

Developing a Modern Surgical Workforce

A REPORT FROM
THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

JANUARY 2005

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Authors

AEB GIDDINGS, FRCS
J CRIPPS

ENDORSED BY:

The Association of Surgeons of Great Britain and Ireland
The British Orthopaedic Association
The British Association of Urological Surgeons
The British Association of Otorhinolaryngologists – Head and Neck Surgeons
The British Association of Oral and Maxillofacial Surgeons
The British Association of Plastic Surgeons
The Society of Cardiothoracic Surgeons of Great Britain and Ireland
The Society of British Neurological Surgeons
The British Association of Paediatric Surgeons
Welsh Assembly Government



The Royal
College
of
Surgeons
of
England

Published by The Royal College of Surgeons of England
Registered Charity No. 212808

35-43 Lincoln's Inn Fields
London WC2A 3PE
<http://www.rcseng.ac.uk>

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First published 2005
ISBN 1-904096-01-8

Designed and typeset by Sainsbury Laverio Design Consultants,
London, UK

Printed by HOBBS The Printers, Brunel Road, Totton, Hampshire,
SO40 3PE, UK

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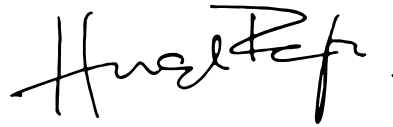
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Foreword

The College's prime responsibility is the improvement of surgical standards in the service delivery of the NHS. It is our policy that the service should be delivered by consultants within a multiprofessional team. Our 2001 report *The Surgical Workforce in the New NHS* demonstrated that we did not have a sufficient number of consultants. Since then there has been expansion but now even more are required because of new technologies, new treatment opportunities and the increased demands of training and education. This report, therefore, looks particularly at the best use of the existing surgical workforce and other factors of infrastructure, support, investment and working conditions that facilitate service delivery and the training of the future surgical workforce.

This College believes that patient safety must be at the centre of healthcare provision. There are many on-going policy directives and new proposals for changes to the way that surgical services are delivered. Such changes can only be made by treating workforce planning, service design and configuration and new ways of working as a whole and by ensuring sound professional and managerial leadership in order to produce effective team working within surgical units.

I am delighted to present this report to you. It will contribute to the College's strategic aims of engaging with fellows and members and a wider audience, and of promoting the highest standards of surgical care for patients. The report is intended to be dynamic – regular updates will be made to the College website area on workforce and you may contact the College's workforce unit by emailing workforce@rcseng.ac.uk



Hugh Phillips DL
President

Executive Summary

1. The Royal College of Surgeons of England and the specialist associations exist to set and improve standards of surgical care to patients.
2. Modern surgical care must be delivered by consultant surgeons within a multiprofessional team.
3. There must be a sufficient number of consultants to meet the increasing need for service, education, training and professional development of surgeons.
4. Consultant surgeons must be grouped in clinical networks of sufficient size to provide safe emergency and elective care, and appropriate local services.
5. Consultant surgeons must be employed under conditions that will attract the widest range of doctors to the permanent surgical workforce.
6. Academic surgeons have a key role to play in enhancing scientific standards and research, but at present their recruitment and resources are seriously deficient.
7. Staff and associate specialists are, at present, essential to maintain the service and require an appropriate career structure.
8. The productivity of surgical teams can be improved by extending the roles of other professionals within the team.
9. Surgeons in training should not undertake unsupervised service work to the detriment of their training opportunities. They should not be relied upon to support surgical rotas, particularly at night.
10. There must be a recognition of the time commitment required of consultant surgeons to provide increased workplace training and the subsequent effects on service delivery.
11. Improved facilities and better methods of working will be required to provide an efficient and cost effective service to patients.
12. The surgical profession must engage with government and the Departments of Health to develop new ways of training and of service provision. The rapid development of surgical knowledge and technology requires a more responsive and versatile training process. A whole-systems approach to training is needed in order that the talents of all members of the surgical team are effectively deployed.

In order to deliver the best surgical service to patients and effective training to the workforce, more consultant surgeons are required. Expansion will require significant investment over time. Meanwhile there is scope to improve the effectiveness of existing surgical staff by strengthening support structures and enhancing multidisciplinary team working

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PART ONE –

Making the Best Use of the Surgical Workforce

1. Introduction

The aim of this document is to build on the College's 2001 publication *The Surgical Workforce in the New NHS*, which was the first comprehensive professional census of surgery. It was well received by the profession, the government and workforce planners.¹

This report presents the core views on workforce matters in 2004 of The Royal College of Surgeons of England, the nine surgical specialist associations and specialist advisory committees (SACs). The 2001 publication explained the issues surrounding the planning of the surgical workforce, the infrastructure required and the challenges involved, many of which remain today.

The purpose of this document is to update the 2001 publication and to discuss recent policies affecting workforce planning. Estimates of future requirements for surgeons in each specialty are provided in Part Two together with a discussion of the potential confounding issues – of which there are many.

The Royal College of Surgeons of England represents fellows and members in England and Wales and works with the Department of Health for England (DH) and the Welsh Assembly Government. Whilst the difficulty in planning the surgical workforce across the national boundaries of the UK is recognised, the planning structures for both Ireland and Scotland are significantly different and this document cannot cover those jurisdictions. It is accepted that both Ireland and Scotland may produce a surplus of certificate of completion of specialist training (CCST) holders who could fill vacant posts in England and Wales and this can distort workforce planning.

This document is intended to assist those responsible for the development of services, particularly workforce planners and advisers, Workforce Development Confederations (WDCs) and Strategic Health Authorities (SHAs) in England, the Human Resources Directorate of the Welsh Assembly Government in Wales and those concerned with the training, development and employment of surgeons.

Both government and the surgical profession share a desire to have a consultant-delivered service. Government has recognised that this requires more consultants. The case for the expansion of the numbers

of consultants has been promoted by the College and specialist associations for more than a decade, but it was not until the publication of the DH's *NHS Plan* in July 2000 that this fundamental need was recognised by government.² The DH is now also committed to increasing the capacity of the NHS by a variety of short-term methods, including international recruitment and the endorsement of new stand-alone surgical facilities. The bedrock of UK surgery however remains the high standards and lifelong commitment of UK-trained consultants in surgical practice. Whilst care is increasingly being delivered by a variety of professionals, consultant surgeons have a unique personal, legal and moral duty for patient care and safety. That duty can be fulfilled only with the support of a multidisciplinary team.

Surgery has developed very rapidly since the 1980s. Modern surgical methods are better but often more complex, higher risk and more time consuming than previously. Lifelong training and development for all surgeons is required to maintain existing high standards. The traditional apprenticeship-based model of training, requiring many hours of service over many years, is unsuitable for this rapidly changing world and particularly difficult for the large number of aspiring surgeons who come from different backgrounds or who have family or other competing responsibilities.

Increasing subspecialisation, and the requirement for trainees to increase the time spent in training rather than providing service, coupled with the requirement for them to work shorter hours under the European Working Time Directive (EWTB), means that more consultant surgeons are required to ensure that adequate training is provided and that service needs are met.

Surgery requires special consideration within the workforce planning arrangements of the DHs. It is a craft-based specialty, and requires technical, professional and judgemental skills. The training of surgeons consequently requires a different structure from many other medical specialties.

This report deals with a wide range of issues faced by the College and the profession. College policy, views and

developments change rapidly. Therefore, it is intended that the report, although it will be printed, will become a 'living resource', with a web area dedicated to providing updates for fellows and members on issues affecting the surgical workforce.

It is also intended that this report will form a platform for future areas of work focusing in turn on workforce planning, education and training (including the further development of the professional agenda), and enhanced service delivery.

2. Background

In the UK, surgeons are trained to the highest standard and are monitored by the royal colleges and specialist associations.

There are nine surgical specialties:

- > general surgery (encompassing vascular surgery, upper gastrointestinal surgery, breast surgery, endocrine surgery, colorectal surgery, transplantation surgery, military surgery and the general surgery of childhood)
- > trauma and orthopaedic surgery (T&O)
- > urological surgery
- > otorhinolaryngology, head and neck surgery
- > oral and maxillofacial surgery (OMFS)
- > plastic surgery
- > cardiothoracic surgery
- > neurosurgery
- > paediatric surgery

The specialties are listed in order of current numbers of consultant surgeons in England and Wales. These specialties have evolved in response to the need for service specialisation in the NHS.

Workforce planning in England is the responsibility of the Workforce Numbers Advisory Board (WNAB). The WNAB is advised by the Workforce Review Team (WRT), which is responsible for coordinating and collating the range of information and views on workforce planning. In Wales, responsibility for trainee numbers planning lies with the Human Resources Directorate of the NHS Directorate (NHSD) within the Welsh Assembly Government. Government is advised by the Medical and Dental Workforce Development Expert Advisory Group (MDWDEAG).

Over recent years, The Royal College of Surgeons of England and the surgical specialist associations have worked with the WRT in England to plan workforce numbers for the future. This relationship has proved fruitful, both in terms of sharing views and negotiating

workforce requirements for the surgical specialties. Discussions have also been taken forward in Wales to improve communications on workforce issues. Professional and College input to the planning process is delivered through surgical members of the MDWDEAG and particularly by the postgraduate deanery advised by the Welsh Specialist Training Committees (STCs).

Workforce planning is important but cannot be exact. It takes more than a decade to produce a consultant surgeon from a newly qualified doctor, and whilst there are active proposals to shorten this time and to enhance the efficiency of technical training, the essential intuitive skills that underpin a surgeon's professional judgement cannot be acquired without both educationally-enhanced awareness and a long period of experience in the job. Many surgical conditions, especially emergencies, are relatively rare and it is only by extensive experience that safe competence can be acquired.

There are many challenges facing surgery including EWTED, the Modernising Medical Careers (MMC) initiative, the implementation of the new consultant contract and job planning process, international recruitment, and appraisal and revalidation processes, all of which have wide-ranging workforce implications. These are important and timely initiatives but implementing them will not be without difficulty. Other initiatives, such as the introduction of independent sector treatment centres (ISTCs) in England, are contentious and the College has concerns about how standards of care, service and training are to be maintained.

There are fewer surgeons per capita population in England and Wales than in most of the developed world. The numbers of service grade doctors, particularly staff and associate specialist (SAS) doctors and senior house officers (SHOs) have recently increased to provide a major source of service delivery and out-of-hours cover. These posts may not offer the required training and career progression needed by young doctors and the duties they perform could often be provided by other professional staff such as surgical care practitioners. Whilst the College supports the need for the expansion of the surgical workforce, it must be recognised that

investment must also be made in the supporting staff, facilities and resources to enable the existing surgical workforce to carry out their duties effectively and safely. There is evidence that the existing consultant surgeon workforce is frequently unable to deliver to their full potential due to lack of operating time, beds and support facilities. In some specialties improved strategic planning could raise standards and increase productivity.

2.1 The NHS Plan – England

The *NHS Plan*,² launched in July 2000 promised:

- > 7,500 more consultants in England by 2004;
- > an additional 1,000 specialist registrars (SpRs) in England by 2004; and
- > an increase of 1,000 medical students across the UK by 2002.

So far, only the target for the expansion of medical students appears to have been met.

The investment in the additional SpRs has been approved but not all are in post. The number of SpRs has been increased but there remains a large number of qualified

doctors with surgical aspirations who have no prospect of entering training for a consultant post due to a lack of National Training Number (NTN) opportunities.

Even with strenuous efforts to recruit more consultant surgeons from other countries, there remains a serious shortfall in the numbers of consultants required by 2010. The deficiency may be worsened by the additional pressures of EWTD, the new consultant contract and changes to working practices.

2.2 The Welsh Manifesto

The Welsh Assembly Government committed to increasing the number of doctors by 410 (across all specialties) at the last election.

2.3 The Surgical Workforce in the New NHS

In November 2001, the College produced *The Surgical Workforce in the New NHS*,¹ this stated:

The inescapable conclusion is that many more trainees are required as soon as possible and more consultants will be required to train them.

2.4 Summary of Specialty Data in *The Surgical Workforce in the New NHS*¹

TABLE 1 Summary of data and requirements from *The Surgical Workforce in the New NHS*¹

Speciality	Consultant numbers 2001 (DH figures)	Senate of Surgery target	Shortfall on Senate target, 2001	Numbers due to finish training by 2009 (DH figures)	NHS Executive statistics requirement by 2009 (predicted in 2001)	Likely shortfall (numbers finishing training vs NHS requirements)	Estimated number of National Training Numbers by 2004
General surgery	1,331	2,080 (1:25,000)	749	1,919	2,165	246	822
Trauma and orthopaedic surgery	1,199	2,080 (1:25,000)	881	1,741	2,075	334	817
Urological surgery	382	650 (1:80,000)	268	613	703	90	216
Otorhinolaryngology	448	693 (1:75,000)	245	502	745	243	213
Oral and maxillofacial surgery	243	346 (1:150,000)	103	287	499	212	115
Plastic surgery	188	520 (1:100,000)	332	286	360	74	153
Cardiothoracic surgery	198	286 (1:182,000)	88	300	465	165	211
Neurosurgery	139	208 (1:250,000)	69	202	228	26	129
Paediatric surgery	104	173 (1:300,000)	69	130	147	17	69
Totals	4,232	7,036	2,804	5,980	7,387	1,407	2,745

The numbers are given as headcount and relate to England only
Source: *The Surgical Workforce in the New NHS*¹

3. The Current Situation

3.1 Demand for Surgical Services

The data in **TABLE 2** show the steady increase in finished consultant episodes (FCEs) across most specialties.[†]

The data in **TABLE 3** demonstrate an increase in waiting times across most surgical specialties. Overall, waiting time for treatment rose by 3% across all specialties except cardiothoracic surgery, where waiting time decreased by 19%.

Waiting lists may be disrupted by the need to meet waiting time targets set in national service frameworks (NSFs).

Waiting times shown in the table are the period between the date of the decision to admit and the eventual admission date.

The numbers in **TABLE 4** demonstrate that the total number of admission episodes in England has risen in all

[†] Hospital Episode Statistics on FCEs and numbers of patients seen are a measure of consultant workload but do not capture the many demands on consultant time. Modern surgery requires increased time for consultants to work with patients, provide advice, develop their service and support and train future surgeons.

TABLE 2 Number of finished consultant episodes by specialty 2000/2001–2002/2003 (England only)

	2000–2001	2001–2002	2002–2003
General surgery *	1,439,702	1,411,558	1,441,682
Trauma and orthopaedic surgery	816,344	828,188	873,718
Urology	597,968	596,592	624,311
Otorhinolaryngology	348,864	334,924	344,327
Oral and maxillofacial surgery	196,396	194,087	199,185
Plastic surgery	189,363	191,165	203,260
Cardiothoracic surgery	68,597	68,748	69,004
Neurosurgery	53,900	55,488	57,474
Paediatric surgery	55,353	54,198	56,086
Total	3,766,487	3,734,948	3,869,047

Adapted from The Department of Health's *Hospital Episode Statistics* (<http://www.dh.gov.uk/PublicationsAndStatistics/Statistics/HospitalEpisodeStatistics/fs/en>)

* Figures for general surgery in many instances include endoscopy and should not be taken as indicative of surgical intervention without further analysis.

specialties except general surgery and otorhinolaryngology (with 0.3% and 1.3% fewer admission episodes, respectively, in 2002–2003 than in 2000–2001).

Emergency admission episodes (via A&E, GP referral etc.) have risen for all specialities except for cardiothoracic surgery and otorhinolaryngology where slight reductions (1% and 0.2%, respectively) in emergency admission episodes were seen. A&E departments with effective medical assessment units (MAUs) or surgical assessment units (SAUs) have a pivotal role in efficient treatment of patients requiring admission and avoiding the unnecessary admission of those who would be better managed by other services. Up to half the patients who are properly assessed may be redirected to a more appropriate service.

Admission episodes from waiting lists rose in all specialties except general surgery and otorhinolaryngology, which were 3% and 1.6% lower, respectively.

The number of day surgery cases increased in all specialties except general surgery, otorhinolaryngology and cardiothoracic surgery, which were 1.6%, 6.3% and 47.7% fewer than in 2000–2001.

TABLE 3 Mean waiting time* (days) by specialty 2000/2001–2002/2003 (England only)

	2000–2001	2001–2002	2002–2003
General surgery	92	95	99
Trauma and orthopaedic surgery	165	170	174
Urology	76	77	78
Otorhinolaryngology	116	129	128
Oral and maxillofacial surgery	80	75	81
Plastic surgery	113	115	119
Cardiothoracic surgery	131	124	106
Neurosurgery	97	105	107
Paediatric surgery	89	92	97
Average of the means	106	109	110

*These figures are not comparable with official waiting list figures.

Adapted from The Department of Health's *Hospital Episode Statistics* (<http://www.dh.gov.uk/PublicationsAndStatistics/Statistics/HospitalEpisodeStatistics/fs/en>)

TABLE 4 Total admission episodes split into emergency, waiting list and day case by specialty 2000/ 2001–2002/ 2003 (England only)

	Total admission episodes			Emergency admission episodes			Admission episodes from waiting list			Day case episodes		
	2000–1	2001–2	2002–3	2000–1	2001–2	2002–3	2000–1	2001–2	2002–3	2000–1	2001–2	2002–3
General surgery *	1,334,034	1,300,721	1,329,438	474,304	469,728	477,149	749,686	706,865	727,791	496,186	474,896	488,070
Trauma and orthopaedic surgery	781,647	789,265	834,429	303,058	305,934	310,297	443,572	444,973	482,754	211,523	210,925	226,468
Urology	568,283	566,257	591,323	67,442	67,398	69,247	363,748	356,139	369,325	338,474	336,833	353,153
Otorhinolaryngology	344,742	330,882	340,240	60,230	59,516	60,077	273,839	259,167	269,310	109,203	102,996	102,729
Oral and maxillofacial surgery	193,799	191,455	196,729	17,277	17,460	18,549	166,506	163,929	167,529	138,286	137,195	142,439
Plastic surgery	185,006	186,848	200,802	48,496	50,219	49,870	121,238	122,406	139,169	86,076	87,274	97,296
Cardiothoracic surgery	56,155	56,745	57,072	5,100	5,101	5,049	44,014	44,534	44,906	2,780	2,227	1,881
Neurosurgery	48,372	49,564	51,867	14,019	14,413	14,062	20,624	21,385	23,443	4,412	4,538	5,485
Paediatric surgery	51,629	50,530	52,782	16,494	16,707	17,298	27,507	27,206	29,110	17,810	17,226	18,283
Total	3,563,667	3,522,267	3,654,682	1,006,420	1,006,473	1,021,598	2,210,734	2,146,604	2,250,337	1,404,750	1,374,110	1,435,804

Adapted from The Department of Health's *Hospital Episode Statistics* (<http://www.dh.gov.uk/PublicationsAndStatistics/Statistics/HospitalEpisodeStatistics/fs/en>)

* A proportion of these admissions may represent endoscopy only.

The numbers in TABLE 5 illustrate an increase in demand for surgical services over the past three years in England.

There are over 12 million FCEs each year. Over 6 million of these are surgical FCEs. The numbers of day-case and ordinary admissions requiring surgery have remained fairly constant at just above 3 million each. However, with the constraints of the EWTD and other confounding factors, maintaining this level of service will be increasingly difficult without greater numbers of consultant surgeons and changes in surgical practice.

3.2 Population Demographics

The ageing of the population has major implications for surgical services and workforce planning. Emergency services and those for treating long-term conditions are stretched to the limit and the burden is increasing. Enhanced resources are required to treat illnesses such as peripheral vascular diseases, gastrointestinal diseases including cancer, prostate diseases, arthritis and fractures in the elderly population. However, it is not only long-term conditions, but also acute illnesses in the elderly that present a challenge to service design and workforce planning. It is often overlooked that the majority of acute surgical admissions are in the elderly in whom the burden of co-morbidity and care is high.³

TABLE 5 Finished consultant episodes – England. Broken down into ordinary (elective and emergency) admissions and day-case admissions

	2000–2001	2001–2002	2002–2003
Ordinary admissions with an operation	3,319,740	3,269,124	3,337,062
Day cases with an operation	3,192,418	3,172,577	3,298,145
Total FCEs with an operation	6,512,543	6,438,185	6,633,981
Total FCEs (surgical and medical)	12,264,677	12,357,360	12,757,656

Adapted from The Department of Health's *Hospital Episode Statistics* (<http://www.dh.gov.uk/PublicationsAndStatistics/Statistics/HospitalEpisodeStatistics/fs/en>)

3.3 Organisation of Services

Responsibility for strategic planning and commissioning of services lies with SHAs and primary care trusts (PCTs) in England, and with local health boards, regional offices and Health Commission Wales in Wales. Each also has a key role in the development of an appropriate workforce. For highly specialised services, such as paediatric cardiac surgery, however, only a national or international perspective will be appropriate in service planning. There is evidence of political reluctance to concentrate services in the smaller number of centres required by this highly specialised work which is now being affected by the constraints of the EWTD and the need to support a minimum of four consultant surgeons working in a team to provide the necessary volume of surgical activity and continuous consultant cover.

In order to provide safe and effective patient care Trusts need to cooperate and contribute to service networks, particularly in the smaller specialties. Although there are differences in population density across England and Wales, the data suggest there is significant duplication of resources in some urban areas in both countries and, as would be expected, major problems in the provision of specialist services to remote communities. Service planning must support the consolidation of specialist serv-

ORGANISATION OF HIGHLY SPECIALISED SERVICES

THE NEED TO CONCENTRATE WORKLOAD, EXPERTISE AND TRAINING OPPORTUNITIES IN FEWER CENTRES
THE PAEDIATRIC AND CONGENITAL CARDIAC SERVICES REVIEW³⁴

The Kennedy report, *Learning from Bristol*,⁴ was published in 2001, but dealt with events over more than the previous decade, clearly identified the important strategic, structural and resource factors responsible for impairing safe service delivery. Attention was also drawn to the crucial role of professional teamworking in maintaining the highest standards. Despite the clear evidence from that exhaustive inquiry and recent recommendations supporting reconfiguration of these specialist units, there has been a reluctance in government to take central decisions that may provoke local controversy despite the fact that the planning of these highly specialised services is beyond the policy reach of PCTs and SHAs.

ices to provide expertise and training whilst developing managed local networks for service delivery.

A recent Association of Surgeons of Great Britain and Ireland (ASGBI) survey suggested that only approximately one-quarter of hospitals served a population greater than 400,000 and that the majority served populations in the range of 200,000–350,000. It is likely that service needs for highly specialised conditions will only be appropriately met by concentration in very large hospitals. For the majority of hospitals serving 200,000–350,000 people, a comprehensive local emergency service will be required, for example, in general surgery and orthopaedics, but smaller services such as vascular surgery may need to be provided by regional networks.

The College and specialist associations strongly urge service planners to take into account evidence-based recommendations for the configuration of safe surgical services, not only in the interests of patient safety, but also for the efficient use of skilled staff. Specific guidance is available from the College and specialist associations.

3.4 Joint Responsibility for Workforce Planning in England and Wales

The WRT of the DH is responsible for coordinating input to the Workforce Numbers Advisory Board (WNAB) for all healthcare professionals in England. The WRT works in conjunction with Care Group Workforce Teams (CGWTs), to examine:

- > the structure, balance and geographic distribution of the whole healthcare workforce;
- > healthcare workforce supply and demand, taking account of present and future healthcare workforce training needs; and
- > models for projecting future healthcare workforce requirements and supply.

The WRT operates an annual cycle of review meetings in which workforce representatives from the College, SACs, specialist associations and CGWTs plan and discuss how best to meet service requirements.

Using a dedicated planning proforma, the WRT looks at:

- > Existing SpRs by their expected CCST date, at likely delays in this process, and the resulting number of additional consultant surgeons.
- > The numbers likely to enter the specialty via the Article 14 (Specialist Training Authority (STA) and Postgraduate Medical Education and Training Board (PMETB)) routes, which will allow any appropriately qualified individuals to apply to have their training, qualifications and experience assessed as being equivalent to that required for entry to the specialist register. This would include Type 2 trainees, staff and associate specialists, and overseas doctors.
- > Likely recruitment from overseas, from doctors returning to work after a break, from staff and associate specialists qualifying for the specialist register and assumed rejoinders.
- > Numbers likely to leave the specialty, either through retirement, or as a ‘younger leaver’ (ie those doctors who are aged under 55 and leave the profession – perhaps to take up roles as deans, medicolegal advisors, etc.).
- > The effect of new SpRs (via NTN allocations).
- > Competence-based assessment versus time-based assessment and drop-out rates.

This proforma helps to identify potential consultant surgeons and when they will be trained.

The WRT works closely with the CGWTs of cancer, children, older people, coronary heart disease, long-term conditions, etc. The CGWTs provide a national perspective on the balance of skills required in healthcare teams for particular patient groups.

Similar processes are undertaken in Wales within the NHS of the Welsh Assembly Government, supported by professional and NHS managerial advice.

There are obvious difficulties in planning the surgical workforce six to ten years in advance. Close working relationships have been established between the College,

the specialist associations, SACs and the WRT; and the College seeks to extend that dialogue to all stakeholders including, for England, the PCTs and SHAs and, for Wales, the Welsh Assembly Government.

There are many factors that hamper accurate and timely planning and these are discussed below.

3.5 NTN Allocations 2003–2004 (England) and College Activity

Previous concerns that the overall projected increases in consultant numbers to 2009 were weighted significantly against surgical specialties appear to have been, at least partly, allayed following the 2003–2004 NTN allocations from WNAB in England. Surgery received a significant boost in training numbers for one training cycle only (six years):

- > 48 from central funds;
- > 386 by re-mapping local funds;
- > 700 by conversion of existing SHO posts.

In October 2003, the College wrote to all its fellows and members outlining these opportunities and providing advice on bidding for additional SpR posts.

The College received a very good response, and was able to provide consultants with guidelines on how they might obtain educational approval, negotiate with their Trust, and, where necessary, secure local funding for additional NTN posts.

However, the feedback received from fellows and members also highlighted a number of recurring problems encountered in the bidding and implementation process. These included poor communication, lack of central funding, high levels of bureaucracy and confusion over areas of responsibility. These issues were brought to the attention of key stakeholders (DH, WRT, postgraduate deans, JCHST, etc.) in an attempt to resolve such matters before the next round of NTNs were allocated.

3.5.1 NTN Implementation for 2003–2004 in England

Department of Health centrally funded posts were readily taken up – all 48 posts offered were implemented.

Locally funded posts were well utilised too; of 386 surgical posts offered, 371 were implemented.

However, from the 700 posts offered via conversion of existing SHO posts, only 45 were taken up.

There are several reasons for this low implementation level:

- > Basic surgical training posts are part of regional, multispecialty rotations and as such are not ‘owned’ by any particular specialty.
- > SHOs of SpR calibre are heavily relied upon for service commitment. Rebranding these SHO posts as SpR posts would, in effect, be exchanging a service post for a training one – something which many units are unwilling to do.
- > In smaller surgical specialties such as paediatric surgery, a relatively low number of SHOs rotate through as basic surgical trainees, therefore offering little scope for conversion of SHOs to NTNs.
- > There were also issues with the lack of flexible training opportunities and this may have discouraged some trainees from embarking on specialist training.

3.6 NTN Allocations 2004–2005 and 2005–2006 (England)

As mentioned above, the boost in the English 2003–2004 allocations were for one training cycle only. In 2004–2005 and 2005–2006, new NTN opportunities are vastly reduced (see TABLE 7). SpR opportunities in 2005–2006 will be heavily biased towards creating additional opportunities in primary care. The WRT, however, has confirmed that unimplemented locally funded or conversion NTN posts from 2003–2004 could be carried forward for implementation in later years.

3.7 Workforce Planning in Wales

In Wales NTNs are reviewed annually at the October meeting of the SpR subgroup of MDWDEAG and ‘floors and ceilings’ are set for one year. These are based on the annual trust workforce plans for consultant expansion compared with deanery data for numbers reaching CCST by year.

TABLE 6 NTN allocations to and implemented by the surgical specialties in 2003–2004 (England)

Specialty	Centrally funded allocated	Centrally funded implemented	Locally funded allocated	Locally funded implemented	Conversion of existing SHOs implemented
General surgery	6	6	200	203	18
Trauma and orthopaedic surgery	4	4	90	90	7
Urology	2	2	20	20	8
Otorhinolaryngology	5	5	42	30	4
Oral and maxillofacial surgery	8	8	Nominal	1	0
Plastic surgery	12	12	13	6	3
Cardiothoracic surgery	5	5	Nominal	0	2
Neurosurgery	0	0	15	15	3
Paediatric surgery	6	6	6	6	0
Total	48	48	386	371	45 (of 700 allocated)

Source: Workforce Review Team, July 2004 (Personal communication)

Over the period 2002–2005 surgical NTN in Wales also grew with 48 centrally funded posts being made available, as well as in trauma and orthopaedics where four new NTN posts were funded per year from 2003–2004 for three years (12 NTN in total).

TABLE 7 NTN allocations for 2004–2005 and 2005–2006 (England)

Specialty	2004–2005	2005–2006
General surgery	0	0
Trauma and orthopaedic surgery	0	0
Urology	0	0
Otorhinolaryngology	0	0
Oral and maxillofacial surgery	2	1
Plastic surgery	0	1*
Cardiothoracic surgery	0	0
Neurosurgery	0	0
Paediatric surgery	2**	0
Total	4	3 (including cleft lip and palate)

*Head and neck surgery

** Paediatric urology

There was one NTN in cleft lip and palate for 2005–2006

Source: Workforce Review Team, July 2004 (Personal communication)

Welsh fellows and members of the College will recognise there are special issues in planning and managing the surgical workforce in Wales that appear to have created particular service and training difficulties.

The 2003–2004 expansion in English NTN was not mirrored in Wales – even though Wales was clearly facing the same challenges as England in implementing EWTD, working to national aims and objectives, and in planning the necessary expansion in consultant numbers. Wales has particular difficulties because of the changes in central management of the Welsh Health Services, devolution of funding control to local health boards, the geographically remote and sometimes small size of hospital units, and the distribution of facilities for early and advanced specialty training.

Work is on-going to ensure that surgical lines of communication with the Welsh Assembly Government are in place and effective.

The Welsh Board of The Royal College of Surgeons in England will use its position on the Academy of Royal Colleges in Wales and various other routes to communicate with the Welsh Assembly Government.

4. Issues Affecting Workforce Planning in England and Wales

4.1 Elective, Emergency and Day-case Surgery

4.1.1 Elective Care

Consultant surgeons have a relatively low allocation of elective operating lists by comparison with surgeons in similarly developed countries. This may well explain some of the apparent productivity issues in the NHS both in England and Wales.

Balancing the pressure to increase throughput and taking the time to train the surgeons of tomorrow, coupled with the requirements of EWTD, has meant increasing pressure from both consultants and trainees to have dedicated training theatre lists in order to train junior doctors properly. However, Trusts must recognise that this will inevitably be at the cost of some service output.

It is College policy that surgeons must be free of elective commitments when working on-take.

4.1.2 Emergency Care

The Senate of Surgery document *Reconfiguration of Surgical, Accident and Emergency and Trauma Services in the UK*⁵ supports the view that, whilst retaining local access to surgical services is important, there is a limit to the services which can be safely and cost-effectively provided locally. Reconfiguration of services is often desirable but is politically sensitive.

The College supports the government's aim for emergency care to be delivered as locally as possible but this must not be at the expense of quality of care and patient safety. There is evidence that not all emergency patients are best served by A&E departments and significant work is in progress to identify and provide a range of services to meet these needs.⁶ Therefore, if safe emergency and elective surgery can only be delivered in larger hospitals, then this is where the services should be concentrated.

Following the Wanless report on the Welsh NHS,³⁵ there have been suggestions that the emergency services should undergo reconfiguration, but previous experience in other regions has shown this to be a controversial and protracted process. It is hoped that the availability of

alternative services will create more opportunities for constructive change.

In meeting the demand for medical emergencies physicians have proposed a focused emergency consultant grade. This may help to avoid the risk of too narrow a focus from the increasing specialisation of consultant practice.⁶ The advantages of an equivalent surgical consultant grade should be examined.

4.1.3 Day-case Surgery

It is confusing to refer to day surgery as it implies the patient will enter and leave hospital on the same day. In some hospitals patients may actually stay for a maximum of 23 hours and still be classed as day cases. Appropriate facilities and staffing levels must be tailored to local practice.

There is a wide variation in the selection and proportion of patients who are offered day surgery. If the benefits of day surgery are to be maximised, hospital-specific policies need to be developed to ensure safe and consistent practice.

The Audit Commission and the British Association of Day Surgery recommends a list of procedures which could normally be undertaken as day-case surgery and provides guidelines on their management.⁷

The increase in day-case surgery is undoubtedly of benefit to patients and the NHS alike. However, to ensure patient safety, more consultant surgeons are required to select cases for day surgery and oversee the lists. Day surgery can provide excellent opportunities for surgical trainees. In many hospitals, there is a need to increase day-care capacity.

4.2 European Working Time Directive

The progressive implementation of the EWTD has had, and will continue to have, profound effects on the delivery and continuity of acute surgical care, and on the training of future surgeons.

Since August 2004, junior doctors and consultants have been required to comply with an overall average weekly working time limit of 58 hours and a series of requirements for rest. The legal responsibility for compliance

with the directive lies with employers. If the EWTD were simply a working-time issue, then most, if not all, junior NHS doctors would be able to comply. The New Deal and junior doctors' employment contract limits their working time to 56 hours per week. However, there are major issues with both the SiMAP and Jaeger rulings from the European Court of Justice.

4.2.1 SiMAP⁸

The European Court of Justice has ruled that doctors who are resident on-call but sleeping should have that time classed as 'working time'. Consequently, current resident on-call working patterns will, generally, not be compatible with the EWTD from 2004 and a move towards shift patterns or redistribution of out-of-hours work to the working day must follow.

By initiatives such as the *Hospital at Night* scheme,⁹ some hospitals have been able to avoid using trainees to cover service at night. Working a week of nights is disturbing in physiological terms and is inefficient. Trainees should be trained during the working day and in the evening. Preliminary findings suggest that full shift working has an extremely damaging effect on the scope for the provision of training.¹⁰

4.2.2 Jaeger

The Jaeger ruling¹¹ builds on the judgement of SiMAP in defining 'working time' on-call arrangements. It states that compensatory rest should be taken as soon as possible after the end of the working period.

4.2.3 Implications for Surgery

The EWTD, alongside the SiMAP and Jaeger judgements, is likely to decrease significantly the hours available for training. Streamlined specialist training will reduce training time further. An example of the magnitude of this effect is given by considering a new EWTD-compliant rota that many SpRs are working in general surgery, during which they are obliged to provide internal cover and a week of nights on a 1:7 rota. This reduces the available daytime elective surgical lists for training from 26 days to 18. Holidays and the requirement to complete compulsory training courses will

reduce these further. Assuming that each operating list consists of three major elective cases such a trainee would have access to only 45 of the 78 cases which should be available in a six-month period.

It is clear that all the potential training time must be used primarily for training and not for unsupervised service, particularly at night.

Consultant surgeons will be required to provide more service cover during unsocial hours. This will reduce their availability during the day and in turn will require further expansion in consultant surgeon numbers. These changes will need to be recognised by significant alterations to job plans and working practices, particularly team working.

Implementing EWTD requires an innovative approach to delivering services – especially those requiring 24-hour care (eg high-dependency units, A&E, paediatrics and obstetrics), and smaller district general hospitals (ie those serving a population of less than 200,000) or rural hospitals. Many solutions have been proposed (for example, the *Hospital at Night Project*, utilising an out-of-hours medical team and nonmedically qualified practitioners). Several of these solutions have significant potential to reduce unreasonable service demands on trainees and consultants. However, the College believes surgery requires special consideration under EWTD because:

- > Cross-cover is not always possible, particularly in highly specialised areas of practice (eg paediatric surgery).
- > Cross-cover at SpR level does not contribute to specialist training, and may reduce patient safety.
- > Full-shift rotas have profoundly damaging effects on the opportunities to train junior surgeons.
- > If consultant surgeons move to full shift working, or working during the 'twilight' hours in order to maximise training opportunities for juniors, this will have an effect on their elective capacity as they will be less available for elective and emergency work during the day.

- > Out-of-hours medical teams and the *Hospital at Night* concept may be inappropriate for the smaller specialties with 24-hour acute care responsibilities.

At the time of going to press, the European Commission had recognised the difficulties that the SiMAP and Jaeger judgements were causing many European countries and had made proposals to the European Parliament for, amongst other issues, the creation of two new definitions 'on-call time' and 'inactive part of on-call'. The proposal has been passed to the European Council and Parliament who have to agree the new legislation under the co-decision procedure. No timescale has been given for this, although it is likely that legislative changes could not be enacted until at least 2006.

The EWTD has applied to consultants since 1998. However, many have chosen to opt-out, although there is evidence to suggest that few of them have done so on a formal basis. It remains to be seen whether consultants will continue to work over and above their allotted hours after their programmed activities have been negotiated under the new consultant contract, and what effect this might have on service and training.

The importance of EWTD as health and safety legislation is recognised but the College believes that major changes are required if implementation is to be achieved whilst also maintaining standards of care and training.

The College has produced both an interim report¹² and a position statement¹³ on the effects of EWTD. The College also has a comprehensive web area dedicated to EWTD.

4.2.4 EWTD NTN's

In order to assist with compliance, the DH offered a number of additional NTN's to Trusts, so called EWTD NTN's.

Trusts were required to prepare a business case to identify the number of EWTD NTN's they required and to have this business case agreed by their SHAs. A total of 218 additional NTN's were requested in the surgical specialties (see TABLE 8). Of these 77 are either imple-

mented or are expected to be implemented by end of November 2004. The implementation of the remaining posts will be dependent on a combination of the following:

- > obtaining educational approval;
- > recruiting a suitable surgeon; and
- > release of funding (for example, the EWTD NTN post may be created by converting a trust doctor post, however this post cannot be converted until the contract for the doctor in this post expires).

The SACs expressed concern over these additional NTN's. They considered that educational approval was being sought for posts which were essentially service oriented. Such posts may not fulfil SAC requirements for training opportunities and, therefore, may not attract educational approval. Thus significantly fewer EWTD NTN's may actually be implemented.

The Welsh approach has been to make service judgements on EWTD requirements and then to collaborate with the deanery and STCs to decide whether any, or all, new posts could be utilised for training.

TABLE 8 Surgical NTN's requested by Trusts to assist with EWTD compliance (England)

Specialty	NTN's requested for EWTD compliance	EWTD posts expected to be implemented by end of November 2004
General surgery	79	32
Trauma and orthopaedic surgery	91	33
Urology	6	0
Otorhinolaryngology	14	6
Oral and maxillofacial surgery	3	1
Plastic surgery	11	1
Cardiothoracic surgery	4	0
Neurosurgery	10	4
Paediatric surgery	4	0
Total requested	218	77

Source: Workforce Review Team, November 2004 (Personal communication)

4.3 Modernising Medical Careers

Traditionally, standards of consultant surgeon practice in the UK have been high but at the expense of a long period of apprenticeship-based training. There have been too few consultants to provide the level of service and training required. There is potential for the improvement of services by improving the appropriateness of training (including nontechnical skills), the redesign of strategic service planning and the mixture of specialties which make up local and regional services. The College has a duty to ensure patient safety and to define the standards required to deliver the best surgical care possible.

Historically, increasing service demand, especially out of hours, has been met by the poorly-managed expansion of the SHO grade, which now serves to provide a large service commitment with very limited training benefit and little chance of promotion to specialist training. Of even greater concern is the lack of any validated method by which these experienced SHOs can be ranked in the competition for higher surgical training opportunities. Selection at present is regional, arbitrary and widely seen by trainees as unfair.

The DH document *Unfinished Business*¹⁴ focused on reforming the SHO grade, and was extended to include all medical training grades. The result is the MMC initiative.¹⁵ MMC aims to ensure the progressive movement of trainee doctors from graduation to consultant level, with a streamlining of specialist training wherever appropriate.

It is proposed that all graduates leaving medical school will enter a two-year foundation programme focused on developing key competencies, and core clinical and generic skills such as communication, team-working, IT and, most importantly, care of the critically ill patient. At the end of the two foundation years, trainees will choose their broad specialty area (eg medicine or surgery) and attempt, by competitive entry, to obtain a place on a specialist training programme (likely to be of 6–8 years duration). Satisfactory completion will lead to a Certificate of Completion of Training (CCT) and surgeons will be eligible to apply for consultant posts.

After achieving a CCT surgeons would be able to apply for further training to obtain subspecialty accreditation.

Career progression will depend upon the demonstration of competency rather than time spent in a particular grade.

The *Curriculum for the Foundation Years in Postgraduate Education and Training* consultation document¹⁶ indicates, for the first time, the time commitment likely to be required for assessment processes to take place. It is estimated that assessment time per trainee will amount to approximately 4 hours 20 minutes per year. The validity of this estimation has not yet been widely tested. The document also points out that the foundation years must be based upon learning within the workplace – it follows therefore that foundation year 1 (F1) and foundation year 2 (F2) trainees can no longer be relied upon to provide service delivery within their very tight training schedules and this will have an obvious effect on the workload of consultants and service grade staff.

The curriculum consultation outlines several methods of assessment. The chief medical officer (CMO)'s guiding principles of assessment verify that reliable methods of assessment are still evolving. However, the CMO points out that assessments must be appropriate, clear, unambiguous, quality assured and objective wherever possible. With the introduction of MMC there will be an increased requirement for professional time in carrying out the regular assessments required during the programme.

Whilst the fundamental principles of MMC are entirely appropriate, some surgical specialties have expressed concern over the following issues:

- > Robust competency and quality assurance assessments will be required to ensure appropriate career progression. Such methods have not yet been developed.
- > Streamlining training, especially within the confines of the EWTD and changing patterns of work, will be problematic.

- > The idea that many more doctors with generalist skills are required, and rather fewer with specialist skills is contested. Common operations formerly undertaken by unsupervised trainees are now often seen to be better managed by consultants in a subspecialty. All specialties have identified procedures that would require specialist skills – it remains to be seen how such procedures will be taught within a generalist curriculum.
- > Most specialties have agreed that specialist training programmes should be of six-years duration. However, there is debate as to what constitutes a generalist and a specialist.
- > There is, as yet, no process in place to ensure that postCCT subspecialist training is managed and funded appropriately
- > Trainers must be fully supported – they will be required to deliver high quality training within a shorter period of time.
- > There is a general consensus that consultant surgeons must continue to be trained to the same level of skill as now. This may be difficult to achieve within a streamlined training period without further subspecialisation.
- > Most specialties believe that the title of consultant with its personal, legal, moral and professional obligations should be retained. It is inevitable that different grades of specialists will emerge from the MMC process. It is vital that patients are able to identify who is treating them. The public must, therefore, be informed as to the roles and responsibilities of the various grades of specialist.
- > The timescale for implementation is very short (August 2005 for foundation programmes, and August 2007 for specialist training programmes).
- > Opportunities for SAS doctors to rejoin the training pathway in order to become a consultant must be factored into MMC programmes. If large numbers of SASs take up this opportunity, levels of service will temporarily be reduced.
- > The incorporation of large numbers of existing stand-alone SHO posts into the proposed new training pathway will be difficult.
- > Trainees may not receive adequate experience of surgery to allow them to make a career choice during F2. Furthermore the selection of trainees for specialist training will be difficult with little performance information on which to base appropriate selection. Surgery is a craft skill, and a valid and reliable method of assessing the potential for surgical practice should be devised, but attempts to date have shown that this is not an easy task. For aspiring surgeons, a year spent in the generality of surgery has been proposed – this would take place at postgraduate year 3, but would count, retrospectively, as the first year of specialist training. This year would provide general experience in surgery, and an opportunity to assess the potential of the aspiring trainee to benefit from entry to a specialist training programme.
- > Some workforce planning models are based on the assumption that just one-third of trainees will progress to specialist training. Others predict one-half will progress. Whatever the proportion, there will be a significant number of current SHOs outside the training system. At present, they would have no alternative but to enter a service grade post while making further applications for entry to specialist training.
- > Existing candidates for SpR appointments (who are numerous) could be treated more fairly by a temporary expansion of NTN opportunities at the time of transition. Formal proposals for this suggestion have not yet been announced.
- > Once a steady state has been achieved – ie there are sufficient consultant surgeons in place and sufficient doctors in training to replace them as they retire – it is likely that a reduction in trainee numbers will be required as the average working life of a consultant surgeon is 25 years and the training period only six. A ratio of one trainee per four consultants will be required. This will cause further

workforce planning issues as the profession struggles to secure sufficient consultant surgeon posts for all current trainees and fill gaps in service provision. With a reduction in the number of trainees, consultants will be required to take on increased emergency responsibility. This situation has already occurred in cardiothoracic surgery.

4.4 Appraisal and Revalidation

Annual appraisal is now a contractual requirement of all NHS consultants and SAS doctors. It is primarily a professional formative process that gives surgeons the opportunity to receive regular feedback on past performance, record continuing progress, and identify educational and developmental needs.

From April 2005, by law, every doctor will need a GMC licence in order to practise medicine in the UK. The proposal that licences will be revalidated by the GMC, normally on a five-year basis, is now being re-examined following the recommendations of Dame Janet Smith³⁶ and the CMO's announcement of a review.³⁷

The GMC guidance *Licensing and Revalidation. Formal Guidance for Doctors (Draft)*¹⁷ advised that doctors should keep a folder of information drawn from their medical practice to show that they have been practising in accordance with the standards of competence, care and conduct set out in *Good Medical Practice*.¹⁸ This will support their case for revalidation. Most doctors will already be doing this for a variety of reasons, including reporting to local clinical governance systems and preparing for annual appraisals, but the validity of such information to indicate competent performance has yet to be established and further proposals are expected.

The College has produced guidance on specialty-specific criteria, standards and evidence for surgeons to use when preparing for appraisal and revalidation.¹⁹ The standards have been extracted from *Good Surgical Practice*²⁰ and the guidance provides examples of information and evidence that can be submitted to show the standards are being achieved.

The College fully supports the principle of regular assessment to ensure fitness to practise, but is aware that

this will create additional work – appropriate sessional time will, therefore, need to be dedicated to the process. At present much remains to be done to develop reliable assessment instruments and methods.

4.5 The New Consultant Contract and Job Planning

In order to ensure continued high standards of surgical training, the College recognises that consultants must obtain agreement to fulfil College activities and training commitments within their contract.

There must be recognition from government that training and other College-related activities are an integral part of consultant workloads for the greater good of the NHS as a whole. Dedicated time must be made for such activities and this undoubtedly restricts service throughput.²¹

The College and the Academy of Medical Royal Colleges have given explicit recommendations for programmed activities to fulfil the roles of regional adviser, regional specialty adviser, programme director, surgical tutor and other examining and teaching roles.^{21,22}

4.6 Article 14

Article 14 is new legislation that will allow suitably qualified individuals to apply to have their training, qualifications and experience assessed as being equivalent to that required for entry to the specialist register. This would include Type 2 trainees, SASs, and overseas doctors.

The effects of Article 14 on workforce numbers are thought to be minimal in urology, neurosurgery, and oral and maxillofacial surgery.

Even a small number of surgeons gaining entry to the specialist register in cardiothoracic surgery and paediatric surgery would have a huge impact on the workforce profile.

The larger specialties (general surgery and trauma and orthopaedic surgery) are likely to see a considerable influx of applications by specialists via the Article 14 route.

The effects of Article 14 on otorhinolaryngology may be considerable.

Assessment processes are, as yet, unclear, and the postponement by PMETB in assuming its full statutory responsibilities until September 2005 has further delayed the implementation of Article 14 but applications will be accepted from summer 2005.

4.7 Changes to Working Practices

There are many examples in surgery where unforeseen changes and developments in working practices have called into question long-term workforce planning projections. Cardiothoracic surgery is a prime example of this. In 2002, the WRT considered that the NHS in England alone would require 713 consultants by 2010. In 2004, this requirement had halved to 337. There are currently 164 Type 1 trainees in post in cardiothoracic surgery (England and Wales) and approximately 12 CCST holders without a consultant post. This disparity has been caused by the greater use of invasive cardiological techniques in routine cases reserving surgery for the more complex and refractory cases. Such rapid technological advancements have implications for workforce planning, which operates over a minimum period of six to ten years.

The effects of technological advancement are difficult to model in workforce planning. For example, the increased use of interventional radiology will undoubtedly reduce the need for open surgery in a number of specialties.

Modern surgery is becoming more versatile and this may increase demand from patients who are unable to benefit currently.

4.7.1 Transition from Individual Consultant Practice to Multidisciplinary Team Working

Independent consultant practice was established by the Medical Act of 1858 and enshrined in the NHS by the 1946 NHS Act. During the first decades of the NHS when treatments were relatively simple and professional structures clearly defined, this model led to an efficient and effective service in many hospitals. As surgery developed in complexity and the frequency of intervention increased, it became clear that increasing amounts

of service were being delivered by surgical trainees. It also became apparent that consultant surgeons would need to work together to provide appropriate service cover and training. In addition they would need to be supported by a number of other healthcare professionals whose unique skills were necessary for complete patient care. The concept of a modern multidisciplinary team therefore evolved from the requirements for safe patient care. The College has already recognised the need for consultants to work in teams and has published recommendations for safe practice.²³

4.7.2 Team Working

The increasing move towards team working in surgery is directed towards more efficient, patient-centred care and as such is welcomed by the College. However, it must be recognised that consultant surgeons have a unique responsibility for the entire care pathway taken by patients and this responsibility can only be fulfilled by leadership and with the help of other consultant colleagues working in a multidisciplinary team

Effective team-working is task-based. Surgical teams must be seen as a collection of experts where the skills, knowledge and experience of each individual member contribute to the task in hand. Successful team-working takes place across professional and discipline boundaries and requires dedicated team time in order to build sound objectives, effective working relationships, and mutual support and understanding. The move from individual consultant practice to a fully integrated specialty team is one of the most necessary and most challenging features of modern surgical practice.

Many of the traditional tasks carried out by surgeons have been, and will continue to be, effectively taken on by others under the supervision of consultants. Whilst this should mean that surgeons, and especially surgeons in training, have more time to concentrate on surgical work, there is concern that the use of nonmedically qualified practitioners (NMQPs) in operating theatres and on the wards can actually dilute surgical training opportunities for junior doctors. In addition, the provision of allied health professionals within the surgical team has been seen to increase service demands as such a multidisciplinary approach often reveals unmet needs.

4.7.3 Extending the Surgical Team

Modern surgical practice requires effective multiprofessional team working. This is becoming an increasingly widespread practice in the NHS. Team working can provide huge benefits to patient care, and has helped to solve some of the issues of EWTD. Workforce planning and design will need to reflect service design and the diversity of roles within the clinical team. Other professionals can significantly improve service delivery by undertaking those roles for which medically qualified staff are not required. They are seen as an important supplementary resource but do not substitute for the skills of an appropriately trained medical practitioner.

The College is working to examine and identify the various groups involved and to define the role of individuals who form the core and wider multiprofessional surgical team.

The College will define standards for the wider team in collaboration with the specialist associations and other professional groups, as well as patient representatives, and will also define clinical, managerial and professional lines of accountability. The College will play a key role in developing curricula, quality assurance and assessment processes, and training and education programmes.

Such teams will need to be led by a consultant surgeon. Initial training and supervision may prove to be expensive in terms of consultant time compared with solo performance, however, it is envisaged that NMQPs would become a permanent member of the surgical team, and thus a valuable resource.

Indeed, we found that NMQPs were part of the surgical team in most specialties. These practitioners had defined roles in running outpatient clinics, conducting initial screening (in, for example, varicose veins or endoscopy), and in performing minor procedures under consultant supervision. For example, NMQPs have been in use in cardiothoracic surgery for over 10 years and have been providing a valuable service and undertaking appropriate training of junior surgeons.

Strong support for the development and training of NMQPs is evident. Set roles must be defined, and appropriate supervision protocols put in place to ensure patient safety.

TEAM WORKING 1

RESPONDING TO THE INCREASED DEMANDS OF SPECIALITY DEVELOPMENT

THE ROYAL COUNTY HOSPITAL AND ST LUKE'S CANCER CENTRE, GUILDFORD

The centre has a staff complement of two full-time consultants and one part-time, assisted by a recently appointed staff-grade urologist.

The unit has a busy emergency workload – approximately 60% of referrals concern patients who may or may not have cancer and therefore require investigation.

It was recognised very early on that the introduction of the requirement to see all patients who might be suspected of having a cancer within two weeks of referral from their GP would cause problems within the department. However, the unit was able to introduce more effective clinic arrangements with the help of urology nurse specialists.

There are six senior part-time nurse specialists who cover a wide range of urological patients. Although these clinics are stand alone the nurses are supported and assisted by the consultants, staff-grade urologist and also the junior staff.

The unit now offers haematuria, transrectal ultrasound-guided prostate biopsy, prostate cancer follow-up, urodynamic, urinary tract infection and andrology nurse specialist clinics. Audits are regularly conducted to assess progress. The nurse specialists also liaise closely with the ward nursing staff.

The end result is a seamless urological practice with medical and nursing staff working together to provide the best possible care for urology patients. In addition there are two local general practitioners who are fully trained in flexible cystoscopies who also see patients in the clinic alongside the consultants.

TEAM WORKING 2

USING A MULTIPROFESSIONAL APPROACH TO LINK OUTPATIENT, OPERATIVE AND POST-OPERATIVE CARE DARLINGTON MEMORIAL HOSPITAL

Consultant colorectal surgeons and nurse practitioners are working together to create a range of new outpatient services that reduce unnecessary steps in the patient journey, increase capacity and reduce delay. Patient involvement has been assured by carrying out satisfaction surveys, forming focus groups and consulting user groups.

The nurse-led rectal bleed clinic provides a one-stop service for those with isolated rectal bleeding. A history is taken, flexible sigmoidoscopy is performed and therapeutic procedures such as banding of piles or polypectomy can be carried out as required. This initiative has created 30 new appointments each week across South Durham.

Asymptomatic patients with a family history of bowel cancer are seen in a nurse-led clinic run in association with the regional genetics service. The risk of developing the disease is assessed, and patients are either reassured and discharged, or referred for investigation. The current capacity of five patients in a clinic held once a month satisfies demand, but could be increased if necessary.

Patients undergoing major bowel surgery are pre-assessed by a nurse prior to admission. This prevents late cancellation of surgery, allows the process of consent to be taken forward and facilitates discussion of psychological issues. The integrated clinic is a nurse-led clinic operating in the environment of the traditional consultant clinic. Both new and follow-up patients are seen and the consultant is always available for a further opinion. A recent audit demonstrated that a nurse assessed an average of 8.2 patients per clinic.

Nurses are training to perform colonoscopy in anticipation of the proposed National Colorectal Cancer Screening Programme, and they are now working as first assistants in the operating theatre to fill the gaps left by junior posts complying with EWTD.

Consultants have time freed up within clinics for teaching, and nurses are able to pass on to junior doctors the skills in which they have become proficient.

TEAM WORKING 3

THE ROLE OF THE SURGICAL CARE PRACTITIONER IN ENHANCING CONSULTANT OPERATING AND FACILITATING FOCUSED TRAINING OPPORTUNITIES HEART & LUNG CENTRE, WOLVERHAMPTON

The surgical workforce plan for the Heart & Lung Centre has been developed to provide a high standard of consultant-led service commitment and a focused training programme for junior doctors. It is recognised that, driven by EWTD, junior doctors' working hours, have, and will continue to be substantially reduced. In order to incorporate the same quality and quantity of training, their time on duty needs to be spent in a formal, curriculum-based, time-capped programme with regular assessments and appraisals. The most successful way of achieving this is to establish a care pathway where service commitment is provided by consultants and nonmedical staff. Doctors in training can then be introduced to the pathway as supernumerary. This allows them to gain full advantage of teaching and training opportunities in all areas without the delays incurred by performing repetitive tasks in a programme driven by service commitment.

- > Service delivery is provided in outpatient clinics by the consultant surgeon, who agrees a treatment plan with the patient and arranges additional investigations.
- > In pre-admission clinics, investigations and assessments are organised and performed by senior nurses. Admission procedures on the ward are also nurse led.
- > Surgical operative service is provided by a surgical team consisting of a consultant surgeon and one or two surgical assistants, who harvest conduit, first assist and provide surgical supervision for basic surgical trainees.
- > Postoperative care (at present provided by trust fellows) should, in the longer term, be delivered by an experienced team of nurse practitioners, working to consultant-designed protocols and overseen by consultant anaesthetists and surgeons.

The experience and clinical consistency of the nonmedically qualified workforce team provide an environment where excellent clinical standards can be established and maintained. This group positively contribute towards the training of the basic surgical trainees, freeing the higher surgical trainees to concentrate on their own training and development programmes, and the teaching efforts of the consultant surgeons can be focused on the surgical training of specialist registrars.

4.7.4 Interface Groups

There are many issues surrounding the interface between specialties, for example, spinal surgery may be within the domain of the neurosurgeon and the trauma and orthopaedic consultant surgeon. Other examples include hand surgery and head and neck surgery. A clear strategy is required.

Hospital Episode statistical recording does not clearly identify shared procedures and this has implications for accurate forecasting.

4.7.5 Infrastructure

Many specialties have cited the need for good secretarial and administrative support – not simply the services of an audiotypist. Good secretarial and administrative staff have a major clinical role managing the liaison with patients, families and other colleagues, as well as an important administrative role, organising the service, facilitating booked admissions, and ensuring the best use of consultant time. In addition, they are often responsible for the collection of data for clinical audit, but the production of high-quality clinical data is best served by dedicated data managers.

It is likely that the pay modernisation initiative *Agenda for Change*²⁴ will have a detrimental effect on the salaries of administrative and clerical staff within the NHS. They are already very poorly paid for the responsibilities they carry. This will inevitably make the recruitment and retention of high-calibre secretarial staff more challenging for surgical units.

It is apparent that an increase in the number of consultants alone will be insufficient to guarantee improved productivity. Significant investment in facilities such as ITU beds, operating theatre space, equipment and support services must also be made to maximise the potential of the workforce.

4.8 Changes in Working Patterns and Demographics

4.8.1 Gender

In some medical schools, the intake is up to 70% female.²⁵ In 2004, there should be 4,000 graduates from

medical schools. Research has shown that, in 2000, 30% of male graduates and 10% of female graduates intended a career in surgery.²⁶ This suggests that, in 2004, 360 men and 280 women (total 640) may wish to enter surgery.

A survey of graduates from 1996 and 1999 found that disproportionately high numbers rejected the surgical specialties as their career choice. The main reason given related to quality of life issues.²⁶

Surgery has historically been seen as a difficult career choice for women. The Women in Surgical Training (WIST) initiative at the College has done much work to dispel this view, however, the College recognises that more work is required to ensure that surgery can be seen as an attractive career to all medical graduates. Recent DH figures show that women make up 5.4% of the consultant surgical workforce. Information from College databases indicated that 17% of SpRs and approximately 25% of SHOs are female. The proportion is unevenly distributed between specialties.

Both male and female surgeons must be recruited and retained and it must be recognised that work: life balance is an issue for all doctors. Working and training

TABLE 9 Gender of surgical consultants (England)

Speciality	Male consultants	Female consultants	Female consultants (%)
General surgery	1,495	107	6.6
Trauma and orthopaedic surgery	1,475	43	2.9
Urology	493	15	3.0
Otorhinolaryngology	488	35	6.7
Oral and maxillofacial surgery*	281	26	8.5
Plastic surgery	217	19	7.9
Cardiothoracic surgery	233	7	3.0
Neurosurgery	172	6	3.3
Paediatric surgery	83	23	21.6
Total	4,937	281	5.4

Source: Department of Health *Medical and Dental Workforce Census*, June 2004 (<http://www.statistics.gov.uk/STATBASE/Source.asp?vlnk=308&More=Y>)

* includes oral surgery

programmes must be designed flexibly to accommodate these legitimate aspirations.

There is a continuous requirement to review workforce numbers to take account of the changing whole-time equivalent to headcount ratio (WTE:HC). The ratio currently used is approximately 0.9. However, in future, this may fall towards 0.5 as more consultants work less than full time.

4.8.2 Flexible Working

The traditional working life of surgeons with long working weeks and a significant responsibility for out-of-hours emergencies may conflict with the lifestyle ambitions of contemporary generations.

More surgeons, both male and female, are choosing to train and work flexibly and with the increased emphasis on improving working lives, we are likely to see increasing numbers of flexible, part-time and job-share surgeons. Surgery needs to be far more inclusive and be able to attract and retain those who choose to work and train flexibly. This will improve the recruitment of a more widely representative workforce.

Training needs to focus on the competencies required including nontechnical and professional skills, rather than on an unreasonably extensive curriculum. Workforce timetabling and funding arrangements must be designed to ensure that all surgeons can be accommodated.

4.8.3 Retirement

The trend to early retirement is difficult to quantify and even very minor changes to retirement age profiles have a profound effect on workforce numbers. There are a number of issues surrounding retirement at present that make accurate workforce planning problematic. For example, the new consultant contract may influence consultants to delay retirement, the so-called golden handcuffs effect. Conversely, a recent BMA study found that up to 4,000 consultants would reach their maximum achievable pension entitlement by 2007 under the new consultant contract. The effects of such a large retirement cohort have not been quantified.

A general trend toward retirement at 60 instead of at 65 would shorten the average working life of a consultant by 15-20%, which can only be offset by a commensurate increase in consultant numbers. Some relief may be achieved via the flexible careers scheme,²⁷ which offers those doctors nearing retirement age a flexible pattern of work – perhaps reducing on-call commitments and putting their years of experience to good use by their involvement in teaching or mentoring activities. This may mean that full retirement is delayed for some surgeons. Government proposals to change NHS pensions to a career average scheme, from a final salary one, and plans to increase the pensionable age to 65 will undoubtedly have effects on recruitment and retention. Retirement age remains a matter of personal discretion, and there are many issues that would affect an individual's choice

4.9 National Service Frameworks and Clinical Guidelines

National service frameworks (NSFs) are in place in England, and separately in Wales, to set national standards and identify key interventions for a defined service or care group. They put in place strategies to support implementation and establish ways to ensure progress within an agreed timescale. NSFs are one of a selection of measures in place to raise quality and decrease variations in service.

A range of NSFs affect surgical services, for example, the children's NSF, the long-term conditions NSF, coronary heart disease NSF, etc. It is vital that the key stakeholders work together to ensure that service delivery targets proposed by the NSFs take into account surgical workforce issues and do not undermine patient care and expectation by setting undeliverable targets for surgical services.

4.10 Academic Surgery

Academic surgeons teach both undergraduates and postgraduates and also undertake and supervise research. The Council of Heads of Medical Schools (CHMS) 2004 survey *Clinical Academic Staffing Levels in UK Medical and Dental Schools*²⁸ found that there were 2,500 clinical academics employed in UK medical

and dental schools – more than 500 fewer than recorded in 2001. In addition, there has been a 30% decline in the numbers of clinical lecturers in medicine and dentistry and a 17% reduction in the numbers of clinical researchers. This decline has occurred at a time when the requirements for undergraduate training have increased by up to 30%. Shortages are particularly severe in surgery.²⁹

It is increasingly difficult to recruit and retain academic surgeons. The CHMS report highlights:

- > competing pressures of service, research and teaching activities;
- > increased time taken to complete specialist training;
- > lack of exposure to academia within postgraduate training;
- > lack of flexibility in the postgraduate training programmes; and
- > lower financial awards than in the NHS.

Proposals to alleviate these problems have been widely discussed but progress is uncertain. It is very much hoped that a career in academic surgery will be seen as more attractive in the future. It is certainly vital to the training of tomorrow's surgeons.

It is hoped that the new foundation programmes under the MMC initiative will contain the opportunity to experience academic medicine, which may help to attract trainees towards an academic career.

4.11 Staff and Associate Specialist Doctors

There has been a substantial increase in the numbers of SAS doctors. Exact numbers are difficult to ascertain – for example, the BMA estimates some 12,500 SAS grades are working in the NHS, the 2003 DH census for England states that there are 7,256 SAS grades across all specialties. Data from the surgical specialist associations indicate that, in 2004, there were 1,546 SAS grade staff working in the surgical specialties – 20% of the nonconsultant surgical grades.

SAS grades comprise staff grades, associate specialists and a large number of Trust doctors with various titles. The nonstandard nature of job titles for SAS grades contributes to the difficulty in quantifying their numbers.

SAS grades are employed primarily:

- > to deliver high volume surgical services; and
- > to ensure legally compliant rotas.

Evidence has suggested that this group of surgeons were experiencing poor job satisfaction and career progression. In February 2000, the College set up a Staff and Associate Specialist Advisory Panel to advise Council on matters relating to SAS surgeons. The advisory panel has worked on competence-based assessment for SAS surgeons and is currently looking at increasing the representation of SAS surgeons on College committees.

In 2003 the government set up a consultation to reform the nonconsultant career grades.³⁰ The initiative made recommendations about the title, recognition and support for SAS-grade doctors, and their integration into the MMC process. Work to revise and upgrade the SAS-doctor contract has been slow and it is envisaged that many SAS grades (up to 1,400) may apply for entry to the specialist register when Article 14 is in place. If large numbers of SAS-grade surgeons are accepted onto the specialist register, a large cohort of surgeons delivering service will be lost.

The role of SAS surgeons is complex. Some surgical specialties rely heavily on SAS grades for service work and for providing out-of-hours cover. Some see a limited role for them in the delivery of training to junior staff.

The level of input and role of SAS surgeons very much depends on the specialty or subspecialty in which they work, and their individual level of training and expertise.

Like any member of the team, their role must be adequately defined and clear protocols set so that standards of care can be maintained.

4.12 Locums

Surgical units frequently employ locums at all levels to cover for leave, sickness and to make legal rotas. As such, locum doctors provide an essential service to hospital Trusts. However, concerns have been expressed over the quality of some locum doctors, and the apparent ease with which some unsatisfactory locums can move between hospital appointments.

Locums will be required to keep a portfolio of evidence of fitness to practise under the GMC's appraisal and revalidation initiative.¹⁷ This will assist in ensuring that the work of locums is quality assured and that their fitness to practice is validated. The College recommends that all locums not on the specialist register must be supervised by a consultant surgeon in the same specialty.

4.13 Demands on Consultant Surgeons' Time

It is surprising to many that consultants are actually engaged in operations for a comparatively small proportion of their time because of other duties. Traditionally many consultants have exceeded their contracted working hours, but the profession may see this good-will work decline as the new consultant contract is implemented. If this is the case, more consultant surgeons will be required.

The duties of a consultant include:

- > Elective operating
- > Provision of emergency on-call services
- > Outpatient clinics, including pre-operative assessment clinics
- > Ward rounds
- > Day case and ambulatory services
- > Teaching
- > Management and administrative work
- > Travel between hospital sites
- > Waiting list initiatives
- > Trust initiatives, eg risk management
- > Clinical audit
- > Appraisal and assessment of junior staff
- > Peer review

In addition, consultants may undertake:

- > Deanery or College duties
- > Specialist association duties
- > An examiner role
- > Quality assurance duties
- > Membership of advisory appointment committees (AACs)

The new consultant contract requires consultants to plan out their duties into distinct programmed activities (PAs). Some specialties have given data on the percentage of time their consultants are recommended to spend on such activities, and these can be found in Part Two.

4.14 Managing Suspensions and Exclusions

When the performance of a surgeon is called into question, chief executives may consider suspension or exclusion. Unjustified suspension or exclusion has been identified as a significant financial and workforce burden in some Trusts that have lacked expertise in the management of performance issues. In some cases a surgeon's performance has been impaired by strategic arrangements for service provision or serious deficiencies in support structure.

Surgery is by far the most vulnerable specialty in terms of suspensions. Financial and personal costs are high. Concerns over the management of surgical performance have been highlighted in the report concerning the Bristol Royal Infirmary,⁴ which contained a large number of recommendations to assure good management and improved standards of care. Annual appraisals should be used as a framework in which issues relating to quality of work can be addressed in a timely fashion.

The GMC is concerned with performance issues of such severity that the registration of the doctor is threatened. The National Clinical Assessment Authority (NCAA) is a special health authority designed to provide advice, ongoing support and, where necessary, assessment in the case of concerns about the performance of a doctor who has not reached the requirement for referral to the

GMC. The NCAA is merging with the National Patient Safety Agency in April 2005, but NCAA's functions will continue to be delivered by a self-contained division within the agency.

The intervention of the NCAA has resulted in a significant reduction in the number of suspensions and exclusions and the resolution of many long-standing cases. The College has been active in providing professional assessment and advice where Trusts have identified concerns about the performance of an individual surgeon or team and there is an agreement between the College and the NCAA as to how they will assist each other in this work. Both the NCAA and the College are committed to developing a better understanding of these performance issues that significantly affect the productivity of the workforce and examining the potential for improvement, whether by better support facilities or further training.

A House of Commons Committee on Public Accounts report states that the cost of suspensions to the NHS is in the region of £40 million per year.³¹ It also states that in many of the cases referred to the NCAA alternatives to suspension were available. Suspension alone rarely resolves these difficult issues and resolution becomes even more difficult as the length of suspension increases, not least because the opportunity to provide a fair assessment of performance in the workplace is denied.

4.15 Surgeons and Management

In making the best use of the available workforce, there are a number of examples of changes in working practice developed by cooperation between clinical and managerial staff. In some cases there have been significant improvements in patient care and a valuable release of scarce resources by innovative changes in the management of emergency rotas and a team approach to elective care. Locally developed solutions are likely to provide the best opportunity.

4.16 Clinical Networks

The more highly specialised a service is, the more it needs to be focused in a centre that can provide a critical mass of surgical experience and training. The service

also needs to work as a managed clinical network so these highly specialist skills are made widely available. Again, locally developed solutions are required.

4.17 Diagnostic Treatment Centres and Independent Sector Treatment Centres

The DH *Growing Capacity* initiative will see many diagnostic treatment centres (DTCs) and ISTCs built in England.³²

The College welcomes developments that will increase the resources and skills available to meet the needs of surgical patients and lead to a reduction in waiting times.

However, the College is concerned with the need to assure the competence of surgeons in these centres, the arrangements for dealing with operative complications and co-morbidity of patients, governance and audit arrangements, and the effect which this diversion of work may have on surgical training opportunities.

It is inevitable that the less technically demanding operations, and less co-morbid patients will be prime candidates for DTCs or ISTCs. This will deprive trainees of valuable exposure to common procedures, which have traditionally provided excellent training opportunities. This will also ensure that NHS Trusts deal with the more complicated cases, resulting in extra time and resources for the Trust, and adverse results in performance statistics. Consultants' time will be spent on more complex caseloads thus reducing their capacity to deal with the more usual NHS patients.

A further concern regarding DTCs and ISTCs is the possible depletion of NHS staff. If staff are recruited away from the NHS and into these centres, workforce planning will become increasingly more complex and the investment in training more difficult to recover.

4.18 The Consultant of the Future

The legal, moral and professional responsibilities, which are unique to the consultant grade, are recognised to be of value and should be continued. However, as medical systems become more complex and patient management depends on an ever increasing number of other disciplines, the professional skills of surgeons will need to be extended to incorporate managerial, business and

TEAM WORKING 4

THE EMERGENCY GENERAL SURGERY SERVICE – A TEAM-BASED SOLUTION

ROTHERHAM GENERAL HOSPITAL NHS TRUST

Rotherham General Hospital is an 840-bed district general hospital with a 24-hour mixed surgical and medical admissions ward and a daytime paediatric admissions unit. Traditionally, the rotating surgical on-take had emergency patients taking second priority behind elective patients. Emergency patients were waiting hours to be seen by a surgeon, and elective activity was often cancelled to deal with emergencies.

The emergency general surgical (EGS) system was introduced in 2003. It was built upon a consultant-based team led by the consultant of the day who looked after all surgical emergencies collectively, regardless of who had admitted them. This matrix-based methodology replaced the old firm structure. The consultant surgeon on-call led a team that provided, among other things: consultant review of the sickest patients on a daily basis; consultant-to-consultant handover; operative care for emergency patients; opportunities to teach and supervise junior staff more closely; and assurance for those not on-call that the sickest patients were being looked after by the on-call team.

The consultant on-call accepted collective team responsibility for all – this required a new level of team work requiring clearly defined roles and responsibilities of each staff member. The timetable of each grade of staff was redesigned – consultants had a fixed day on-call, free of all elective activity, and then the following day undertook

the post-take ward round to review all emergency patients, a commitment requiring several hours each day. The rest of the week was allocated to elective activity. PRHOs were ward-based and had a finite number of patients to look after. When on-call, SHOs were responsible for reviewing A&E patients within 30 minutes. Supervised training was available in the 24-hour fully staffed emergency theatre. Registrars and staff grades continued with elective activity between 9.00am and 5.00pm and after 5.00pm they provided an extra tier of on-call cover.

This example of team working has also solved process problems – one year on, the hospital has saved 1,500 bed days, the daytime operating on emergencies has increased to 72%, and 90% of EGS operating takes place within 24 hours. In addition, consultant emergency operating has increased from 22% to 50% and supervised operating for the SHO from 7% to 18%. Urgent cholecystectomies have increased from 12 to 50 cases and outpatient waiting times have decreased. Against expectation, there has been no loss of elective activity.

The EGS system has achieved the main aims of a consultant-led service, maximising daytime operating and minimising reduction of elective activity. In addition, continuity of care and supervised teaching has been maintained, whilst embedding a team-based approach to the clinical management of patients.

personal competence if the full potential of surgical leadership is to be maintained.

The present convention whereby consultants are nominally independent practitioners, but in reality must work with colleagues as a team member, will need to be modified, possibly to a more pyramidal structure with clearer lines of corporate responsibility. In some disciplines the continental model of a *chef de service* who combines both clinical leadership and a business responsibility for the delivery of a local service may be the most appropriate structure. The effectiveness of such a system of governance is enhanced by the requirement to appoint (and remove where necessary) appropriate consultant and support staff to ensure high-quality service delivery in

accordance with agreements negotiated with funding authorities.

4.19 Developing the Professional Agenda

The pace of change has accelerated rapidly in recent years and, while not the primary focus of this report, will increasingly drive the education, training and development requirements for surgeons. Making the best use of these professionals will require significant investment throughout their working lives and has important implications for the delivery of a safe and effective service. The College and associations will have a major role in this important and challenging field in which life-long learning in professional and managerial skills will be essential for consultant practice.

CHEF DE SERVICE

THE CONTINENTAL MODEL

A CONSULTANT WITH EXPERIENCE OF WORKING IN THE NHS AND A EUROPEAN SYSTEM WRITES:

I have had personal and positive experience of working clinically in Europe (Switzerland) in a department where the position of Head of Service allowed the unit to be managed in a different and more effective way than the traditional NHS model. The Head of Service was an experienced clinician who was formally appointed by the Hospital Management Board to whom he was accountable. He was responsible for all aspects of the department, both business and professional. He managed the budget and all resources, including the non-medical staff and equipment needed to run the service. He was responsible for recruiting staff who demonstrated that they had the skills and attitudes needed to work hard, maintain standards, be flexible, be good colleagues and generally be an asset to the unit. Almost all staff were on renewable contracts – and not all contracts were renewed.

The Head of Service was accountable for maintaining and demonstrating excellent clinical standards in order to attract

patients, income and staff. My experience was that the highest standards were maintained – but we were all clear that cost was important and there was collective responsibility to balance the budget.

All consultants were expected to discuss difficult clinical problems with the Clinical Director and advice which he gave was always followed.

It was a much more disciplined service than the NHS model. The advantage was that there was clear direction and accountability and a focus on clinical quality. The budget-holder was responsible for setting priorities and was very focused on ensuring that problems were solved as quickly as possible. The 'downside' was that individuals were required to work within an agreed framework and were line-managed by the head of department. It certainly kept us on our toes – but it was possible to get things done in a way I have only been able to dream about since I rejoined the NHS!

5. Important Targets for Surgery

- > Surgical services should be delivered by fully trained surgeons. An increase in the number of consultants is required in almost all specialties.
- > Access to surgical services must be equitable and the quality of care must be acceptable, especially for patients in rural areas. This may require the amalgamation and networking of surgical provision.
- > Emergency services must be reconfigured to provide safe care and to enable tolerable rotas for surgeons and adequate training opportunities.
- > The further development of surgical teams and the culture of team working is vital for the continuity of safe patient care.
- > Robust and flexible workforce planning is required on a rolling basis to ensure that the right numbers of surgical staff are deployed across all grades and professions.
- > A supportive infrastructure to allow surgeons to do the work they have trained for is required. This includes adequate numbers of beds, theatres, day-case facilities, IT support, and the management systems to use them well. In addition, human resources are required – medical and nursing staff, and appropriate administrative support. Expansion of the numbers of consultants without the accompanying support will not further the aims of the *NHS Plan* nor the Welsh Assembly Government.
- > A commensurate expansion in all services involved in the care of surgical patients – for example, radiology, anaesthesia and pathology services will be required.

PART TWO – Workforce Analysis by Specialty

6. The Nine Surgical Specialties

Introduction

The aim of this section is to give up-to-date workforce information and comment from the specialist associations and SACs, alongside information derived from the DH, WRT and the Welsh Assembly Government.

Method

Workforce representatives from each association or SAC were identified and asked to complete a data collection proforma. This listed workforce numbers as well as specialty comment on workforce and service issues, such as consultant workload, the profile of the surgical team, the effects of MMC, job planning, the impacts of NSFs, EWTD, ISTCs and Article 14, etc.

Workforce Numbers

For each specialty the following information is given (where available):

- > Consultant surgeon numbers for England and Wales as at September 2003 derived from the specialist association or SAC.
- > Consultant surgeon numbers derived from the DH (England) and Welsh Assembly Government census, September 2003.
- > Consultant-to-population targets set by the specialist associations
- > Additional consultants required to meet this target by 2010.
- > The numbers of SAS grades, SpRs, and SHOs derived from both the specialist association/SAC and the DH and Welsh Assembly Government census, September 2003.
- > The number of international recruits to the specialty.
- > The expected number of retirements from the specialty up to 2010.
- > The expected number of CCSTs up to 2010.

Specialty Comment

Common issues highlighted by all specialties have been reported in Part One.

Specialty-specific issues are reported within each specialty section.

Assumptions made when preparing data tables

All figures are given as headcount unless otherwise specified.

The figures assume no time-gap between achieving a CCST and appointment to the consultant grade, and no wastage factors, such as early retirements, working and training flexibly, time out for sabbatical or development leave, etc.

6.1 Baseline Figures for England and Wales

The data in **TABLE 10** provide baseline information on workforce numbers across all surgical specialties as provided by the surgical specialist associations or SACs. Analysis of the figures in the table suggest that by 2010 we shall be at least 2,700 consultant surgeons short of specialty targets.

TABLE 10 Baseline figures for England and Wales

Speciality	Number of consultants	Speciality targets [†]	Number of SpRs	Number of SHOs	Number of SAsSs	Number of International recruits
General surgery	1,609*	2080 1:25,000	683	1,063	280	60 projected
Trauma and orthopaedic surgery	1,513*	2080 1:25,000	713*	1,043*	507*	12*
Urology	543*	1040 1:50,000	198*	253*	144*	–
Otorhinolaryngology	517*	1040 1:50,000	218*	410*	233*	0
Oral and maxillofacial surgery	253*	347 1:150,000	100*	400*	275*	0
Plastic surgery	249*	520 1:100,000	196.5	205	97	2
Cardiothoracic surgery	243*	347 1:150,000	164*	155	4*	2–3
Neurosurgery	177*	312 5-6:1,000,000	84	143	1*	1-2
Paediatric surgery	110*	208 1:250,000	78	10	5*	2
Total	5,214	7,974	2,434.5	3,682	1,546	79–81

Note: * denotes figures that include England and Wales

† as set by specialist associations in 2004

Source: data provided by surgical specialist associations and SAsCs.

6.2 General Surgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	1,534	1,534	75 (estimated)	103
Target	1:25,000			
Additional consultants required by 2010	800			
Number of SASs	280	410		32
Number of SpRs	683	848		48
Number of SHOs	1,063	1,163		70
Number of international recruits	60 (Projected)			
Expected retirements (up to 2010)	55 pa estimated		Unknown	
Expected CCSTs (up to 2010)				
2005	95			
2006	86			
2007	97			
2008	86			
2009	69			

6.2.1 Comment

The major subspecialties of general surgery are:

	Approximate number of subspecialists
Coloproctology	538
Vascular	449
Endocrine	140
Breast	443
Upper gastrointestinal/hepatobiliary	518
Military	125
Transplant	800

6.2.2 Consultant Surgeon Workload

The specialty consider it reasonable to ring-fence three consultant sessions per 24 hours for emergency work for the team on-call.

The specialty recommend the following consultant workload within existing job plans:

- > 12 new outpatients per week;
- > 20 follow-up outpatients per week;

- > 9 intermediate equivalents (IEs) elective operations;
- > 3-4 IEs emergency operations.

In terms of job-planning, the specialty recommend that the consultant working week should be dedicated as follows:

- > Emergency duties 2 PA
- > Outpatient clinics 2 PA
- > Operating lists 2 PA
- > Training and teaching 1 PA
- > Day surgery 1 PA
- > Administration, research and audit 2 PA

6.2.3 Surgical Team Profiles and The Role of the Consultant

Most hospitals serve a population base of between 200,000–300,000. The general surgical team for the future 250,000 population-base hospital might comprise:

Ten general surgeons – at present made up from:

- > seven or eight colorectal/upper gastrointestinal surgeons (visceral surgeons)
- > one endocrine/general surgeon
- > two breast consultants
- > plus vascular surgeons.

Larger hospitals will require disproportionately more consultants and middle grades. This is because they will

need to support a higher number of specialist rotas for the centralised services provided in hospitals serving a population of more than 500,000.

The Association of Surgeons suggests that vascular surgery will be provided by a separate rota on a network basis and that the contribution of vascular and breast surgeons to the general surgical rota will diminish in the future. Ultimately emergency general surgery may be provided by upper and lower gastrointestinal surgeons only, in which case, their numbers will need to be increased. The provision of endocrine surgery varies from one hospital to another but further subspecialisation is likely in the future.

6.2.4 Recruitment and Retention Issues

There are currently 41 chronically unfilled posts (ie vacant for over three months) in the UK.

6.3 Trauma and Orthopaedic Surgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	1,428	1,437	85	86
Target	1:25,000			
Additional consultants required by 2010	572		33	
Number of SASs	468	441	39	40
	(including 32 locums)		(including 4 locums)	
Number of SpRs	680	911	33	42
Number of SHOs	975	1,276	68	65
Number of international recruits	10		2	
Expected retirements				
2004	53		1	
2005	47		2	
2006	63		2	
2007	41		4	
2008	41		3	
2009	32		3	
2010	43		2	
Expected CCSTs				
2004	179		5	
2005	107		9	
2006	115		7	
2007	87		3	
2008	102		7	
2009	90		2	
2010	179		5	

6.3.1 Comment

Most surgeons are general trauma and orthopaedic surgeons. However, many have a subspecialty interest. The increasing trend towards subspecialisation can be seen by examining the number of consultants associated with each subspecialty.

	Approximate number of subspecialists	
	England	Wales
Joint replacement and revision	227	14
Acute trauma	206	12
Knee	201	12
General orthopaedic	134	8
Shoulder and upper limb	109	6
Children's orthopaedic	99	6
Hip surgery	90	5
Spinal	90	5
Hand	83	5
Sports	60	4
Foot and ankle	49	3
Trauma reconstructive	47	3
Other (including oncology, limb reconstruction)	34	2

6.3.2 Demand for Services

The specialty estimated that as at 31 March 2004 there were 146,467 patients waiting for an elective admission and 94,264 waiting for day surgery.

6.3.3 Consultant Surgeon Workload

The absolute numerical deficit of consultants within the specialty in relation to the British Orthopaedic Association (BOA) target of 1 consultant per 25,000 population is 572 in England and 33 in Wales.

Consultant workload within existing job plans and BOA guidance comprise:

- > 5 new outpatients/clinic
- > 10 follow-up outpatients/clinic

However, it is expected that, where clinics involve teaching and training, the throughput may be less. The number of patients seen in outpatient clinics also depends on the subspecialty – for example, the BOA recommends 20–30 minutes for a new elective case, and 10–15 minutes for a follow-up case in outpatients. However, in, for example, fracture clinics, the turnover is much higher, with 10–20 minutes for a new case and 10 minutes for a follow-up. Many units, if not most, routinely see more patients than this for each senior doctor in clinic. Clinics within existing templates are typically ‘pressurised’ in many units.

6.3.4 Growth in Numbers of Consultants and SAS Grades

The rate of consultant number growth in England from 2000–2003 was 18.5%. In Wales, the growth rate was at 23% over the same period.

In England, SAS posts (counting substantive and locum SAS) have increased by 25% in the same period. This is largely because of long waiting lists and consultant vacancies. In Wales, SAS grades have *decreased* by 5%.

6.3.5 Surgical Team Profiles and the Role of the Consultant

The consultant-led team profile would depend on the subspecialty. Nonmedically qualified practitioners work within the surgical team as, for example, hand therapists, podiatrists, biomechanists, etc. The population base served by a particular team would also vary depending on the subspecialty.

The recommended allocation of consultant workload under the new consultant contract would be:

Planned activities *directly* related to patient care (1 PA = 4 hours)

- | | |
|---------------------------------------|--------------|
| > Outpatient work | 3 PA |
| > Ward work | 0.5–1 PA |
| > Theatre procedures | 3 PA |
| > Administrative* | 1.25–1.75 PA |
| > Work during or arising from on-call | 1–2 PA |

Flexible commitments and *supporting* professional activity will occupy 2.5 PA and involves:

- > Training and teaching
- > Research
- > Laboratory work
- > Clinical audit
- > Management
- > Appraisal and job planning
- > Committee work
- > Local clinical governance, medical education and continuing professional development

* One PA will generate one hour of administration = 0.25 PA.

6.3.6 National Service Frameworks and Clinical Guidelines

Some of the work of the specialty is governed by the children, older people and cancer NSFs. The longer-term workforce implications are not yet defined and will be difficult to ascertain. Whilst there is no NSF for trauma work, much resource is directed at compliance with waiting-time objectives and there is a fear that trauma will tend to remain a 'Cinderella' service.

6.3.7 Recruitment and Retention Issues

At the time of going to press, England had 72 chronically unfilled vacancies and Wales had five.

For the period January–June 2004, there were 45 posts (England) and four posts (Wales) that were not advertised due to a perception they would not be filled.

6.4 Urology

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	516	473	27	25
Target	1:50,000			
Additional consultants required by 2010	See comment 6.4.1		See comment 6.4.1	
Number of SASs	136	113	8	7
Number of SpRs	188	234	10	11
Number of SHOs	236	247	17	15
Number of international recruits	No data		No data	
Expected retirements				
2004	15			
2005	13			
2006	20			
2007	24			
2008	25			
2009	20			
2010	22			
Expected CCSTs				
2004	36		2	
2005	21		1	
2006	18		2	
2007	35		3	
2008	44		1	
2009	34		1	
2010	36		2	

6.4.1 Comment

The specialty target ratio was historically 1:80,000. Under present arrangements, the specialty is on course to meet this target by 2009–2010. However, changes in working practices now mean that the specialty anticipates that approximately 300 urological surgeons and 600–700 urologists will be required. Thus, there are already too many trained surgeons. This calculation is based upon current workload and the job plans projected for surgeons and urologists. The effects of EWTD, MMC and the new consultant contract have yet to be measured, but it is expected that perhaps more people will be required than the current estimate. The target is therefore in the region of 1:50,000, made up of a mixture of urologists and urological surgeons.

6.4.2 Consultant Surgeon Workload

It is considered appropriate to ring-fence one session per 24 hours for emergency work for the team on-call.

There are two single-handed consultants working in Wales and one in England.

Consultant workload within existing job plans comprises:

- > 30–40 outpatient appointments per week;
- > 10–15 operations per week (depending on case-mix)

In terms of job planning, it is recommended that the consultant working week should be dedicated as follows:

- > Emergency duties 5%
- > Outpatient clinics 20%

> Operating lists	30–40%
> Training	0–25%
> Teaching	0–25%
> Management	0–25%
> Clinical governance	10%

6.4.3 Surgical Team Profiles and the Role of the Consultant

For 1 million population, the specialty require 8–9 specialist surgeons and 8–10 generalists.

6.4.4 National Service Frameworks and Clinical Guidelines

The cancer NSF poses significant service pressures on urology. The long-term workforce implications mean that services will need to be centralised into larger units given that there will be fewer surgeons required than at present. The NSF also impacts on support services such as diagnostics, as well as the increased requirement for operating theatre space, beds, ITU, etc.

6.4.5 Recruitment and Retention Issues

Approximately five consultant posts have been difficult to fill. Between five and ten posts had not been advertised due to the perception they would not be filled.

6.5 Otorhinolaryngology

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	488	488	29	35
Target	1:50,000			
Additional consultants required by 2010	636		Included in England	
Number of SASs	217	191	16	18
Number of SpRs	218	218	Included in England	13
Number of SHOs	410	410	Included in England	27
Number of international recruits	0		0	
Expected retirements	20 per year (based on 4% retiring per year)			
Expected CCSTs				
2004	27		Included in England	
2005	25			
2006	36			
2007	36			
2008	27			
2009	22			

6.5.1 Consultant Surgeon Workload

It is considered reasonable to ring-fence seven consultant sessions per week for emergency work for the team on-call.

There are two single-handed consultants working in England and Wales.

The target ratio for consultant: population is 1:50,000, so the absolute numerical deficit of consultants is 636.

The specialty believe that, depending on case mix, each doctor sees 1,600 patients per year (12 per clinic, 3 clinics per week, 44 weeks worked per year). It is reasonable to assume that two doctors run each clinic, so therefore, 3,200 patients per consultant per year. Each consultant would operate on 450 patients per year, depending on case-mix.

6.5.2 Surgical Team Profiles and the Role of the Consultant

For a population of 250,000 the specialty would require:

- > five consultants;
- > two SpRs;
- > some GPs with specialist interests (GPwSIs);
- > generic cover from F2 posts; and
- > nurse practitioners.

For a large teaching hospital serving more than 500,000 people, these numbers should be doubled.

In terms of infrastructure, a consultant would require 0.5 of an SpR, 1 GPwSI per clinic, and at least 1 NMQP. All clinics should be supported by at least one other doctor with further support from the outpatient team, specialist nurses, secretarial and administrative staff, etc.

For job planning purposes, the consultant working week should be split as follows:

> Emergency duties	10%
> Outpatient clinics	30%
> Operating lists	30%
> Training	10%
> Teaching	10%
> Management	5%
> Clinical governance	5%

6.5.3 National Service Frameworks

Increased referrals from the cancer NSF have impacted upon the specialty and it is considered that a 10% increase in numbers will be needed.

6.5.4 Recruitment and Retention Issues

There were 50 chronically unfilled posts at the time of going to press.

6.6 Oral and Maxillofacial Surgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	238 NHS 15 oral surgery*	272	15 NHS 2 oral surgery*	21
Target	1:150,000			
Additional consultants required by 2010	90			
Number of SASs	>260	183	>15	15
Number of SpRs	95	96	5	7
Number of SHOs	400	381	Included in England data	26
Number of international recruits	0		0	
Expected retirements				
2004	17		3	
2005	9		0	
2006	11		1	
2007	8		0	
2008	12		1	
2009	9		3	
2010				
Expected CCSTs				
2004	13		1	
2005	22		3	
2006	22		0	
2007	19		0	
2008	15		2	
2009	15		0	

* Oral surgeons are singly (ie dentally) qualified professors and senior lecturers working in dental school academic departments. They hold honorary NHS consultant contracts.

6.6.1 Comment

All non-academic consultants and SpRs must be dually-qualified in both medicine and dentistry. However, SHOs are almost always only dentally qualified. This makes cross-cover with other surgical specialties difficult.

6.6.2 Consultant Surgeon Workload

The specialty would recommend one consultant session per day be ring-fenced for emergency work for the team on-call.

There are approximately three consultants working single-handedly in England and Wales. This has reduced from 20 in 2001.

The numerical deficit of consultants in the specialty is approximately 100.

Consultant workload within existing job plan comprises:

- > 550 new outpatients per year;
- > 1,100 follow-up outpatients per year;
- > 240–700 elective operations per year (dependent on case-mix); and
- > 100 emergency operations per year.

6.6.3 Surgical Team Profiles and The Role of the Consultant

For a population of 1 million the specialty currently recommends:

- > six consultants
- > three SpRs
- > seven SHOs
- > one SAS grade

SAS-grade staff usually carry out dento-alveolar surgery and possibly have a limited role in some trauma surgery and oral medicine cases.

The infrastructure required for the surgical team includes experienced clinic and theatre nurses, dental hygienists, laboratory technicians and skilled administrative and clerical workers.

For job planning purposes, the consultant working week should be split as follows:

> Emergency duties	10%
> Outpatient clinics	30%
> Operating lists	30%
> Training	10%
> Teaching	10%
> Management	5%
> Clinical governance	5%

6.6.4 National Service Frameworks

Significant service pressures have been placed upon the specialty as a result of the cancer NSF and it is considered that a further 30 consultants are required to meet this service pressure.

6.6.5 Recruitment and Retention Issues

Dentally qualified surgeons need to undertake a medical degree and associated clinical training in order to become a dually-qualified OMFS surgeon. Unless there is recognition of the unique needs of OMFS the proposed Modernising Medical Careers initiative is unlikely to shorten the amount of training time for this particular specialty. Recruitment and retention is a major problem that needs addressing by the specialty, medical deans and workforce planners. The need for dual qualification also makes it very unlikely that there will be many doctors qualified for entry to the specialist register via Article 14 in OMFS.

6.7.3 Surgical Team Profiles and the Role of the Consultant

If trainees are to be withdrawn further from service commitment, there are two main issues:

- > **Elective, minor surgery** – At present trainee staff develop surgical skills in servicing this need. If consultants become responsible for this routine work, it may not be the most effective use of their skills. The alternative would, therefore, be to increase the numbers of SAS doctors and to include NMQPs in the activities of both clinical assessment and minor surgery.
- > **Emergency surgery** – It is likely that trainees will be withdrawn from night time, and possibly weekend rotas. Again, an increase in SAS doctors and NMQPs will be required. There is likely to be increased consultant on-call responsibility.

The current target of 1:100,000 is based on current working practices. Given the above, however, it is possible that one-third of a consultant's clinical time will be spent treating emergencies. This would require in the region of a further 300 consultants plus a similar number of SAS doctors or, in some cases, NMQPs able to do straightforward emergency work and elective minor operating.

An amalgamation of small units may be required to enable rotas to be covered.

The number of SAS surgeons varies – a desirable ratio would be between 1:2 consultants, to 1:1, depending on the workload of each unit. Their role inevitably involves many elective day-surgery lists and community lists. If trainees become supernumerary, consultant surgeons will increasingly take on the work currently performed by SHOs and SpRs.

NMQPs have an extended role in outpatient clinics, both in the assessment of clinical problems and in counselling patients.

6.7.4 National Service Frameworks

The cancer NSFs have added significant workload to plastic surgery. Multidisciplinary teams and clinics are costly in terms of consultant time. Many joint cases do not necessarily require plastic surgery reconstruction. The two-week rule is increasing the wait for other referrals.

6.7.5 Recruitment and Retention Issues

Entrance to specialist training programmes is, at present, highly competitive. This issue will be exacerbated in the proposed MMC process.

Aesthetic (cosmetic) surgery falls within the remit of plastic surgery – and, therefore, the training of it should take place within specialist training programmes. It is increasingly difficult for trainees to get adequate aesthetic training within NHS posts. Provision will need to be made for trainees via secondment, presumably with funding being provided, in the private sector.

6.8 Cardiothoracic Surgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	233	214	10	10
Target	1:155,000			
Additional consultants required by 2010	70			
Number of SASs	4	21	0	0
Number of SpRs	164	227	Included in England data	5
Number of SHOs	148	182	7	9
Number of international recruits	2–3		0	
Expected retirements	5 per year up to 2010			
Expected CCSTs				
2004	10		~1	
2005	15		~1	
2006	41		~1	
2007	26		~1	
2008	27		~1	
2009	25		~1	
2010	24		~1	

6.8.1 Comment

The major subspecialties of cardiothoracics are thoracic surgery, adult cardiac surgery, paediatric cardiac surgery, cardiothoracic transplantation and cardiothoracic surgery.

There are approximately 38 thoracic surgeons, 16 WTE paediatric cardiac surgeons and 179 cardiothoracic surgeons in England. The ten consultant surgeons in Wales are all cardiothoracic surgeons.

The target set for cardiothoracic surgery (1:155,000) is likely to be exceeded. Expansion is largely predicated on

the English NSF's prediction that 52 additional consultants will be required by 2010. Entry to the specialist register from other routes is likely to exacerbate the overproduction of trainees.

There are single-handed specialists within a few cardiothoracic units, most of whom are thoracic surgeons.

6.8.2 National Service Frameworks

The NSF for coronary heart disease and the cancer plan have impacted upon the specialty. Additional NTN's are required to provide sessional requirements to meet the targets set out in the English NSF's.

6.9 Neurosurgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	169	168	8	7
Target	5/6:1,000,000			
Additional consultants required by 2010	195			
Number of SASs	Not precisely known	11	1	1
Number of SpRs	84	167		6
Number of SHOs	143	143		6
Number of international recruits	1–2		0	
Expected retirements	Approximately 6 per year			
Expected CCSTs				
2004	9			
2005	15			
2006	20			
2007	8			
2008	14			
2009	3			
2010	0			

6.9.1 Comment

Through a process of assessing the volume of work required of neurosurgical units and translating this work into PA allocations of the new consultant contract, a demand and capacity model for neurosurgery staffing has been developed by the specialist association. This model can more effectively demonstrate the consultant requirement. It is clear that neurosurgery treatments are becoming more varied and more applicable to most neurosurgery centres. The demand for this increasing work has not yet been modelled.

6.9.2 Consultant Surgeon Workload

The consultant contract provides for 8 hours per week for unpredictable on-call activities per consultant. This is reasonable, provided there are two tiers of junior staff available to the team.

Consultant workload within existing job plans comprises:

- > 220 new outpatients per year
- > 260 follow-up outpatients per year
- > 164 operations per surgeon per year

In terms of job-planning, the specialty recommends that the consultant working week should be dedicated as follows:

- > Emergency duties 1.6 PA
- > Outpatient clinics 1.2 PA
- > Operating lists 3 PA
- > Training 0.5 PA
- > Teaching 0.5 PA
- > Management Variable
- > Clinical governance 0.5 PA

6.9.3 Surgical Team Profiles and the Role of the Consultant

It is suggested that neurosurgical units currently have a minimum of 1 million population base. It is thought that 2 million would be more sustainable, and perhaps 5 million for some subspecialties.

The nature of the specialty does not allow for the recruitment of large numbers of SAS grade surgeons.

The development and training of NMQPs is strongly supported.

6.9.4 National Service Frameworks and Clinical Guidelines

The NSF's for long-term conditions, the NICE *Head Injury Guidelines* and several other guidelines have placed service demands on neurosurgery.

In order to meet the requirements of these NSF's and guidelines increased consultant numbers and commitment are required. The *Head Injuries Guidelines*³³ will also have a major effect on A&E services, as well as on rehabilitation, neurology and radiology services.

6.10 Paediatric Surgery

	England specialty data	DH census data 2003	Wales specialty data	Welsh Assembly Government data 2003
Consultant numbers	106		4	4
Target	1 : 250,000			
Additional consultants required by 2010	150			
Number of SASs	5		–	–
Number of SpRs	76		2	2
Number of SHOs	10		–	2
Number of international recruits	2		–	
Expected retirements	5 per year			
Expected CCSTs				
2004	8			
2005	10			
2006	8			
2007	22			
2008	8			
2009	2			
2010	0			

6.10.1 Comment

All UK paediatric surgery is based on training consortia. There are six in all covering the UK. There are no separate data for Wales – however, Cardiff is part of the Birmingham & Bristol training consortia.

Paediatric surgery units are usually located within specialist children's hospitals or large teaching institutions. Many general paediatric services, historically housed within district general hospitals, have been moved to such centres, creating increasing pressure on these units.

6.10.2 Consultant Surgeon Workload

At least three, and possibly four consultant sessions per 24 hours are required for emergency work.

There is one single-handed consultant working in England and Wales.

Consultant workload within the existing job plan comprises:

- > 20 new outpatients per week;
- > 20 follow-up outpatients per week;

- > 10 elective operations per week; and
- > 4 emergency operations.

In terms of job-planning, the specialty recommend that the consultant working week be dedicated as follows:

- > Emergency duties 15%
- > Outpatient clinics 20%
- > Operating lists 20%
- > Training 15%
- > Teaching 5%
- > Management 10%
- > Clinical governance 10%
- > Research 5%

6.10.3 National Service Frameworks

A major increase in consultant numbers is needed to meet the requirements of the children's NSF.

Glossary of Terms

AAC	A College assessor will be included on every statutory Advisory Appointments Committee (AAC) for a substantive consultant appointment in surgery in England and Wales. The College assessor is the only statutory external influence on the AAC. Along with other members of the AAC, the assessor must ensure that the best candidate for the job is appointed and that the process is fair and open within current legislation and employment practice.
ASGBI	Association of Surgeons of Great Britain and Ireland. The specialist association for general surgery
BOA	British Orthopaedic Association. The specialist association for orthopaedic surgery
BMA	British Medical Association. A voluntary organisation that represents doctors from all specialties
CCST	Certificate of Completion of Specialist Training. Surgeons require the CCST in order to apply for consultant posts.
CGWT	Care group workforce team
Day case	Surgery which is performed on a 'same day' basis. The patient may remain in hospital for up to 23 hours. It is artificial to think that the patient will leave hospital within, for example, 8 hours.
DH	Department of Health. The Government department responsible for health and social care services in England. It is responsible for: management of the overall health and social care system; developing policy and managing major change in the NHS; regulation and quality assurance of the NHS (increasingly at arms length through organisations such as the Healthcare Commission), intervention, should problems occur in the running of the NHS at any level.
GMC	The General Medical Council is the statutory regulatory body for doctors in the UK. Doctors may not practice in the UK unless they are registered with the GMC. The GMC promotes good medical practice and high standards in medical education. The GMC also deals with doctors whose fitness for practice is in doubt
Headcount	The actual number of surgeons within a given grade or specialty.
Hospital Episode Statistics	Hospital Episode Statistics (HES) provide information on admitted patient care delivered by NHS hospitals in England. This is used to provide wide ranging analysis for the NHS, government and many other organisations and individuals who have an interest in health and healthcare administration. Separate information is also made available for Wales.
ISTC	Independent Sector Treatment Centres. Private sector surgical centres providing routine operations for NHS patients in order to reduce waiting lists in England.

JCHST	The Joint Committee on Higher Surgical Training. This committee controls and administers the scheme of higher surgical training representing the four surgical royal colleges and the relevant specialist associations. The JCHST is the advisory body to the surgical royal colleges for all matters in relation to higher surgical training and recommendations for the award of the CCST.
JDC	Junior Doctors' Committee of the BMA. Representing junior doctors needs.
MMC	Modernising Medical Careers (see Section 4.3)
MDWDEAG	Medical & Dental Workforce Development Expert Advisory Group of Wales
NCAA	The National Clinical Assessment Authority (NCAA). A special health authority central to the NHS's work on quality. It aims to provide a support service to health authorities, primary care trusts and hospital and community trusts who are faced with concerns over the performance of an individual doctor.
NSFs	National Service Frameworks help establish clear national standards for services to improve quality and reduce unacceptable variations in standards of care and treatment. There are NSF's for coronary heart disease, mental health, older people, and the NHS cancer plan. NSF's for children, diabetes, and renal (kidney) services are also being developed in England. Other NSF's are available in Wales.
NTN	National Training Number. Each doctor who is accepted for a specialist registrar training programme, who holds a substantive appointment in the specialist registrar grade and who has residence rights in the UK requires an NTN (the number is only issued to doctors who have been accepted for a training programme that may lead to the award of the CCST). This number is unique to the doctor and is held until training is completed and the doctor has left the grade. The aim of the training number system is to enable postgraduate deans to track the progress of trainees in their charge in the SpR grade and to plan and manage their funding provision. The aim is also to ensure that (nationally and within specialties) the right numbers of doctors are trained to meet the future demand for NHS consultants.
PMETB	The Postgraduate Medical Education and Training Board (PMETB) was formed in 2002 to supervise postgraduate medical education and training. It has been designed to be flexible, so that it may respond to changing circumstances in the provision of education or regulatory legislation. The PMETB is scheduled to assume its full statutory responsibilities in September 2005.
SAC	Specialist Advisory Committees (SACs) are subcommittees of the Joint Committee on Higher Surgical Training. There is an SAC in each of the nine surgical specialties and they are responsible for setting up and approving programmes of higher surgical training and, in liaison with postgraduate deans and local specialty training committees, for monitoring trainees' progress through the training programmes.

SAS	Doctors in the Staff and Associate Specialist (SAS) group work at career-grade level in hospital and community specialties. The group comprises staff grades, associate specialists, clinical assistants, hospital practitioners and other non-standard, non-training Trust grades. SAS doctors work in key service roles within the NHS and their numbers expand every year.
SHA	Strategic Health Authorities are the tier between the DH and NHS Trusts/primary care trusts (PCTs). They ensure the delivery of improvement in health services locally by PCTs and NHS Trusts and hold PCTs and NHS Trusts to account through performance agreements. There are 28 strategic health authorities in England, including five in London. A board of executive and non-executive directors, led by a chair, manages them.
Specialist association	These are the membership associations for doctors. For example the British Orthopaedic Association is the membership organisation for orthopaedic surgeons and advises on the training of orthopaedic surgeons. There are nine specialist associations for the surgical specialties.
STA	The Specialist Training Authority of the Medical Royal Colleges is currently the UK-competent authority for postgraduate medical training in the UK and has responsibility for all specialties except general practice. It awards Certificates of Completion of Specialist Training (CCSTs) and approves doctors for entry to the Specialist Register held by the General Medical Council. It should be replaced by PMETB in 2005.
WAG NHSD	Welsh Assembly Government NHS Directorate – the Welsh equivalent of the Department of Health.
Welsh local health boards	There are 22 local health boards (LHBs), which are local statutory bodies responsible for commissioning and providing healthcare across Wales.
Welsh regional offices	There are three regional offices in Wales and these form the top tier of management. They are technically part of the NHSD.
WRT	Workforce Review Team (see Section 3.3)
WTE	Whole time equivalent.

References

1. The Royal College of Surgeons of England. *The Surgical Workforce in the New NHS*. London: The Royal College of Surgeons of England; November 2001. <http://www.rcseng.ac.uk/services/publications/publications/pdf/surgworknhs.pdf> (cited November 2004).
2. The Department of Health. *The NHS Plan. A plan for investment. A plan for reform*. London: The Stationery Office; July 2000. <http://www.dh.gov.uk/assetRoot/04/05/57/83/04055783.pdf> (cited November 2004).
3. The Royal College of Surgeons of England. *The Response from The Royal College of Surgeons of England to "Keeping the NHS Local – A New Direction of Travel"*. London: The Royal College of Surgeons of England; May 2003. http://www.rcseng.ac.uk/services/publications/publications/pdf/nhs_local_response.pdf (cited November 2004).
4. The Bristol Royal Infirmary Inquiry. *Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984 -1995*. BRI, July 2001. <http://www.bristol-inquiry.org.uk/> (cited November 2004)
5. Senate of Surgery. *Reconfiguration of Surgical, Accident and Emergency and Trauma Services in the UK*. Glasgow: Senate of Surgery; May 2004. <http://www.baps.co.uk/documents/senate.report.3.pdf> (cited November 2004).
6. Professor Sir George Alberti, The Department of Health. *Transforming Emergency Care in England: A report by Professor Sir George Alberti*. London: The Department of Health; October 2004. <http://www.dh.gov.uk/assetRoot/04/09/17/81/04091781.pdf> (cited November 2004).
7. The Department of Health. *Day Surgery: Operational guide. Waiting, booking and choice*. London: The Department of Health; August 2002. <http://www.dh.gov.uk/assetRoot/04/06/03/41/04060341.pdf> (cited November 2004).
8. Tribunal Superior de Justicia de la Comunidad Valenciana – Spain. *Sindicato de Médicos de Asistencia Pública (Simap) v Conselleria de Sanidad y Consumo de la Generalidad Valenciana*: European Court reports 2000 Page I-07963; October 2000. http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&numdoc=61998J0303 (cited November 2004)
9. The Department of Health, NHS Modernisation Agency. *Hospital at Night*. http://www.modern.nhs.uk/scripts/default.asp?site_id=50&id=17048 (cited November 2004).
10. Association of Anaesthetists of Great Britain and Ireland. *Fatigue and Anaesthetists*. London: Association of Anaesthetists of Great Britain and Ireland, June 2004. http://www.aagbi.org/pdf/Web_Version_Fatigue.doc (cited November 2004).
11. Landeshauptstadt Kiel v Norbert Jaeger. *Landesarbeitsgericht Schleswig-Holstein – Germany*. Judgment of the Court of 9 September 2003. http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&numdoc=62002J0151 (cited November 2004)
12. The Royal College of Surgeons of England. *The European Working Time Directive – interim report and guidance from The Royal College of Surgeons of England Working Party chaired by Mr Hugh Phillips*. London: The Royal College of Surgeons of England; January 2003. http://www.rcseng.ac.uk/services/publications/publications/pdf/ewtd_report.pdf (cited November 2004).

13. The Royal College of Surgeons of England. *The Royal College of Surgeons of England and the European Working Time Directive. A policy statement*. London: The Royal College of Surgeons of England; July 2003. http://www.rcseng.ac.uk/services/publications/publications/pdf/wtd_policy.pdf (cited November 2004).
14. Department of Health *Unfinished Business: Proposals for the Reform of the Senior House Officer Grade. A Consultation Paper*. London: Department of Health August 2002. www.dh.gov.uk (cited November 2004).
15. The Department of Health, the Scottish Executive, the Department of Health, Social Services and Public Safety and the Welsh Assembly Government. *Modernising Medical Careers – The next steps. The future shape of Foundation, Specialist and General Practice Training Programmes*. London: Department of Health; May 2004. <http://www.dh.gov.uk/assetRoot/04/07/95/32/04079532.pdf> (cited November 2004).
16. Academy of Medical Royal Colleges, NHS Modernising Medical Careers. *Curriculum for the Foundation Years in Postgraduate Education and Training – A Paper for Consultation*; November 2004. London: The Academy of Medical Royal Colleges and NHS MMC, <http://www.mmc.nhs.uk/curriculum.asp?m=3> (cited November 2004).
17. General Medical Council. *Licensing and Revalidation Formal Guidance for Doctors (Draft)*. London: General Medical Council; September 2004. <http://www.gmc-uk.org/revalidation/index.htm> (cited November 2004)
18. General Medical Council. *Good Medical Practice*. London. General Medical Council; May 2001. www.gmc-uk.org (cited November 2004)
19. The Royal College of Surgeons of England. *Guidance on Surgical Practice: Criteria, Standards and Evidence*. London: The Royal College of Surgeons of England; December 2004.
20. The Royal College of Surgeons of England. *Good Surgical Practice*. London: The Royal College of Surgeons of England; September 2002. <http://www.rcseng.ac.uk/services/publications/publications/pdf/gsp2002.pdf> (cited November 2004).
21. The Royal College of Surgeons of England. *Surgical Training and the New Consultant Contract: A Royal College of Surgeons of England Guidance Paper*. London: The Royal College of Surgeons of England; December 2003. http://www.rcseng.ac.uk/services/publications/publications/pdf/new_contract.pdf (cited November 2004).
22. The Academy of Medical Royal Colleges. *Guidance on the new consultant contract and its implications for Job Plans*. London: The Academy of Medical Royal Colleges; March 2004. <http://www.aomrc.org.uk/pdfs/jobplans.pdf> (cited November 2004).
23. The Senate of Surgery. *Consultant Surgeons – Team Working in Surgical Practice*. London: The Senate of Surgery, Senate Paper 7 2002.
24. The NHS Modernisation Agency. *Agenda for Change*. London. The NHS Modernisation Agency, November 2004 http://www.modern.nhs.uk/scripts/default.asp?site_id=48 (cited November 2004)
25. The British Medical Association. *The demography of medical schools: A discussion paper*. London: The British Medical Association; June 2004. [http://www.bma.org.uk/ap.nsf/Content/DemographyMedSchls/\\$file/demography.pdf](http://www.bma.org.uk/ap.nsf/Content/DemographyMedSchls/$file/demography.pdf) (cited November 2004).
26. Lambert TW, Goldacre MJ and Turner G. *Career choices of United Kingdom medical graduates of 1999 and 2000: questionnaire surveys*. UK Medical Careers Research Group. Unit of Health Care Epidemiology. University of Oxford. *British Medical Journal* 2003; 326:194-195. DOI:10.1136/bmj.326.7382.194 (cited November 2004)

27. The Department of Health. *Flexible Career Scheme*. London: Department of Health. <http://www.dh.gov.uk/PolicyAndGuidance/HumanResourcesAndTraining/MoreStaff/FlexibleCareerScheme/fs/en> (cited November 2004).
28. The Council of Heads of Medical Schools. *Clinical Academic Staffing Levels in UK Medical and Dental Schools*. London: The Council of Heads of Medical Schools; May 2004. http://www.chms.ac.uk/Clinical_Staffing%20May%202004.pdf (cited November 2004).
29. The Academy of Medical Sciences. *Clinical academic medicine in jeopardy: Recommendations for change*. London: The Academy of Medical Sciences; June 2002. http://www.acmedsci.ac.uk/p_clinacad.pdf (cited November 2004).
30. The Department of Health. *Choice and opportunity: Modernising Medical Careers for Non-Consultant Career Grades*. London: The Department of Health; July 2003. <http://www.dh.gov.uk/assetRoot/04/06/82/90/04068290.pdf> (cited November 2004).
31. House of Commons Committee of Public Accounts *The Management of Suspensions of Clinical Staff in NHS Hospitals and Ambulance Trusts in England*. Forty-seventh Report of Session 2003-04, November 2004.
32. The Department of Health. *Growing Capacity: A new role for external healthcare providers in England*. London: The Department of Health; June 2002. <http://www.dh.gov.uk/assetRoot/04/05/95/60/04059560.pdf> (cited November 2004).
33. National Institute for Clinical Excellence. *Head injury – Triage, assessment, investigation and early management of head injury in infants, children and adults*. London: The National Institute for Clinical Excellence. June 2003. <http://www.nice.org.uk/page.aspx?o=74657> (cited November 2004).
34. Department of Health. *Report of the Paediatric and Congenital Cardiac Services Review Group*. London: The Department of Health; November 2002. <http://www.advisorybodies.doh.gov.uk/childcardiac/reviewnov02.pdf> (cited January 2005).
35. Welsh Assembly Government. *The Review of Health and Social Care in Wales*. The Report of the Project Team advised by Derek Wanless. Cardiff: Welsh Assembly Government, June 2003. <http://www.wales.gov.uk/subieconomics/hsc-review-e.htm>
36. The Shipman Inquiry. *Fifth Report: Safeguarding Patients – Lessons from the Past, Proposals for the Future*. December 2004. <http://www.the-shipman-inquiry.org.uk/fifthreport.asp> (cited January 2005).
37. The Department of Health. *Medical Revalidation Scheme to be Reviewed*, press release 2004/0453. London: The Department of Health; 17 December 2004. http://www.dh.gov.uk/PublicationsAndStatistics/PressReleases/PressReleasesNotices/fs/en?CONTENT_ID=4098833&chk=T41hTq (cited January 2005).

Acknowledgements

The College wishes to thank members of the WRT for their assistance and hopes that the positive working relationship that has developed will continue to be mutually beneficial.

The College also wishes to thank workforce representatives from the SACs and specialist associations for their assistance and support, the Welsh Assembly Government for its support and guidance and all others who contributed to the document.



The Royal College of Surgeons of England

35–43 Lincoln's Inn Fields

London WC2A 3PE

T: 020 7405 3474

W: www.rcseng.ac.uk

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