Although the number of women who do so can be expected to increase as the number of women doctors in the older age groups increases, it seems probable that, for many reasons, women may be less likely to become involved than men. If so, there may well continue to be relatively more men in the elite professional leadership positions for the foreseeable future. Whether this is appropriate for the medical profession of the future is not a question this research can answer.

Academic leadership in medicine

6.55 Clinical academics are those with specific responsibility for the development and passing on of the profession’s knowledge base, through research and teaching medical students, in most cases in conjunction with clinical practice. Unlike medical management or involvement in professional leadership, involvement in clinical academic work may encompass all stages of a career. But such careers may be forged through a complex range of career opportunities and organisational arrangements. In addition to those who are employed in higher education institutions (funded by various sources and usually with honorary NHS contracts), there are those who are employed in the NHS with honorary university contracts.

14 Information supplied by GMC archivist July 2007.
6.56 Successfully pursuing a long-term university-based clinical academic career normally involves having to satisfy two sets of career requirements: those of the university, that is, research (with high expectations of grant-raising and publication), teaching (an expanding number of students) and administration; and those of the NHS and the profession, that is completing specialist training and professional exams, and providing a high-quality service to patients (Parry et al 2008).

6.57 The career advancement model in clinical academia is, in practice, something of a hybrid between the cylindrical model prevailing in the hospital sector and the more funnel-like structure found in research-intensive higher education institutions. Doctors can and do move between the different structures.

6.57.1 At the bottom of the clinical academic hierarchy are short-term posts, including research fellowships which often carry relatively little security. Incumbency of lecturer grade posts is probably much shorter in clinical academia than in academia generally, with doctors moving relatively rapidly up to senior lecturer or out to the NHS, normally at consultant level. Professorships represent an additional tier in clinical academia that has no direct formally designated equivalent in the NHS. Advancement to this level is likely to involve some of the same issues about ‘extras’ and exceptional commitment that other forms of elite leadership positions raise.

6.58 Several recent reports have drawn attention to the problems of recruitment and retention in clinical academia (eg Academy of Medical Sciences 2004). The general picture painted is that, although a short period doing research may benefit a specialist clinician’s career, there are currently major disincentives to embarking on a long-term career in academic medicine. These include slower and less certain progress to CCT while completing higher degrees, heavy workload in order to fulfil the triple demands of research, teaching and clinical practice, and less certain promotion prospects and lower pay, compared to the relatively readily available, much less risky, alternative of working in the NHS.

6.59 The Medical Schools Council has conducted annual censuses of those holding university-based clinical academic positions for several years. These indicate that, overall, as UK medical schools were expanding from 2000, the UK’s university-based clinical academic workforce was shrinking and aging. A decrease from over 3,500 to fewer than 3,000 FTEs was recorded between 2000 and 2006, although the first increase for several years was recorded between 2006 and 2007 (but only of 2% FTEs).

6.59.1 Since 2000, the number of university-employed clinical professors has not expanded in proportion to the expansion of medical school intake, or indeed to the expansion of the professoriate in higher education more generally in recent decades; but the most marked reduction in clinical academic posts has been at the lowest levels of the academic hierarchy. There was a 48% fall in clinical lecturer FTEs between 2000 and 2006, with a slight increase (6% FTEs) between 2006 and 2007, and a 20% fall of junior clinical research staff between 2000 and 2007 (Aldridge and Fitzpatrick 2008; Margerison and Morley 2007).

6.60 This lack of growth may be partly due to problems of recruitment, although there is little direct survey evidence available. (It is said that advertised posts do not always attract suitable applicants, and that therefore some potential posts are not advertised.) As a result of the problems identified in clinical academia, and concern about the future research base in clinical medicine and applied biomedical science, there have been several recent initiatives intended to improve
opportunities to embark on a clinical research career (Academy of Medical Sciences 2004; Aldridge and Fitzpatrick 2008; Tooke 2007).

6.61 There have also been several recent reports specifically on the position of women in clinical academia. These have drawn attention to two analytically distinct issues: the low proportion of women initially recruited into clinical academic and research positions, relative to their share in the profession as a whole; and the low proportion of women in the most senior positions, relative to their share in junior academic positions (as well as in the profession as a whole) (BMA Health Policy and Economic Research Unit 2004; Medical Schools Council 2007; Sandhu et al 2007; Women in Academic Medicine 2008).

6.61.1 In 2007, women were 23.6% of all clinical academics in the UK: 37.5% of clinical lecturers; 28.0% of clinical readers/senior lecturers; and 12.0% of clinical professors. Women comprised 34.1% of clinical academics aged 35 or under; 29.0% of those aged 36–45; and 21.6% of those aged over 45 (Aldridge and Fitzpatrick 2008).

6.61.2 In 2006, six medical schools were reported as having no female professors. Two out of 34 UK medical school deans were women, to serve as visible leaders for a student body that is more than half female (Sandhu et al 2007). Women are slightly more likely to be in senior positions in the separate deaneries responsible for postgraduate training, but these are administrative rather than clinical academic positions. Of 20 ‘lead’ postgraduate deans in the UK in 2007, six were female.

6.61.3 As might be expected, within clinical academia, the proportion of women varies between specialties, in line with women’s presence in these specialties in the NHS: in 2006, women comprised 36% of clinical academics in the specialty of general practice but only 10% of those in surgical specialties (Medical Schools Council 2007).

6.62 Cross-sectional data from successive UK MCRG cohort surveys indicate that women were less likely to be in academic or research positions at 5–6 years post-qualification than men in all cohorts for which data are available, although percentages of either sex were very small in a single cohort (eg Davidson et al 1998; UK MCRG 2003; 2006).

6.62.1 For example, 4.6% men and 2.5% women for the 1977 cohort, 7.6% and 4.1% for 1988 qualifiers, and 8.1% and 4.5% for 1996 qualifiers were in academic or research positions.

6.62.2 The same cohort studies show that, within cohorts, the percentage in academic posts tends to decline over time for both sexes.

6.63 These findings suggest, as do the Medical Schools Council censuses, along with qualitative evidence, that fewer women than men have entered clinical academia in recent years – but this

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16 Perhaps coincidentally, the proportion of senior lecturers/readers in UK medical schools who were women in 2007 was virtually identical to the proportion of women among NHS consultants (27–28%). Women comprised 20.5% of all UK clinical senior lecturers/readers and professors, compared to 16.6% of all NHS consultants on honorary contracts in England in 2007, but some clinical academics will not have NHS honorary contracts, and general practice academics are not included in the consultant figures (NHS Information Centre 2008b). Although the Medical Schools Council figures refer to the whole UK, rather than England, this is unlikely to affect the overall pattern significantly.

needs to be understood in the context of the general lack of expansion of posts and problems of recruitment. The UK MCRG findings also show that there is attrition among younger female and male clinical researchers from universities to the NHS (or movement between the two sectors). This may account in part for the ‘loss’ of women between the clinical lecturer grade and the senior lecturer grade. But more longitudinal data relating to individuals’ careers are needed to confirm these indications.

6.64 There is a further difference between clinical academia and NHS medicine that may affect the relative share of the academic posts held by women and men: the distribution of posts between specialties (Aldridge and Fitzpatrick 2008). These differences reflect variations in the scale of research activity and in the organisation of undergraduate medical education, with some specialties having more time in the curriculum and/or more teaching from university rather than service staff than others. For example:

- More than one-third of all clinical academics are in the physicianly specialties, compared to just over 1 in 5 consultants in the NHS. Surgery, in contrast, has a lower share of university-employed clinical academic posts than of NHS consultants (about 9% to 19%).

- The most striking difference is for general practice. Only 6.2% of all clinical academics in university posts (6.5% of clinical professors) are in general practice, the field in which more than half of all female NHS career grade doctors work. So the chances of women being in university employed academic posts are reduced by this major difference in initial specialty choice.

- In 2005, there were as many professors of public health as there were professors of general practice (62 of each, 6 and 14 women respectively) (Sandhu et al 2007). In the NHS in England, there are 32 GP providers to every one consultant level specialist in public health. This also illustrates the possible existence of internal differences between academic and NHS specialties. Although women constitute a high proportion of public health specialists in the NHS, a substantial proportion of those in academic public health departments are likely to be specialist research epidemiologists, among whom the gender ratio may be different from that prevailing in public health generally.

6.65 Research with female medical students and women in academic positions indicates that such factors as the greater insecurity and competitiveness, heavy workload and slower progress up the more complex career ladder may all militate against their recruitment and retention in clinical academia. But it is likely that there are additional problems for those women pursuing academic careers who wish to work flexibly, and especially if they wish to take career breaks (Medical Schools Council 2007; Women in Academic Medicine 2008). There are probably similarities between medicine and academic careers in science and technology with respect to ‘staying in’ and ‘getting on’ (Fielding and Glover 1999).

6.65.1 Although some full-time clinical academic posts may offer more flexibility on a daily basis than many full-time NHS clinical positions, it may be very difficult to perform at the highest level on all three aspects of the clinical academic workload on an LTFT commitment. Research may be even more likely to be squeezed into unpaid time than it is for full-timers, resulting in less visible output (publications), which are more critical than teaching performance for promotion. Part-time work may be more easily available on the parallel NHS track.
6.65.2 Career breaks of any length from clinical practice and teaching are likely to pose re-entry problems, requiring updating of skills and knowledge, but it will often be possible to resume previous work that has perhaps been covered by a temporary replacement. Clinical research, however, tends to have fast-moving, competitive trajectories created by project and grant application deadlines, fixed-term contracts, the effect of new research findings on programmes etc, which can make return to the ‘same’ work, whether as an individual researcher or a team member, much more difficult.

6.65.3 It is often said that women in clinical academia (and in academia generally) are more likely than their male peers to focus on teaching and administration rather than research and publishing, to the detriment of their promotion prospects. If this is so, and good recent data on UK clinical academics’ publication patterns are lacking, then it would be in line with the predictions of the matrix in Chapter 4. The course of research projects and the workload involved is generally much less predictable than for teaching or administration.

6.65.3.1 These difficulties in combining research careers and flexible working are recognised in some special fellowships and some research funding schemes. But it is perhaps not surprising that a small survey of clinical professors conducted for the Medical Schools Council found that, although 61% of the 76 female respondents had taken at least one career break, the average number of breaks was 1.4 per person, and the average length of breaks was only 7.4 months (Medical Schools Council 2007).

6.65.3.2 Paediatrics provides an example of a field with rising numbers of female trainees and consultants generally, but declining numbers of clinical academics since 2000 (Aldridge and Fitzpatrick 2008). Further research into this decline might shed light on any particular issues that increased entry of women into a specialty raises for the academic side of that specialty.

6.66 In summary, it seems likely that, while many of the current disincentives to entering or remaining in academic medicine will affect both sexes, there are particular problems faced by some women. The available evidence indicates that women have been both less likely to take up clinical academic research positions than their male peers, and less likely to stay in such careers.

6.67 Good longitudinal information about attrition and progress is, however, in short supply, and analyses of the relatively low number of women in senior leadership positions in clinical academia need to take account of the differences in career structure and specialty balance between academic medicine and the NHS.

6.68 However, if there is, as many would argue, a recruitment and retention problem, and a potential leadership deficit in academic medicine, these cannot be directly attributed to the increased entry of women into the profession.
Appendix 1  Steering Group members and seminars attendees

Members of the Women and Medicine Research Steering Group

Jane Dacre* (Chair)

Carol Black*  Rebecca Fitzgerald
Elizabeth Breeze  Shelley Heard
Paul Coombes*  Janet Husband
Helena Cronin*  Gill Markham
Linda de Cossart  Cally Palmer
Paul Deemer  John Williams*

Susan Shepherd (Secretary)

*Members of core steering group. Together with Dr Mary Ann Elston (researcher), members of the core steering group were present at the consultation seminars.

Seminar on 25 January 2008

Clinicians and researchers.

Dame Carol Black  Gill Markham
Rebecca Fitzgerald  Jean McEwan
Charlotte Gascoigne  Neena Modi
Patricia Hamilton  Iain Robbe
Shelley Heard  Trudie Roberts
Anita Holdcroft  Sian Thomas
Celia Ingham Clark  John Williams

Seminar on 5 February 2008

Clinicians and researchers.

Janet Askham  Ian Lauder
Elizabeth Breeze  Clare Lyonette
Celia Davies  Scarlett McNally
Paul Deemer  Vicky Osgood
Tania Fisher  Sarah Payne
Fiona Godlee  Katie Petty-Saphon
Roger Jowell  Deborah Sharpe
Sue Kilminster  Bonnie Sibbald
Ellen Kuhlmann  Katherine Wolff
Seminar on 9 April 2009
Medical students from the School of Medicine, Cardiff University, under the supervision of Ian Robbé, Clinical Senior Lecturer.

Andy Carson-Stevens
Chris Chalkin
James Cragg
Catherine Esseen
Abigail Frank
Jo Glover
Russel Hathaway
Laura Jarvis
Charlotte Jenkins
Max Johnston

Kiran Kandola
Elliot King
Jamie King
Cesca Markey
Alec Thomas
Hannah Thomas
Adam Tyler
Charlie Walker
Natalie Webber
Emma White

Seminar on 11 April 2008
Representatives from professional groups other than medicine.

Sarah Churchman
Dimitra Darambara
Laura Empson
Mrs Susan Evans
Jenny Gallagher
Tamara Gorodnichev

Judith Husband
Gina Jennings
James Mountford
Nicky Paull
Clare Whitelam
Sarah Willis
Appendix 2  Organisations and individuals contacted

The following institutions were contacted directly for information or other assistance in the course of the project.

British Association of Medical Managers
British Medical Association
College of Emergency Medicine
Conference of Postgraduate Medical Deans
Faculty of Dental Surgery
Faculty of Occupational Medicine
Faculty of Pharmaceutical Medicine
Faculty of Public Health Medicine
General Medical Council
Higher Education Statistics Agency
Joint Committee for Higher Surgical Training
London Deanery
Medical Schools Council
Medical Women’s Federation
NHS Information Centre
NHS Workforce Review Team
Postgraduate Medical Education and Training Board
Royal College of Anaesthetists
Royal College of General Practitioners
Royal College of Obstetricians & Gynaecologists
Royal College of Ophthalmologists
Royal College of Paediatrics and Child Health
Royal College of Pathologists
Royal College of Physicians of Edinburgh
Royal College of Physicians and Surgeons of Glasgow
Royal College of Psychiatrists
Royal College of Radiologists
Royal College of Surgeons (of England) and Specialist Societies
Royal College of Surgeons of Edinburgh
Royal College of Veterinary Surgeons
Universities and Colleges Application Service
Women in Surgery, Royal College of Surgeons
Workforce Directorate Analysis Team

In addition to those acknowledged at the beginning of the report, and those who attended the seminars, as listed in Appendix 1, the following individuals also provided additional information, translated material or contributed in other ways to the research.

Professor O Aasland University of Oslo, Norway
Professor I Bourgeault McMasters University, Canada
Dr T Fedorova St Petersburg, Russia
Ms C Gascoigne Consultant for Medical Women's Federation, UK
Professor J Grant Open University, UK
Dr M Hann University of Manchester, UK
Dr J Harden Napier University, UK
Andy Knapton NHS Workforce Review Team
Dr E Kuhlmann Bath University, UK
Dr C Lyonette City University, UK
Dr N le Feuvre University of Toulouse, France
Dr H Maisonneuve Director, Continuing Medical Education, France
Professor J Parry University of Birmingham, UK
Professor K Purcell University of Warwick, UK
Professor E Riska Abo Akademi, Finland
Professor P Romanov SPR, Moscow, Russia
Ms K Woolf University College, London, UK
Dr R Valsecchi University of Greenwich, UK
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Department of Health (2008a) *High quality care for all: NHS next stage review final report.* London: DH.

Department of Health (2008b) *A high quality workforce: NHS next stage review.* London: DH.


Women and medicine


