

**DEPARTMENT OF HEALTH, SOCIAL SERVICES
AND PUBLIC SAFETY**

**WORKFORCE PLANNING REVIEW – MEDICAL
PROFESSION**

Final Report

March 2003

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RE0203001/SF

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1. EXECUTIVE SUMMARY

1.1 Introduction

This review is one of a series of reviews which the Department of Health, Social Services and Public Safety (DHSSPS) is undertaking to inform the planning and provision of health and social services staff over the next five to ten years, and covers the professional medical staff group. This group includes Consultants, GPs, Non-consultant Career Grades and all grades of doctors in training.

The aim of the review was to investigate, within the context of workforce planning and deployment, current and future supply and demand factors that will impact on the delivery and development of professional medical services over the next 5 – 10 years.

The detailed terms of reference included:

- an analysis of the current medical workforce in Northern Ireland;
- an analysis of current and future recruitment and retention issues; and
- a prediction of the future supply of the workforce and demand.

The review set out the following key elements:

- the predicted number of medical professionals required over the next five to ten years;
- a model that can be applied to predict trends in the supply and demand of medical professionals;
- a model identifying the parameters that will impact on the supply and demand of these professionals within the context of developments both within the professions and in the wider operating environment including economic context and society's requirements; and
- identifies current and indicative future trends in the development of these services.

The review was overseen by a Steering Group established by the DHSSPS and chaired by Director of Human Resources (DHSSPS). The group approved the project approach, made recommendations as to involvement from the service and reviewed the initial findings and draft report prior to approval in its final form. This Steering Group also acted as a forum for discussion and debate around the assumptions to be used for the modelling to ensure they reflected the experiences of those in the service.

The work format consisted of key informant interviews, reviews of relevant literature and work to date and data modelling of current workforce data.

1.2 Context

This review was carried out against a background of continuous change and development in the service and took account of a number of key strategic issues and documents which will impact on the future delivery of service in Northern Ireland, including:

- The Acute Hospitals Review;
- Building the Way Forward in Primary Care;
- Priorities for Action 2002 / 03;
- European Working Time Directive;
- New Consultant's Contract;
- New GP Contract;
- New Deal for Junior Doctors.

1.3 Workforce Structure

The data used for the review was the HRMS Payroll Information as at September 2001 as supplied by the DHSSPS, supplemented by information supplied by the Northern Ireland Council for Postgraduate Medical and Dental Education (NICPMDE) and the Central Services Agency (CSA). Whilst it was recognised that discrepancies exist with regards to how individual trusts have categorised staff, it was felt that for overall trends it was sufficiently robust and the most accurate available within the timescale of the project. All figures quoted are for headcount (as opposed to whole time equivalents).

1.3.1 Consultants

As at September 2001, there were 929 Consultants employed. 59% of them are aged 40 –55, with a further 17% over 55. Forty-nine Consultants are over 60 years of age. Only 22% are female, which is in marked contrast to the balance of current medical students where over 60% are female.

23% work part time, however, the information available does not distinguish between those staff who have part-time HPSS contracts due to shared posts, such as with the University, those with “maximum part-time” contracts and those who are “genuine” part-time.

1.3.2 Non-Consultant Career Grades (NCCG)

This group of 188 covers Associate Specialists and Staff Graders. Total numbers have risen by 38% in the last four years, all in Staff Graders. The group is relatively young (70% being under 45), predominantly female (60%), and 31% work part-time.

1.3.3 Specialist Registrars (SpR)

There were 471 Specialist Registrars and 42 GP Registrars in 2001. Of the Specialist Registrars, 90% are under 40, and 40% are female. The percentage that is female has risen by 6% from 34% in the last four years. Only 7% of the group work part-time.

1.3.4 Senior House Officers (SHO)

There were 720 SHO on the payroll in September 2001, of which 76% are under 30, with a small proportion (4%) being over 40. 45% of the group are female and only 3% work part-time.

1.3.5 Pre-registration House Officers (PRHO)

There were 188 in September, but this will rise to 212 in August 2002. 94% are under 30, and 57% are female.

1.3.6 Other

The “Other” group consists of staff classified as hospital practitioners, general / medical practitioners and medical officers, and are principally employed on a sessional basis reflected in the fact that 86% are part-time. The age range is wide and evenly spread, and 49% are female.

1.3.7 General Practitioners (GPs)

There are 1,069 GP principals, 75% of who are under 50, with 4% (48) currently over 60. 23% are female - of whom 41% work part-time. There are also approximately 160 – 180 registered GPs in Northern Ireland who are not working as GP principals, many of whom work on a sessional or locum basis.

1.4 Key Issues – Supply

During the key stakeholder interviews, a number of major supply issues were discussed.

1.4.1 Consultants

Many consultants are looking to retire early, or posts are proving difficult to fill, because they are no longer attractive work prospects. Factors contributing towards this include high levels of on-call, and the increasing pressure which changes to junior doctors’ hours and the consequent lack of junior doctors are putting on consultants to make this on-call commitment even higher.

Poor infrastructure in some trusts, for example, the physical estate or lack of theatre time, or nursing support, and the lack of availability of private practice in many areas does not make working in Northern Ireland attractive to consultants from outwith the province. The opposite is also true in that posts in the rest of the UK are often more attractive to Northern Irish doctors than remaining in the province.

1.4.2 Vulnerability of small sites

Where small sites are struggling to cover with limited numbers of consultants, the loss of one person can have a major impact on the site's ability to maintain a service. It puts extreme pressure on the remaining consultants, making their posts even less attractive. Once several vacancies arise in one specialty, the ability to recruit is extremely limited, as no one wants to take on a short-handed service.

1.4.3 UK shortages and Strategic Overview

There are a number of specialties, such as radiology, anaesthetics and laboratory medicine, where there are significant shortages in consultant staff throughout the UK. The current systems in place in Northern Ireland result in a mixture of organisations determining posts and how they should be filled within each specialty. In these circumstances the most pressing service needs in the province as a whole may not be addressed or filled as a priority, nor does it enable staff to be readily moved around the province should a new pressure within a specialty arise. A more strategic approach could potentially reduce some of these problems and ensure priorities are addressed to the overall benefit of the service.

1.4.4 Capacity constraints – Queens University Belfast Medical School

In recent years the number of undergraduate places made available at Queens has been increasing. However, this has been at a steady but gradual rate, and the Medical School has now reached its current capacity. This applies to both teaching staff and facilities such as clinical simulation. A step change in investment is needed if undergraduate numbers are to continue to expand.

1.4.5 Capacity constraints – in service training

The current major constraint restricting the system in its ability to produce more consultants in the short-term is in relation to available capacity for in service training. This is particularly so for Specialist Registrars. Whilst this is the case for some specialties, it does not apply to all, and work needs to be carried out on a specialty basis to determine those areas where additional training posts can be established in the short-term.

1.4.6 Male / Female split

At present more than 60% of new undergraduate medical students are female, as opposed to 22% of current consultants. Unless there is a concerted effort made to facilitate more family friendly policies, with flexible training and more imaginative working patterns (and in some areas a change in attitude), this will contribute to a significant shortage of consultants across all specialties in the future, and a high proportion of the current investment in undergraduate medical students will be lost.

1.4.7 GPs - Availability of Trained Staff

In Northern Ireland there are approximately 160-180 trained GPs who are not working as GP Principals. Whilst some of these may be looking for a permanent position within a practice, a large number of them enjoy the benefits which locum or sessional work provides, particularly with regards to part-time working and family friendly hours. Many also do not wish to make the business commitment of becoming part of a practice, which a principal position requires.

At present there is not a shortage of GPs in the province. However, both the changes proposed to future GP contracts and the move to a more primary care focused pattern of service delivery are likely to have an impact on the number of GP posts (whether as principals or otherwise) required across the province. Expansion to the level envisaged in, for example, the Acute Hospitals Review of an increase of 25% will result in a shortage of GPs unless an increased number of trainees are planned for in the future.

1.5 Key Issues – Demand and Other Factors

1.5.1 Service Pressures

Acute services are experiencing increasing pressures, from changing demographics, increasing admissions, pressures on waiting lists, delays in discharging elderly patients to the community, increased public expectations, changing care needs, advances in medical technology or resource constraints. This is alongside changing legislation with regards to working conditions, including the European Working Time Directive, and qualitative aspects such as clinical governance.

Primary care and general practice are experiencing pressure from areas such as care in the community, health promotion, screening of high risk groups, demand for treatment and management of chronic disease arising from a growing elderly population, diversification in areas such as palliative care, hospital-at-home and minor surgery. These are inextricably linked with the current drive to develop the role of primary care to achieve greater integration of service delivery with secondary care and remove some of the current pressures on the hospital system, but this is in turn creating pressure elsewhere.

1.5.2 Service Configuration

It is clear that given the current and projected shortages of doctors, not just at consultant level, across a range of specialties, the present configurations of services are not sustainable. Irrespective of any other pressures, the service is unable to deliver on the European Working Time Directive or the New Deal for Junior Doctors, both of which are now legal requirements.

The outcome of the discussions on service configuration will have a significant impact on workforce planning and will enable detailed projections

to be made at a site and specialty level. Models will require regular updating as progress is made in these discussions.

1.5.3 Changes to GP and Consultant Contracts

National negotiations are currently ongoing with regards to GP and Consultant's contracts and the outcomes of these are not yet finalised. However, they are likely to have an impact on the level of hours worked by senior staff and therefore the manpower requirements needed to compensate for potential reductions.

1.5.4 Specialisation vs. Generalisation

There is an increasing conflict within the service between specialisation and generalisation of doctors. The current pattern of training provision and the impact of clinical governance and quality standards are some of the factors driving the move towards increased specialisation. However, this is resulting in an increased difficulty in covering areas such as medical and surgical on-calls, where specialised staff are not willing to provide diagnosis or undertake procedures which they do not carry out on a regular basis. It is also resulting in a difficulty in providing cover at smaller sites where generalists are needed and there are not sufficient volumes of activity to justify specialist cover.

Whilst some of the professional colleges are recognising this as an issue, further work needs to be carried out to resolve it. It creates a tension between service providers and the medical and training bodies and this needs to be addressed. Consultation on the creation of a Medical Education Standards Board has been completed and proposals from this should enable the province to move forward in finding solutions to the problem.

1.5.5 Specialty specific

Every specialty and sub-specialty is different, and there are a large number to be considered. The broad-brush approach taken in this review can only be used as a starting point and more detailed work is needed at a much lower level to provide accurate projections. Each specialty will have varying requirements and the solutions for each will also differ.

1.5.6 Determination of Number of Posts and the Roles of Doctors in Training

At present the number of PRHO posts available per annum is primarily dictated by the need to ensure posts are available for all graduates from Queen's Medical School. This has recently been increased in recognition of the impact of the New Deal on Junior Doctors Hours.

The number of Specialist Registrar posts are centrally controlled and based on anticipated numbers of consultant vacancies as a result of factors such as service expansion and retirements. This means that there is no over-supply of consultant level staff in the province, but also means that increasing the number of consultant staff from within the system cannot be achieved quickly.

These factors have also resulted in a “surplus” of staff at SHO grade, with significant numbers of training doctors experiencing difficulties and time delays in securing a Specialist Registrar post with which to progress their training.

1.5.7 New Ways of Working

Significant work has taken place throughout the UK to look at new ways of working, primarily driven by the need to ensure compliance with the New Deal. Work in Northern Ireland is being taken forward by the Implementation Group, but there is still a significant amount of work to be done. Experience so far in Northern Ireland has shown that a major limiting factor in taking some of this work forward is the shortage of nurses and other healthcare professionals available to fulfil alternative or additional roles.

1.5.8 Non-consultant Career Grades (NCCGs)

Non-consultant career grade staff are increasingly being used to support consultant led services in hospitals. Whilst concerns have been expressed as to the professional linkages (e.g. with Royal Colleges) and the need to ensure requirements for Continuing Professional Development are met, these grades could make a significant contribution to helping resolve manpower issues.

1.6 Data Modelling

1.6.1 Assumptions

The baseline data used was supplied by the DHSSPS and was based on the annual Trusts’ payroll download as at September 2001. This was supplemented by data provided by NICPMDE and CSA. A series of assumptions was developed with the Steering Group and applied to the data:

Retirements: Current retirement age of 62 dropping steadily to 59 after ten years.

Other Leavers: The DHSSPS completed an analysis of staff leaving in 2001 (excluding retirements) and a percentage estimate was calculated for each grade of staff. Most were considered realistic but the percentage for PRHO staff was dropped following discussion with the steering group. The final percentages were Consultants – 3%, NCCG – 5%, SpR – 4%, SHO – 4%, PRHO – 1%, Other – 8%, GPs – 1%.

Current Vacancies: Based on the DHSSPS annual review (Dr Woods), 8% was applied for Consultants. From discussions with the NICPMDE no vacancies were assumed for SpR and PRHO levels. On anecdotal evidence, 20 vacancies were included for SHO posts and none for GP principals.

Loss to Workforce Due to Work / Life Balance: This is to compensate for the number of staff wishing to move to part-time working, as a result of the increasing number of females entering the profession. For Consultants, GPs and SpRs it is assumed that an additional 1% of the workforce per annum wishes to move to part-time working, and that this percentage rises steadily to

2.5% per annum over ten years. For all other staff groups it has been assumed that there will be an increase of 1% per annum.

Working Time Directive: The impact of the WTD on Consultants and GPs is assumed to be included in the increase to workload (see below). For SpR, SHO, PRHO and full-time Staff Graders it is assumed that a 14% increase in staff are required from 2003/04 and a further 14% required from 2008/09. For SHO and PRHO it is also assumed that the impact of this increase will be reduced by a third as a result of a transfer of workload to non-junior doctor staff.

Workload Projections: An increase of 40% in Consultants and 25% in GPs over ten years has been assumed, along with a 30% increase in NCCG posts over the first five years. Sensitivity modelling has also been carried out on an increase of 60% of Consultants and 40% of GPs.

Annual Completion of Training Grades: It is assumed that it currently takes 1 year to complete PRHO training, 4 years to complete SHO training, 1 year for GP Registrar training and 5 years for SpR training.

1.6.2 Models

The following table sets out the results of the data modelling for each staff group. It shows the requirement for staff each year based on current posts and additional service requirements within each grade of staff:

Table 1.6.1

Projected Requirements for Staff per annum

	2002	03/	04/	05/	06/	07/	08/	09/	10/	11/
	/03	04	05	06	07	08	09	10	11	12
Consultants	136	137	101	112	112	112	125	126	127	137
GPs	75	77	80	87	83	89	98	105	107	114
SpR	118	133	139	144	149	154	163	169	176	181
NCCG	34	32	29	23	20	15	20	17	17	21
GP Reg	75	77	80	87	83	89	98	105	107	114
SHO	226	243	241	246	251	256	265	271	277	283
PRHO	216	221	226	231	236	240	246	252	258	264

It is important to bear in mind that this is the number of staff required per annum and therefore covers staff leaving requiring replacement. Therefore for the training grades (SpR, SHO and PRHO), the above numbers do not equate to the number of qualified staff available each year to progress to the next stage of training.

Once the current staff structures were adjusted for all of the assumptions, comparisons were then made as to requirements for “newly qualified” staff

versus staff coming through the system. The results are the following (principally shortfalls), in projected staff. (A positive figure denotes an “over-supply”):

Table 1.6.2

Shortfalls in Requirements for Staff per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
SpR	-42	-42	-2	-9	-5	0	-8	-4	1	-4
SHO	-47	-58	-56	-57	-50	-51	-69	-73	-76	-86
GP Reg	-33	-2	-3	-7	4	-2	-9	-7	-2	-7
PRHO	-38	-29	-22	-22	-22	-23	-27	-27	-27	-27
Graduates	-33	-48	-57	-62	-56	-60	-66	-72	-78	-84

This shows the projected shortfall in SpR available to fill consultant posts, SHO to fill SpR posts and so on. It is based on the assumption that the following additional posts will be funded and established each year and that any requirements from previous years are met, and these figures are therefore not cumulative. The following are required to cover additional posts for increased workloads, the WTD and additional GP Reg training posts.

Table 1.6.3

Projections for Additional Posts Requiring Funding per annum

	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	Total
Cons	37	37	37	37	37	37	37	37	37	37	370
GP	25	25	25	25	25	25	25	25	25	25	250
NCCG	19	15	11	8	4						57
SpR		13	13	13	13	13	16	16	16	16	129
GP Reg	33	2	3	7	0	2	9	7	2	7	72
Staff Grade		2	2	2	2	2	3	3	3	3	22
SHO		13	13	13	13	13	17	17	17	17	133
PRHO		3	3	3	3	3	4	4	4	4	31

(note – NCCG excludes Staff Grades, shown separately)

1.6.3 Sensitivity Analysis

By its very nature the modelling is based on a range of assumptions. Sensitivity analysis was carried out on three areas – age of retirement, length of time spent at each training grade and the increase in Consultants and GPs needed to cover increased workload. All of these had a significant impact on the numbers required at each grade and therefore highlighted the need for continuous review of the numbers as more accurate information emerges.

1.7 Conclusions and Recommendations

1.7.1 Complexity of Modelling and Overall Results

Modelling the flow and requirements for staff at each level in the training programme is complex and subject to significant variation depending on the assumptions used. However, all of the modelling indicates a need to immediately increase the number of graduates available to fill future posts, and (as is already known) an under supply of newly qualified SpR staff in the short term.

1.7.2 Shortfall in New Consultants

The current system in Northern Ireland is not producing sufficient qualified staff to meet the potential requirements for Consultant staff and work needs to be carried out in the short term to review potential ways to fill the gap in the intervening years before additional staff can be trained. Areas that should be considered include:

Retaining existing Consultants: Ways should be reviewed to encourage existing staff to remain in the health service beyond their current retirement plans. By being more imaginative with working patterns, some may be encouraged to stay. This also enables very experienced staff to be retained within the service to assist in training additional doctors. Work also needs to be carried out to ensure that NHS pension arrangements are such that consultants are not discouraged to take on different work patterns because of the potential impact on their pensionable salary.

International Recruitment: Northern Ireland should ensure it remains fully involved in UK wide initiatives to attract suitably qualified staff from abroad, either on a temporary or permanent basis.

Use of Funds: When funding becomes available to increase the number of consultant posts, this needs to be targeted sensibly, recognising where the most pressing service needs are, whilst also acknowledging that in some specialties consultant vacancies are proving difficult to fill in the short term due to the lack of candidates available.

NCCGs: There are a number of very experienced staff working at NCCG level, who may have the potential to be fast tracked to Consultant level, and this should be reviewed on a specialty basis. The future of NCCGs in Northern Ireland should also be reviewed as there is the opportunity to

develop these roles into meaningful careers in their own right, with the potential to develop significant skill and experience with which to support Consultants. However, this needs to be balanced with the need to increase the number of Consultant staff in order to provide a “Consultant delivered” service.

Use of GPs: There may be opportunities to create jobs that combine a role in general practice with a role in hospital medicine as an NCCG. There are already a number of GPs working as clinical assistants or as hospital practitioners attached to a consultant. However, such doctors usually only work one or two sessions each week and often only in an outpatient department. The suggestion here is that such doctors would work more sessions in hospital, perhaps up to five each week, and provide care in a larger number of stages in the patient journey.

Use of Other Staff to Support a Consultant Delivered Service: Whilst it is recognised that there are difficulties in recruiting and retaining staff, especially nurses, in developing alternative roles to support the medical profession, this does not mean it is an impossibility. Lessons can be learnt from for example, successes in General Practice in terms of supporting the role of “lead doctors” (i.e. those who are ultimately responsible for the medical care of patients) in the provision of care, both face-to-face and over the telephone.

1.7.3 Infrastructure Development

The solution to the shortage of medical manpower does not lie only in increasing the number of doctors and changing the skill-mix of clinical teams. It will also require the development of the supporting infrastructure – principally the use of more clerical staff and IM&T – to reduce the burden of administrative tasks currently undertaken by clinical staff.

1.7.4 Training Numbers – Specialist Registrars

Work needs to be carried out at a specialty or sub-specialty level to determine where there is potential to increase training grade numbers, especially SpR numbers in the short term, whilst ensuring criteria for training are being met. Timescales and actions required to enable expansion in other areas then need to be determined.

1.7.5 Medical School

The requirements for expanding the capacity at Queens Medical School to 250 students per annum should be determined, including a potential timescale for delivery. The potential for attracting graduates to the PRHO programme from the rest of the UK and the Republic of Ireland should also be explored, especially given that many Northern Irish medical students study in Great Britain, and there is a planned expansion in student numbers across the UK as a whole.

1.7.6 Funding for Additional Teaching Capacity

Any additional investment in training grades requires a review of the cost and infrastructure available for teaching, not only in the educational system as mentioned above, but also in the health service, where additional funding will be required to support the necessary increase in in-service training provision.

1.7.7 Family Friendly Policies / Flexible Training

The availability of family friendly policies and flexible training patterns needs to be extended if we are to retain the high number of females currently coming through medical school. Reviews should be carried out to determine ways in which this can be achieved without significant financial penalty to the employing organisation.

1.7.8 Further Research

Further research would be useful to obtain definitive data to support future modelling assumptions, such as planned retirement ages, reasons for leaving (all grades), and requirements for additional posts to cover work / life balance.

1.7.9 Service Strategies

Workforce planning is very difficult to carry out with any degree of accuracy if the future shape and provision of services is unclear. The Acute Hospitals Review (Hayes Review) is undergoing further consultation and the final outcome of the consultations on Primary Care is also awaited.

In the short term, networking arrangements across the province should be encouraged to alleviate the most severe pressures. As potential plans and strategies emerge, workforce requirements will need to be continuously reviewed.

1.7.10 Further Workforce Planning at Specialty Level

As previously mentioned, this report is only a starting point for more detailed workforce planning. By its very nature it is a broad-brush approach, and more detailed planning should be carried out on a specialty basis (not necessarily on a trust or site basis). This would enable more detailed assessments to be made of the issues and allow alternative service configurations to be modelled.

To be effective, workforce planning in the HPSS must be a continuous process, with regular reviewing of assumptions and updating of the models to reflect ongoing changes.

2. INTRODUCTION

2.1 Background

A modern health service is one that delivers care to patients in a way that is sensitive to their needs and expectations. It is a service that offers advice, support, high quality clinical care and seamless provision across care organisations. To deliver this the health service depends on its staff. It needs a workforce which has the skills and flexibility to deliver the right care at the right time to those who need it – a workforce which has the right number of staff deployed in the right places and working to the maximum of their ability.

In order to address this issue the Department of Health, Social Services and Public Safety has commissioned a review of the current provision of medical staff across Northern Ireland. The aim of the review is to inform the Department's planning in the provision of training to facilitate service continuity and development over the next five to 10 years. This report is the result of that review.

This review considers a number of changes ongoing in the Health Service which are impacting on the roles and responsibilities of staff and which will have a bearing on planning the medical workforce required in the future. These include:

- the blurring of clinical and non-clinical roles with a greater scope for other staff to perform tasks previously undertaken by medical staff;
- changing employment patterns and policies relating to family friendly working, maternity and paternity rights;
- the impact of recent and forthcoming legislation such as the European Working Time Directive; and
- changes in new technology and the use of more expensive and increasingly complex medical equipment and testing procedures.

2.2 Terms of Reference

Against this background the aim of the review was to investigate, within the context of workforce planning and deployment, current and future supply and demand factors that will impact on the delivery and development of the medical profession over the next 5 – 10 years.

The detailed terms of reference included:

- an analysis of the current medical workforce in Northern Ireland;
- an analysis of current and future recruitment and retention issues;
- a prediction of the future supply of the workforce and demand;

The review should set out the following key elements:

- the predicted number of medical professionals required over the next five to 10 years;
- a model that can be applied to predict trends in the supply and demand of medical professionals;
- the model should identify the parameters that will impact on the supply and demand of these professionals within the context of developments both within the professions and in the wider operating environment including economic context and society's requirements; and
- identify current and indicative future trends in the development of these services.

2.3 Review Methodology

2.3.1 Steering Group

The approach taken within this project has been similar to that taken in other workforce reviews recently commissioned by the Department. The project has been overseen by a Steering Group (see Appendix A) established by the Department and chaired by the Director of Human Resources (DHSSPS). The Steering Group approved the project approach, made recommendations as to involvement from the service and reviewed the initial findings and draft report prior to approval in its final form. This Steering Group also acted as a forum for discussion and debate around the assumptions to be used for the modelling to ensure they reflected the experiences of those in the service.

2.3.2 Work Format

The format for the work carried out consisted of the following:

- i. Key informant interviews with relevant personnel (see Appendix B for a list of personnel interviewed). These were held to identify the key issues affecting recruitment and retention within the profession, to gather information to inform predictions of future demand and to identify useful sources of relevant literature and data;
- ii. Review of relevant literature and work carried out to date; and
- iii. Data modelling based on centrally available workforce data and key assumptions, derived from the above review work, for projecting factors affecting supply and demand.

2.4 Structure of this Report

This report sets out the findings of the review of the medical workforce as follows:

- Section 3 – An overview of the context within which the review is taking place including key policy drivers;
- Section 4 - A breakdown of the current workforce, including current career structures and roles;

- Section 5 – Analysis of the current supply issues being faced by the profession;
- Section 6 – Analysis of the current major demand issues affecting the service and impacting on staff workloads;
- Section 7 – Modelling of the current workforce data to provide a prediction of future need against the projected supply within the workforce;
- Section 8 – Conclusions and recommendations arising from the report.

3. CONTEXT

3.1 Overview

The Health Service, by its very nature, is a continuously evolving organisation. Few aspects remain static for long, and in particular at the moment there are significant changes taking place that will affect the workforce required to deliver the service. These changes include, but are not limited to:

- Advances in medicine and clinical technology;
- Changes in the way doctors are being trained;
- Evolving roles for all staff groups;
- Increased specialisation alongside an increase in service provision in primary care;
- The balance of accessibility versus clinical governance and quality control;
- European legislation and the impact on available staff; and
- Changing expectations of service users.

This means that when considering workforce planning for the future a framework needs to be established which can be regularly and easily updated in line with evolving policies and strategies. This report therefore represents a starting point from which further work can be taken forward.

A number of associated principles for the development of workforce plans in England have been identified by the Department of Health:

- workforce development has to be built around the services and potential services the public need;
- this in turn needs to drive debate on the skills and competencies required to deliver this service;
- workforce planning needs to be integrated with service and financial planning;
- the use of a holistic approach, looking across primary, secondary and tertiary care, across staff groups, and between the health, social and voluntary care sectors;
- responsive to service changes and developments;
- supportive of multi-disciplinary training, education and working.

3.2 Northern Ireland

Whilst the above principles fully apply to any workforce planning, acknowledgement needs to be made of where the HPSS in Northern Ireland is at present with regards to

its long-term service strategies. A number of key strategic documents have been developed, the outcomes of which will determine the way forward for the provision of services across the spectrum of the HPSS from primary care to tertiary services. Key elements of these strategies that impact on workforce planning are discussed below.

3.2.1 The Acute Hospitals Review

The Health Service in Northern Ireland is considering the recommendations of the Acute Hospitals Review led by Dr Maurice Hayes, which sets out proposals for the future shape of acute services in the province.

The review highlights the current pressures that the service is under, including:

- Changing care needs;
- Public expectations with regards to quality, convenience and effectiveness;
- Demand for services;
- Advances in medical technology;
- Increasing specialisation; and
- Resource constraints (personnel and finance).

The review recommends a restructuring of services delivered from hospital sites in Northern Ireland, whilst ensuring all members of the population can access such services within one hour. It also recommends the development of managed clinical networks and local health and social care resource centres.

The outcome of this review will clearly have a significant impact on the future shape and size of the workforce, across all staff groups.

3.2.2 Building the Way Forward in Primary Care

The DHSSPS has published “Building the Way Forward in Primary Care” which sets out proposals for the future of Primary Care beyond the cessation of GP Fundholding, and includes the proposed establishment of Local Health and Social Care Groups.

There is much discussion currently in the Health Service about the future role of Primary Care. Whilst it is clear that there is a strong drive towards greater delivery of care in the Primary Care setting, the future shape of these services has not yet been clearly articulated. There is also a strong view that this cannot be resolved in isolation and has to be taken forward in conjunction with the Acute Hospitals Review.

3.2.3 Priorities for Action 2002 / 03

The “Priorities for Action” sets out the Minister’s expectations for the Health and Personal Social Services (HPSS) in the forthcoming year and the overall planning goals and key actions required to secure their achievement. Detailed priorities and actions are given for areas such as health development, primary care, workforce, winter planning and community care, acute hospital services, maternity and child health, the ambulance service, family and child care, care of older people, mental health, and learning, physical and sensory disability as well as areas such as estate and IT. These priorities will guide the detailed planning and direction that the service in Northern Ireland will take in the short-term.

3.3 UK Policies

3.3.1 European Working Time Directive

The European Working Time Directive requires that staff should not be working more than 48 hours per week. It also sets out recommendations for compensatory rest after working anti-social hours, and determines what (with regards to on-call) constitutes “work” versus “duty”. It is a current legal requirement for the NHS to implement the directive in all areas, and with all staff groups. A timetable of staged implementation has been agreed by member Governments which means that the 48 hour week will not apply to doctors in training until August 2009, with an interim 58 hour week coming in to force in August 2004, along with significant changes in rest requirements.

3.3.2 New Consultant’s Contract

National negotiations are currently ongoing with regards to a new Consultant’s contract, and it is likely that the outcome may have a significant impact with regards to, amongst other issues, hours of work and meeting the European Working Time Directive.

The NHS Confederation has been working closely with the four UK health departments in the negotiations for a new consultant contract. Progress has been slower than it has been for a new GP contract (see section 3.3.3). In October 2000, the BMA Central Consultant and Specialist Committee and the government issued its own proposals, building on the *NHS Plan* in February 2001. According to a recent publication by the NHS Confederation,¹ the ‘management side’ seeks to address many of the concerns raised by employers about the need for a clear framework of accountability and responsibility for consultants in the new contract. More importantly, it also wants a new contract to ‘help rather than hinder’ NHS organisations in modernising and improving their services. The negotiations are also seeking to address the concerns of the BMA and the consultant body with regards to workload, on-call duties, emergency work, career progression and salary levels.

¹ NHS Confederation, London 2002 “Consultant Contract Negotiations” Morgan G

The NHS Confederation reports that – at its present state of development – the new consultant contract may be expected to offer, for the NHS:

- greater control of the working week and a greater proportion of time devoted to direct clinical care;
- a new framework for job plans;
- an end to fixed and flexible sessions, with a time-tabled programme of commitments and an expectation that consultants will be on-site for all programmed activities;
- direct links between pay progression, commitment and delivery;
- clear rules on access to private practice.

Similarly, the NHS Confederation reports that it expects the new contract to offer, for consultants:

- a clear cap on workload growth through a time-tabled working week;
- monetary recognition of on-call and emergency work;
- an increase in basic pay, with a higher starting salary and access to further pay progression (including a substantial increase in lifetime earnings);
- a new concept of ‘phased consultant careers’ with career-long pay progression and different patterns of work and remuneration.

There is no set date for the implementation of this contract. This will depend upon progress in the remaining stages of negotiation.

3.3.3 New GP Contract

Since July 2001, the NHS Confederation has also been developing a new general medical services contract for GPs in negotiation with the General Practitioners Committee of the British Medical Association. This has been done on behalf of the departments of health of the four countries of the United Kingdom. The NHS Confederation published a ‘framework document’ for a new GP contract for consultation on 23 April 2002.

It is proposed that the new GP contract will be between primary care organisations (PCOs) and GP *practices* as opposed to a contract with individual doctors as at present. This is intended to enable primary care practices to employ a wider range of staff and to receive income related to patient workload rather than to the number of GP principals and their individual list sizes. This has the potential to enable more care to be provided without necessarily increasing the number of GPs in a practice.

Significantly, it is intended that GP practices will have the opportunity to receive income from a number of sources, including payments for providing enhanced services over and above the basic range of GP services; the provision of training and education levies; and private income. Payments will also be available through a ‘quality framework’ to allow practices to

substantially increase their income by achieving a series of quality standards. The proposed contract is therefore intended to increase the profitability of general practice by creating additional personal earning opportunities for GPs. This will enable the expansion of services and allow individual GPs to control and manage their personal workload more effectively. The new contract is also expected to sustain a greater range of employment options, allowing GPs to work more flexibly and in family-friendly ways. These various changes should enable greater recruitment and retention by offering a more profitable career with a more varied, interesting and manageable workload.

Finally, a crucial point of the new contract is that it proposes to remove the formerly obligatory commitment for GPs to provide out-of-hours services to patients. This should prove very popular and, subject to its financial implications, should provide a major boost to recruitment and retention.

The Government is aiming for acceptance of the detailed contract in the autumn, with implementation across the UK to follow as soon as possible within each Health Department. Phased implementation will take place from April 2003, with the timescale for full implementation dependent on the legislative process and timetables within each country.

3.3.4 New Deal for Junior Doctors

The introduction of the new banded contract for junior doctors has produced a strong incentive to deliver New Deal hours and rest requirements. The hours and rest limits applied to junior doctors are now enshrined within their legally binding contract of employment. Hours of Actual Duty limits are included in contracts from 1st December 2000 for all junior doctors, with Hours of Actual Work and Rest limits included in the PRHO contract from 1st August 2001 and for all other junior doctors from 1st August 2003. Persistence of working patterns outside these limits constitutes a breach of contract, as well as attracting the financial penalty of the Band 3 multiplier.

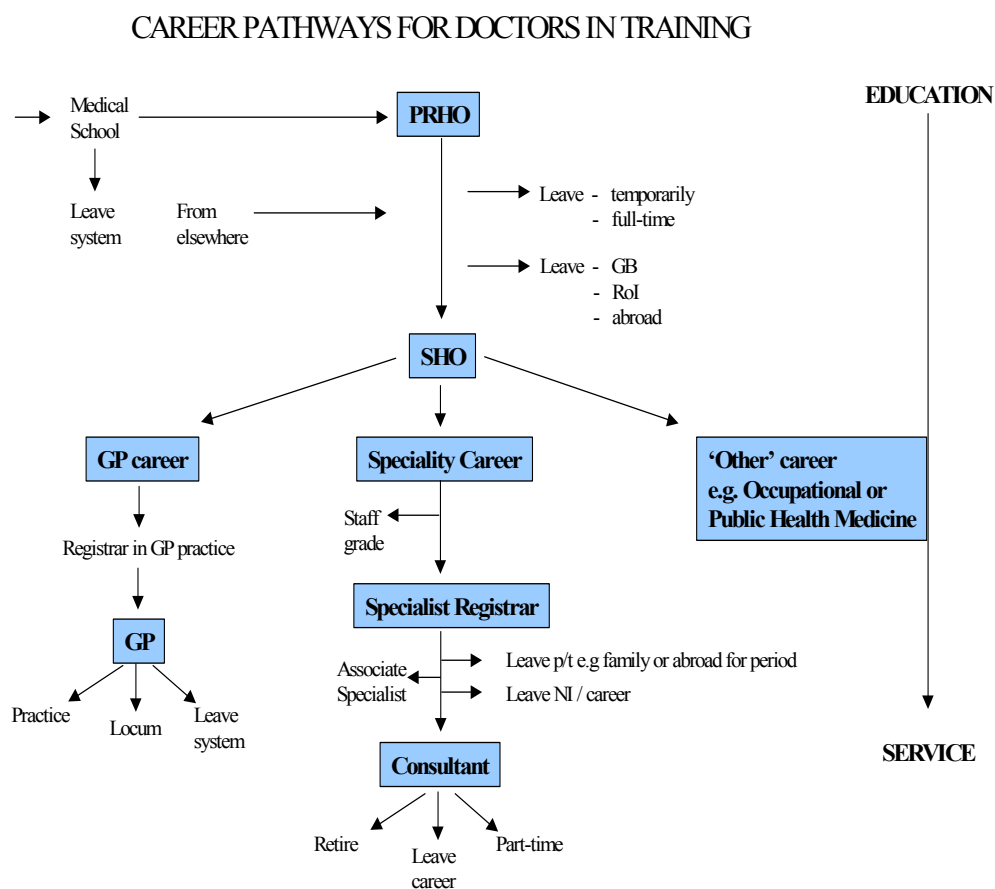
Compliance with the New Deal also ensures compliance at present with the European Working Time Directive.

4. THE MEDICAL WORKFORCE

4.1 Workforce Structure

The medical workforce is made up of a number of different grades, (based principally around the required training for doctors,) for GP, consultant or non-consultant career structures. The following sets out a brief resume of the available career structure for doctors and should be reviewed in conjunction with Figure 4.1.

Figure 4.1
Career Pathways for Doctors in Training



4.1.1 University Graduates

Students require 5 years at University before they are able to commence their pre-registration House Officer training. At present the Medical School at Queens University, Belfast (QUB) accommodates approximately 180 students per annum. Projected output of graduates at February 2002 is dropping, with 183 expected to graduate in 2002, 173 in 2003, and 169 in 2004 and 2005. Students from other accredited Medical schools in the rest of

the UK and the Republic of Ireland are also able to continue their medical training in Northern Ireland.

4.1.2 Pre-registration House Officer (PRHO)

The Northern Ireland Council for Post Graduate Medical and Dental Education (NICPMDE) is responsible for the management of the establishment and placement into PRHO posts in the province. The NICPMDE (via the DHSSPS) fund the basic salaries, with trusts funding the additional pay supplements relating to the hours worked and intensity of workload which determine the pay banding applied. Additional posts will only be created and approved if they meet training requirements. An increase in posts has recently been agreed to help meet the requirements of the WTD, and 212 posts will be available from August 2002. Intakes are 6 monthly (August and February), with most students commencing in August.

Final year medical students are provided with information on the available PRHO posts and the Council provides a matching service. A PRHO normally takes one year to complete this stage including their general examination. The system ensures that there are sufficient PRHO places in Northern Ireland for all students graduating from Queens, and applications are also accepted from elsewhere. Given that the current number of posts now exceeds the number of graduating students, this is an increasing necessity.

The New Deal for junior doctors requires that irrespective of the shift pattern, total hours of work should not exceed 56 hours per week, with strict rules around levels of intensity and available hours of rest. For less intense specialties this means that a junior doctor's rostered hours may be more than 56 as long as these hours incorporate sufficient rest periods within them e.g. when on an overnight on-call.

A number of junior doctors (approx. 10 – 20) leave the system at the end of their PRHO year, for example to work in Australia or elsewhere, either on a temporary or permanent basis. However, their whereabouts once they have left are not tracked, so it is not known how many come back to continue their training in Northern Ireland at a later stage.

4.1.3 Senior House Officer (SHO)

SHO posts are, in the main, advertised and managed by the Trusts and are based on 6 monthly rotations. The length of time and range of specialties in which an SHO gains experience will be mainly determined by his or her future career aspirations, as each specialty will have a range of requirements and qualification criteria to be met before an SHO can apply for a Specialist Registrar (SpR) post. Generally 2- 3 years is the minimum level of experience required, with the majority of staff currently taking an average of four years at this grade.

Whilst the NICPMDE gathers information from Trusts with regards to their SHO posts, and funds 50% of their basic salary, the junior doctors are not tracked through the system in the same way as PRHO and Specialist Registrars, nor is the Council involved in their placements. However, again,

new SHO posts require to be approved by the Council on the basis of their training content.

There is a central rotation scheme for basic surgery (64 posts from August 2002,) and psychiatry (15). For surgery this is an initial two-year (4 x 6 month) rotation scheme with appraisal for a potential third year. Candidates in Northern Ireland cannot apply for a SpR post in Surgery unless they have participated in this scheme, or a similar scheme elsewhere in the UK.

At present in Northern Ireland there is a surplus of experienced SHOs compared to the number of SpR posts available each year. A number of doctors are taking some time to secure a SpR post and many are working as locums or as “Trust Doctors” in the meantime. It is also likely that some are moving away from the province to work elsewhere, but unfortunately the current information systems do not enable this to be quantified.

4.1.4 Specialist Registrar (SpR)

SpR posts are again managed centrally by the NICPMDE. Previously the Council funded trusts for 50% of the basic salary, but that has now increased to 100% for new posts, with trusts funding any banding uplift applicable. On successful appointment to a SpR post the doctor is allocated a National Training Number (NTN) which is used to track them through the system.

Most specialties require at least 5 years experience (surgery 6 years) prior to obtaining the Certificate of Completion of Specialist Training (CCST) which entitles a doctor to apply for a Consultant post. A SpR can be interviewed for a consultant level post up to three months prior to their CCST, and is entitled to remain in their SpR post for 6 months after attaining their CCST. This can be extended for a further six months at the discretion of the NICPMDE to enable further sub-specialty experience to be gained or if there is particular difficulty in obtaining a consultant post. Beyond this period the doctor is required to find alternative employment (e.g. as a locum) to enable a new SpR to take up the training post.

The number of SpR posts available at present is primarily determined by the anticipated number of consultant vacancies in future years. The training and supervision required to ensure the post provides the relevant level of experience also imposes restrictions on the number of posts that can be created.

There are several types of SpR posts in the system. Type 1 posts lead to CCST and can be split between UK NTNs and Visitor Training Numbers (VTNs), who are overseas medics who do not have a right of residency. Type II posts are Fixed Term Training Appointments (FTTA) for overseas doctors which do not lead to CCST. At April 2002 the NICPMDE had 372 NTNs, 18 VTNs and 46 FTAs (total 436). There are also a number of LAT (Locum Appointment for Training) posts (currently 33), where staff fill a locum post to allow other SpR to undertake, for example, time in a research post as part of their overall training programme. LATs may (if agreed individually in advance) be able to claim this time in post as relevant experience when progressing towards their CCST.

4.1.5 Non-consultant Career Grades (NCCGs)

These consist of Staff Grade and Associate Specialist posts and are generally taken up by staff who have completed part or all of their SpR training, or experienced SHOs. They are created and managed by trusts on the basis of service need. Many of these staff may not wish to continue to Consultant level, and these posts often offer better conditions with regards to working hours and requirements to participate in on-call arrangements.

These posts do raise concerns about the availability and requirements for Continuing Professional Development (CPD), professional accountabilities and linkages to the relevant Royal Colleges. Currently, trusts deal with these issues in a variety of ways, but the medical profession as a whole recognises that a more formal structure would be useful for these posts.

4.1.6 General Practitioner Training (GP)

All GP trainees must complete their PRHO year before undertaking two years on SHO rotations in relevant specialties and one year as a GP Registrar attached to a GP practice. This can either be as part of a 3 year integrated scheme managed by the NICPMDE (with 34 places available from Aug 2002) or as a 2-year self-constructed scheme followed by a year as a GP Registrar. There are currently 42 GP Registrar posts in N.I. and these are funded by the CSA (Central Services Agency) on behalf of the DHSSPS. The Royal College of General Practitioners and the Joint Committee on Post Graduate Training for General Practice consider that the GP registrar period of training should be expanded from 12 months to 18 months to enable registrars to be adequately trained.

4.1.7 Flexible Training

Flexible training is, in theory, available to junior doctors. For PRHO and SpR posts this is managed by the NICPMDE. Candidates must justify that training on a full time basis would not be practicable. Not surprisingly, the vast majority of flexible trainees are women.

At January 2002, there were no flexible trainees at PRHO level, 1 SHO and 22 SpR. There was also a waiting list of candidates (1 PRHO and 10 SpR) waiting for funding. Job shares are also encouraged e.g. in areas such as psychiatry.

At present flexible training sessions include participation by the doctor in on-call and emergency duties along with their colleagues at the same grade. The New Deal for junior doctors dictates that if a flexible trainee is participating in an illegal rota (and in NI most of the junior doctors rotas are still illegal), or working more than 40 hours a week, they are entitled to full pay irrespective of the actual hours which they are working. This can therefore make flexible trainees very expensive, but is also seen as unfair on their other colleagues working full time. Not surprisingly, trusts are currently reluctant to fund the additional costs not covered by the NICPMDE.

4.1.8 GP Retainer Scheme

A retainer scheme is centrally available to encourage qualified GPs back to work after a career break, and currently there are 45 places. It provides four fixed sessions a week and is available for five years. It also allows for an additional two sessions in General Medical Services (GMS) related work e.g. family planning if desired. Extensions are only available at the end of the five-year term if there are unfilled places, and this is not usually the case. Currently there are no males on the scheme.

4.2 Workforce Composition

Appendix C provides a series of tables showing the composition of the Consultant, Non-consultant Career Grade, Specialist Registrar, SHO, PRHO, GP and Other staff groups and key trends, in terms of:

- Department/speciality;
- Trust;
- Age;
- Gender; and
- Part-time/Full-time working.

For the purposes of this report, the specialties have been amalgamated into 15 major groups. Appendix D lists the specialties and groupings.

All of the information is based on the HRMS annual return to the DHSSPS as at September 2001, or information provided by the Central Services Agency (CSA) or NICPMDE.

Whilst it is recognised that there may be minor discrepancies in the payroll data e.g. differences between trusts in classification of staff to specialties, and that some changes will have occurred since September, the overall data is considered robust enough for the level of data modelling required.

The numbers represent headcount, not whole time equivalents (w.t.e.).

The key workforce trends are outlined below.

4.2.1 Total Workforce Numbers

Table 4.1 shows the total number in each workforce group in 2001:

Table 4.1

Medical Workforce (2001)

Workforce Group	Number in Workforce	Change 1998-2001	% Change 1998-2001
Consultants	929	+58	+7%
Non-consultant career grades	188	+52	+38%
Specialist Registrars	471	+39	+9%
Senior House Officers	720	+38	+6%
Pre-Registration House Officers	188	+4	+2%
Other	244	-65	-21%
General Practitioner Registrars	42		
General Practitioner Principals	1,069	+27	+3%

“Other” includes hospital / general / medical practitioners and medical officers on the HRMS payroll

Source: HRMS September 2001

4.2.2 Consultants

In 2001 there were 929 Consultants, the largest proportion of whom worked in medical specialties (18%) surgical specialties (19%) and anaesthetics (17%). Between 1998 and 2001, there was an overall growth of 7% (58) with the largest growth in absolute terms being in Pathology (14). Greatest Consultant numbers are present in the Royal Group of Hospitals and Belfast City Hospitals Trust which account for 312 (34 % of the total workforce).

59% of the 929 Consultants are aged 40 – 55, and 17% are over 55, with 49 consultants already over 60 years of age.

The gender split within the Consultant group has changed only slightly between 1998 and 2001, with a 1% increase in the proportion of females in the workforce. The balance in 2001 was:

- Female 22% workforce; and
- Male 78% workforce.

This is in marked contrast to the balance of current medical students where over 60% are female.

The number of Consultants working part-time has decreased slightly, from 216 in 1998 to 213 in 2001, 23% of whom are women. However, the information available does not identify between those staff who have part-time HPSS contracts due to shared posts, such as with the University, those with “maximum part-time” contracts and those who are “genuine” part-time.

4.2.3 Non-Consultant Career Grades

The non-consultant career grade workforce covers staff graders and associate specialists. Total numbers stood at 136 in 1998 but had risen to 188 by 2001 – a 38% increase, all in Staff Graders.

In 2001, the main work areas for non-consultant career grades were in A&E, Paediatrics, Community and General Medicine.

The group is relatively young, with 70% being aged under 45 in 2001. The workforce is predominantly female (60%), a percentage increase of 3 % since 1998.

Part-time working has increased in recent years – 26% of the group worked part-time in 1998 and 31% were working part-time in 2001, of whom 93% were women.

4.2.4 Specialist Registrars

The number of Specialist Registrars has grown by 9% since 1998 with a total workforce of 471 in 2001. This does not include 42 GP Registrars on the GP training scheme.

90% of the 471 SpRs are aged 26 – 40, and 40% of the workforce are female, an increase of 6% since 1998. The percentage of the workforce working part-time has remained steady at 7%, and 70% of these are women.

4.2.5 SHO

The number of SHO posts has also grown in the last four years, by 6% to 720, principally in Anaesthetics and A&E. 76% of the 720 SHOs are under 30, with 4% (36) being over 40. The fact that 24% are over 30 may reflect the difficulties that many are experiencing in obtaining SpR posts, and the length of time many of them are therefore spending at the SHO grade.

45% of the group are female and this has remained steady over the last four years. Only 3% work part-time.

4.2.6 PRHO

PRHO posts have remained fairly static over the last few years, with 188 in September 2001 although increases to 212 by August 2002 have been agreed. 94% are under 30 and 57% are female.

4.2.7 Other

The “Other” group consists of staff classified on the HRMS system as hospital practitioners, general/medical practitioners, and medical officers. They mainly work in community trusts in A&E, geriatrics, dermatology, community and family medicine and are principally employed on a sessional basis, and therefore not surprisingly 86% are part-time. The numbers have dropped from 309 in 1998 to 244 in 2001.

The age range is very wide and relatively evenly spread within ages 30 to 60 years and the percentage of females has remained static at about 49%.

4.2.8 General Practitioners (GPs)

There are 1,069 GP principals in Northern Ireland 75% of whom are under 50 with 4% (48) over 60.

Only 23% are female, 41% of whom work part-time.

However, it is known that there are also approximately 160-180 registered GPs in Northern Ireland who are not working as GP Principals. Many of these are working on a sessional or locum basis, but it is not known how many are actively looking for a principal's position.

5. KEY ISSUES - SUPPLY

Set out below are the major supply issues raised during the key stakeholder interviews.

5.1 Consultants

5.1.1 Unattractive posts

Many consultants are looking to retire early, or posts are proving difficult to fill, because they are no longer attractive work prospects. Factors contributing towards this include high levels of on-call, and the increasing pressure which changes to junior doctors' hours and the consequent lack of junior doctors are putting on consultants to make this on-call commitment even higher.

Poor infrastructure in some trusts, for example, the physical estate or lack of theatre time, or nursing support, and the lack of availability of private practice in many areas does not make working in Northern Ireland attractive to consultants from outwith the province. The opposite is also true in that posts in the rest of the UK are often more attractive to Northern Irish doctors than remaining in the province.

One third of respondents to the Royal College of Physicians, London, recent hospital consultant questionnaire² reported that at least one of their colleagues had opted out of the acute general medicine rota, and one third indicated that they too would like to opt out of on-call duties. And the Royal College of Surgeons of England's report³ suggests that freedom from on-call duties may be required if senior surgeons are to be encouraged to stay in their posts beyond the current average retirement age of 60 years. This changing attitude towards work/personal-life balance (in part, probably a reflection of an increasing proportion of women doctors in senior positions) represents an irrevocable change in the health service.

One of the underlying problems is that all consultants are expected to perform in the same way. This is especially so with surgeons who are, for example, expected to undertake the same number of outpatient, operating and teaching sessions as their consultant colleagues, regardless of their age. However, according to the Royal College of Surgeons in England, most surgeons, especially those in their earlier years, would welcome more operating sessions than the average of 2-4 scheduled half-day elective operating lists per week. Standing for long periods at an operating table becomes less easy as one gets older, whilst one's overall clinical knowledge and experience becomes greater with age. Therefore, to improve clinical performance, provide more effective teaching and to increase staff retention rates beyond the average retirement age, it may be appropriate to enable more senior

² Royal College of Physicians, London, 2002 "Coping with Pressures in Acute Medicine: 3rd RCP consultant questionnaire survey".

³ Royal College of Surgeons of England. London 2001 "The Surgical Workforce in the New NHS"

surgeons to undertake proportionately more outpatient and teaching sessions and fewer operating sessions and for their younger colleagues to operate more.

5.1.2 Vulnerability of small sites

Where small sites are struggling to cover with limited numbers of consultants, the loss of one person can have a major impact on the site's ability to maintain a service. It puts extreme pressure on the remaining consultants, making their posts even less attractive. Once several vacancies arise in one specialty, the ability to recruit is extremely limited, as no one wants to take on a short-handed service.

5.1.3 UK shortages

There are a number of specialties, such as radiology, anaesthetics and laboratory medicine, where there are significant shortages in consultant staff throughout the UK. This results in trusts "robbing Peter to pay Paul" with organisations offering differing remuneration packages to encourage staff across, so resulting in a staff shortage elsewhere. Within the province, no strategic overview is taken as to where the key shortages are and which posts are priorities for filling, as appointments are generally managed on a trust rather than a wider basis.

5.2 Doctors in Training

5.2.1 Capacity constraints – Queens Medical School

In recent years the number of undergraduate places made available at Queens has been increasing. However, this has been at an incremental rate, and the Medical School has now reached its current capacity. This applies to both teaching staff and facilities such as clinical simulation. A step change in investment is needed if undergraduate numbers are to continue to expand.

5.2.2 Capacity constraints – in service training

Many interviewees cited that the current major constraint restricting the system in its ability to produce more consultants in the short-term is in relation to available capacity for in service training. This is particularly so for Specialist Registrars. Even though there is currently an excess of SHOs available for SpR posts, the changes to training (for example surgeons requiring increased supervision) and the need to ensure staff receive a sufficient level of exposure and experience mean that accreditation by the Royal Colleges for additional training posts may not be forthcoming.

Whilst this is the case for some specialties, it does not apply to all, and work should be carried out on a specialty basis to determine those areas where additional training posts can be established in the short-term.

5.2.3 Male / Female split

The following table shows the balance of males to females in the various staff groups in 2001 and 1998:

Table 5.2.3

Male / Female Split by Staff Group

Staff Group	2001		1998	
	% male	% female	% male	% female
Consultant	78	22	79	21
SpR	60	40	66	34
SHO	55	45	54	46
PRHO	43	57	56	44
New Undergraduates	40	60		
NCCGs	40	60	43	57
“Other”	51	49	52	48
GPs	67	33	70	30

At present more than 60% of new undergraduate medical students are female, as opposed to 22% of current consultants. Whilst recognising the long timescale for training a doctor to consultant level (approximately 15 years), and the improvement in ratio at, for example, SpR level, this raises a major issue. Clearly, unless there is a concerted effort made to facilitate more family friendly policies, with flexible training and more imaginative working patterns (and in some areas a change in attitude), this will contribute to a significant shortage of consultants across all specialties in the future, and a high proportion of the current investment in undergraduate medical students will be lost.

5.3 General Practitioners

5.3.1 Availability of Trained Staff

As previously mentioned, in Northern Ireland there are approximately 160-180 trained GPs who are not working as GP Principals. Whilst some of these may be looking for a permanent position within a practice, a large number of them enjoy the benefits which locum or sessional work provides, particularly with regards to part-time working and family friendly hours. Many also do

not wish to make the business commitment of becoming part of a practice, which a principal position requires.

The current system of funding for GPs does not encourage practices to expand their number of partners when there are more financially beneficial ways of covering the workload, for example by employing locums, even though this inevitably has an impact on the quality and continuity of care delivered.

Therefore at present there is not a shortage of GPs in the province. However, it must be stressed that this is based on the current number of GP positions. Both the changes proposed to future GP contracts and the move to a more primary care focused pattern of service delivery are likely to have an impact on the number of GP posts (whether as principals or otherwise) required across the province. Expansion to the level envisaged in, for example, the Acute Hospitals Review Group of an increase of 25% will result in a shortage of GPs unless an increased number of trainees are planned for in the future.

6. KEY ISSUES – DEMAND AND OTHER FACTORS

6.1 Acute Services

Whilst the issues around the supply of staff vary by staff group, the factors dictating demand are relatively common to all. The key areas at present are:

- Increasing pressure on acute services, whether from changing demographics, increasing admissions, pressures on waiting lists, delays in discharging elderly patients to the community, increased public expectations, changing care needs, advances in medical technology or resource constraints; and
- Changing legislation with regards to working conditions, including the European Working Time Directive, and qualitative aspects such as clinical governance.

6.2 General Practice

Increased demand for staff is resulting from a variety of factors that are continuously evolving, such as:

- Care in the community, health promotion, screening of high risk groups, demand for treatment and management of chronic disease arising from a growing elderly population, diversification in areas such as palliative care, hospital-at-home and minor surgery; and
- The potential to develop the role of primary care to achieve greater integration of service delivery with secondary care and remove some of the current pressures on the hospital system.

6.3 Service Configuration

As previously mentioned, there are a number of strategic documents which have recently been published, the outcome of which may potentially have a significant impact on the configuration of services in the province in the future. What is already clear is that given the current and projected shortages of doctors, not just at consultant level, across a range of specialties, the present configurations are not sustainable. Irrespective of any other pressures, the service is unable to deliver on the European Working Time Directive or the New Deal for Junior Doctors, both of which are now legal requirements.

The outcome of the discussions on service configuration will have a significant impact on workforce planning and will enable detailed projections to be made at a site and specialty level. Models will require regular updating as progress is made in these discussions.

6.4 Changes to GP and Consultant Contracts

As previously mentioned, national negotiations are currently ongoing with regards to GP and Consultants contracts and the outcomes of these are not yet finalised. However, they are likely to have an impact on the level of hours worked by senior staff and therefore the manpower requirements needed to compensate for potential reductions.

6.5 Specialisation vs. Generalisation

There is an increasing conflict within the service between specialisation and generalisation of doctors. The current pattern of training provision and the impact of clinical governance and quality standards are some of the factors driving the move towards increased specialisation. However, this is resulting in an increased difficulty in covering areas such as medical and surgical on-calls, where specialised staff are not willing to provide diagnosis or undertake procedures which they do not carry out on a regular basis. It is also resulting in a difficulty in providing cover at smaller sites where generalists are needed and there are not sufficient volumes of activity to justify specialist cover.

Whilst some of the professional colleges are recognising this as an issue, further work needs to be carried out to resolve it. It creates a tension between service providers and the medical and training bodies and this needs to be addressed. Consultation on the creation of a Medical Education Standards Board has been completed and proposals from this should enable the province to move forward in finding solutions to the problem.

6.6 Specialty specific

Every specialty and sub-specialty is different, and there are a large number to be considered. For the purposes of this report we have grouped the 67 payroll categories used by the acute services into 15 groups. However, when reviewing workforce planning this broad-brush approach can only be used as a starting point and more detailed work is needed at a much lower level to provide accurate projections. Each specialty will have varying requirements and the solutions for each will also differ.

6.7 Determination of Number of Posts and the Roles of Doctors in Training

At present the number of PRHO posts available per annum is primarily dictated by the need to ensure posts are available for all graduates from Queen's Medical School. This has recently been increased in recognition of the impact of the New Deal on Junior Doctors Hours.

The number of Specialist Registrar posts are centrally controlled and based on anticipated numbers of consultant vacancies as a result of factors such as service expansion and retirements. The process has been designed to ensure that all Specialist Registrars should be able to secure a Consultant post within a short time period after achieving their CCST. This means that there is no over-supply of consultant level staff in the province, but also means that increasing the number of consultant staff from within the system cannot be achieved quickly.

These factors have also resulted in a “surplus” of staff at SHO grade, with significant numbers of training doctors experiencing difficulties and time delays in securing a Specialist Registrar post with which to progress their training.

6.8 New Ways of Working

Significant work has taken place throughout the UK to look at new ways of working, primarily driven by the need to ensure compliance with the New Deal. Work in Northern Ireland is being taken forward by the Implementation Group, but there is still a significant amount of work to be done.

Whilst some areas can be progressed quickly, the development of new forms of healthcare professionals, such as physicians assistants, will take longer to have an impact.

Experience so far in Northern Ireland has shown that a major limiting factor in taking some of this work forward is the shortage of nurses and other healthcare professionals available to fulfil alternative or additional roles.

6.9 Non-consultant Career Grades (NCCGs)

Non-consultant career grade staff are increasingly being used to support consultant led services in hospitals. In the opinion of the NHS Executive⁴ these roles must be clearly defined and should be appointed only to recognised grades.

Whilst concerns have been expressed as to the professional linkages (e.g. with Royal Colleges) and the need to ensure requirements for Continuing Professional Development are met, these grades could make a significant contribution to helping resolve manpower issues.

6.10 Strategic Overview

The current systems in place in Northern Ireland result in a mixture of organisations determining posts and how they should be filled within each specialty. Particularly at consultant level, where vacancies and additional posts are managed by health boards and trusts, there have been examples of “robbing Peter to pay Paul” which have not helped the service overall. In these circumstances the most pressing service needs in the province as a whole may not be addressed or filled as a priority, nor does it enable staff to be readily moved around the province should a new pressure within a specialty arise. A more strategic approach could potentially reduce some of these problems and ensure priorities are addressed to the overall benefit of the service.

⁴ NHS Executive. Good Practice Advisory Document. “The Recruitment of Doctors and Dentists in Training” Dept. of Health, London 1998

7. DATA MODELLING

7.1 Source of Data

In developing a supply and demand model for each of the medical staff groups, a series of assumptions was developed based on the HRMS data and feedback from key informants. The assumptions are set out below.

7.2 Modelling Assumptions – Supply Factors

7.2.1 Retirements

Age information for each staff group has been provided in 5-year age bands (see Appendix C) and we have assumed a linear age spread within each band. While the average retirement age is thought to be dropping, some staff are still working well beyond 60. The average age of consultant retirements (excluding early retirements on the grounds of ill health) in 2001 was 62. Anecdotal evidence indicates that some doctors are intending to retire earlier, however, issues such as pension planning may impact on many doctors ability to retire as early as they would like.

Therefore, following discussion with the Steering Group we have assumed a current retirement age of 62 dropping steadily to 59 after ten years. The impact of this has been smoothed over the timescale covered by the model.

Table 1.6 in Appendix C shows a breakdown, by specialty, of the number of consultants over 50, and therefore who may potentially retire in the next ten years. This is compared to the current number of consultants in each specialty to give the percentage of potential retirements.

7.2.2 Other Leavers

Data has been supplied by the DHSSPS detailing, for the year 2001, the number of leavers for each grade broken down by category, e.g. personal reasons, ill health, job elsewhere etc. Categories such as transfers to other trusts and completion of training contracts have been ignored as it is assumed these staff have remained within the system. From this data, an annual percentage of leavers has been calculated and applied to the models. Bearing in mind that the data available only covers one year, following discussion with the Steering Group, the percentage for PRHO staff was dropped from 6% (11 per annum) to 1% (2 per annum). All other percentages remained the same. The percentages by grade used in the modelling are therefore:

Consultants	3%
Non-consultant career grades	5%
Specialist Registrars	4%
SHO	4%

PRHO	1%
Other	8%
GP	1%

7.2.3 Current Vacancies

For modelling purposes information on current consultant vacancies gathered by the DHSSPS for its annual review and projection of Specialist Registrar posts has been used. This equates to an overall 8% of total workforce. It is assumed these will be filled over the next two years.

No information is held centrally with regards to non-consultant career grades and other posts, but vacancies are assumed to be minimal. Anecdotal evidence indicates there are some vacancies for SHO posts, particularly in paediatrics and psychiatry, so 20 have been allowed for in the model.

From information provided by the NICPMDE there are no current Specialist Registrar and PRHO vacancies, although they are at present projecting 12 PRHO vacancies for the August intake.

It is assumed that, given there are currently no significant recruitment problems with GPs, that there are no current vacancies in the system.

7.2.4 Loss to Workforce Due to Work / Life Balance

It needs to be recognised that the increasing percentage of women entering the profession will result in a drive for greater availability of family friendly work policies and flexible training. It is also known that women are generally choosing to start their families at a later age, and therefore the major impact is expected within the Consultant, GP and Specialist Registrar grades. For the purposes of the model it has been assumed that there will be an annual increase in staff required to compensate for hours lost of 1 % rising to 2.5% per annum over ten years.

For all other staff groups it has been assumed that there will be an increase of 1% per annum.

7.3 Modelling Assumptions – Demand Factors

7.3.1 Working Time Directive

It is very difficult at this stage to quantify the potential impact of the WTD with regards to Consultants, and therefore the impact has been subsumed within the projections for increased workload.

It is assumed that there is no impact with regards to GPs, NCCGs except full time Staff Graders, and Other grades.

For SpR, SHO, PRHO grades and full time Staff Graders the following assumptions have been applied:

- they currently work an average non-compliant 64 hours per week;

- this will drop to 56 hours per week for the first six years – average loss = 8 hours per week = 14% increase in staff required;
- this will then drop to 48 hours per week – again average loss = 8 hours per week = a further 14% increase in staff;
- the implementation will take several years to complete;
- the above impact on SHO and PRHO grades will be reduced by 33% as a result of the transfer of workload to non junior doctor staff; and
- the already agreed increase to PRHO posts for August 2002 is included in the first year.

It is fully recognised that this is a very general approach and that the actual impact is dependent on a range of factors such as intensity of workload, and size of organisation. However, that requires working at a specialty or sub-specialty and site level and this level of detail was outwith the remit of this review.

7.3.2 Workload Projections

Taking into consideration the deliberations of the Acute Hospitals Review Group, service reconfigurations, the impact of an ageing population, the potential impact of the new GP and Consultants contracts, the findings of the Wanless Report⁵, and professional guidelines, an increase in Consultants of 40% and GPs of 25% over the next ten years has been assumed. (Sensitivity analysis has also been carried out on an increase of 60% for consultants and 40% for GPs – see section 6.8.3).

In recent years, there has been a significant increase in the number of NCCG posts requested and established. These have been required for a number of reasons, principally to enable trusts to manage the impact of the working time directive on training grade posts, and partly to help alleviate other service pressures. It is likely that the rise in posts will continue in the short-term, however, the assumptions within the data modelling are that the requirements for meeting the WTD and increased service pressures will in the main be covered by the projected requirements for increasing training grade and consultant numbers, and therefore, after a period of time, the numbers of NCCG posts required to cover these factors will no longer continue to rise. Therefore, for the workload projection, an increase of 30% over current numbers has been projected over the next five years, based on a declining rate of increase.

No increase has been assumed for other staff groups other than those included above for the WTD.

7.3.3 Annual Completion of Training Grades

In order to project the planning numbers through all of the relevant grades we need to “annualise” the numbers of staff at each of the training grades. We

⁵ Securing our Future Health: taking a Long Term View, 2002

have therefore assumed that it takes 1 year to complete PRHO training, 4 years to complete SHO training, 1 year for GP Registrar training and 5 years for an SpR to complete training and be ready for a consultant's post.

The current workforce composition has 471 SpRs, equating to 94 per annum completing training. There are 720 SHOs, equating to 180 per annum and from August there will be 212 PRHO posts.

7.4 Summary of Assumptions

The following table summarises the assumptions to be applied for the data modelling:

Table 7.4

Summary of Assumptions for Data Modelling

	Cons	NCCG	SpR	SHO	PRHO	Other	GP
Supply							
Retirement	62 down to 59 after 10 yrs		n/a	n/a	n/a	62 down to 59 after 10 yrs	
Leavers / annum	3%	5%	4%	4%	1%	8%	1%
Current Vacancies – assumed filled over 2 yrs	8%	0	0	3%	0	0	0
Work / life balance increase per annum	1% to 2.5% after 10 yrs	1%	1% to 2.5% after 10 yrs	1%	1%	1%	1% to 2.5% after 10 yrs
Demand							
WTD - increase							
2002/03 to 2006/07	-	14%*	14%	10%	10%	-	-
2007/08 to 2011/12	-	14%*	14%	10%	10%	-	-
Workload increase	40% over 10 yrs	30% over first 5 yrs	-				25% over 10 yrs

* full time staff graders only

7.5 Models

Applying the above assumptions for each staff group results in the following data models. **NOTE - THESE MODELS ASSUME THAT ALL POSTS ARE FILLED EACH YEAR I.E. THE SHORTFALLS ARE NOT CUMULATIVE.** For a detailed description of how the models are calculated, see Appendix E.

7.5.1 Consultants

The table sets out the projected number of SpRs required to complete their training each year in order to meet the need for additional consultants on an annual basis, and how that compares with the current and projected annual supply:

Table 7.5.1

Projected New Consultant Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	25	24	22	30	28	27	39	39	39	49
Leavers	28	28	28	28	28	28	28	28	28	28
Current Vacancies	37	37								
Work / life balance	9	11	14	17	19	20	21	22	23	23
Demand										
Increased workload	37	37	37	37	37	37	37	37	37	37
Total per annum	136	137	101	112	112	112	125	126	127	137
SpR Supply	94	95	99	103	107	112	117	122	128	133
Over supply / -Shortfall	-42	-42	-2	-9	-5	0	-8	-4	1	-4

At present the system is producing approximately 94 new consultants (SpR completing their training) per annum, which will gradually rise over the next ten years. This results in a shortfall in available consultants against projected consultant requirements. Whilst future requirements are more closely met within the above model, it does not produce sufficient staff to cover the initial shortfall, nor does it allow any “over supply” of doctors in the future.

When reviewing anticipated retirements (Appendix C, Table 1.6), it is worth noting that for some sub-specialties a considerable percentage of consultant staff may potentially retire over the next ten years, for example 60% in Thoracic Medicine, 67% in Endocrinology and Diabetes, 75% in Paediatric Surgery.

7.5.2 Non-consultant Career Grades

The table sets out the projected number of new staff required to be available each year in order to meet the need for NCCG on an annual basis:

Table 7.5.2

Projected Non-Consultant Career Grade Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	4	4	5	2	3	2	6	3	3	7
Leavers	9	9	9	9	9	9	9	9	9	9
Work / life balance	2	2	2	2	2	2	2	2	2	2
Demand										
WTD		2	2	2	2	2	3	3	3	3
Increased workload	19	15	11	8	4					
Total per annum	34	32	29	23	20	15	20	17	17	21

It is assumed for modelling purposes that the NCCGs are filled by experienced SHOs, and this is factored in to the following tables when looking at the requirements for SHO posts.

7.5.3 Specialist Registrars

The table sets out the projected number of staff required each year to fill SpR positions, combined with new staff required for NCCG and GP Registrar posts, on the basis that these three categories all require qualified SHO staff, so giving a total requirement for trained SHOs each year:

Table 7.5.3

Projected New Specialist Registrar Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Annual SpR intake	94	95	99	103	107	112	117	122	128	133
Leavers	19	19	19	19	19	19	19	19	19	19
Work / life balance	5	6	8	9	10	10	11	12	13	13
Demand										
WTD	0	13	13	13	13	13	16	16	16	16
Total SpR per annum	118	133	139	144	149	154	163	169	176	181
Requirement for NCCG	34	32	29	23	20	15	20	17	17	21
Requirement for GP Reg	75	77	80	87	83	89	98	105	107	114
Total SHO Requirement	227	242	248	254	252	258	281	291	300	316
Current SHO Supply (see below)	180	184	192	197	202	207	212	218	224	230
Shortfall	-47	-58	-56	-57	-50	-51	-69	-73	-76	-86

In order to do the above modelling it is necessary to calculate an annual intake into year 1 and graduation from year 5 of this part of the training programme. As a baseline the current number of SpR posts has been spread over five years ($471/5 = 94$). The annual total increase in posts required to meet the needs of the working time directive and the work/life balance for the whole SpR workforce are also assumed to be spread across the five years of

training doctors in the group. Therefore the number of posts being created for each year of entry / graduation is increased annually by 1/5 of the increase in total posts each year.

The number of staff required each year will be greater than the number of posts available in order to take account of the leavers each year whose posts require refilling.

The requirement for increased GP registrars, principally as a result of the projected 25% increase in GPs, will result in a shortfall of SHO trained staff each year over the projected ten-year period.

7.5.4 Senior House Officers

The table below sets out the annual requirements for SHO staff, and how this compares to the current number of PRHO staff likely to be available:

Table 7.5.4

Projected New SHO Requirements per annum

		2002	03/	04/	05/	06/	07/	08/	09/	10/	11/
		/03	04	05	06	07	08	09	10	11	12
Supply											
Annual SHO intake		180	184	192	197	202	207	212	218	224	230
Leavers		29	29	29	29	29	29	29	29	29	29
Vacancies		10	10								
Work / life balance		7	7	7	7	7	7	7	7	7	7
Demand											
WTD		0	13	13	13	13	13	17	17	17	17
Total SHO per annum		226	243	241	246	251	256	265	271	277	283
Current PRHO Supply		188	214	219	224	229	233	238	244	250	256
Shortfall		-38	-29	-22	-22	-22	-23	-27	-27	-27	-27

As with the SpR group, an annual intake into year 1 and graduation from year 4 of this stage of training has been calculated, and increases in posts for WTD and work/life balance have been spread over the four years.

As can be seen, there is a small projected shortfall of PRHO trained staff on an annual basis. These staff would require to be resourced from outwith the province.

7.5.5 Pre-Registration House Officers

The table below sets out the projected requirement for PRHO posts based on current service need and how this compares to the anticipated number of graduating students:

Table 7.5.5

Projected New PRHO Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Annual PRHO Intake	212	214	219	224	229	233	238	244	250	256
Leavers	2	2	2	2	2	2	2	2	2	2
Work / life balance	2	2	2	2	2	2	2	2	2	2
Demand										
WTD	0	3	3	3	3	3	4	4	4	4
Total PRHO needs	216	221	226	231	236	240	246	252	258	264
Student Supply	183	173	169	169	180	180	180	180	180	180
Shortfall	-33	-48	-57	-62	-56	-60	-66	-72	-78	-84

The above factors in the current anticipated graduate supply for the next four years are based on figures provided by the QUB Medical School and a return to current levels for future years. This assumes the only supply of students is via QUB Medical School and does not take in to account the availability of graduates from the rest of the UK or the Republic of Ireland.

7.5.6 Others

The following table sets out the requirement for new staff on an annual basis:

Table 7.5.6

Projected New “Other” Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	6	7	7	13	8	9	15	8	7	24
Leavers	20	20	20	20	20	20	20	20	20	20
Total	26	27	27	33	28	29	35	28	27	44

Given that these are mainly sessional staff, for example GPs doing hospital sessions, it is assumed that staff already trained and available, including the additional GPs projected below will fill them.

7.5.7 General Practitioners

The following table sets out the requirements for newly qualified GPs per annum, and how that compares with the current supply of qualifying GP Registrars:

Table 7.5.7

Projected GP Requirements per annum										
	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	27	27	27	31	25	30	37	43	43	50
Leavers	12	12	12	12	12	12	12	12	12	12
Work / life balance	11	13	16	19	21	22	24	25	27	27
Demand										
Increased Workload	25	25	25	25	25	25	25	25	25	25
Total GP Reg Requirement	75	77	80	87	83	89	98	105	107	114
Supply	42	75	77	80	87	87	89	98	105	107
Shortfall	-33	-2	-3	-7	4	-2	-9	-7	-2	-7

The table assumes that the number of GP Registrar training posts are increased each year in line with previous year requirements, so resulting in an initial high shortfall, with lower shortfalls projected in future years.

7.6 Summary of Data Modelling

The following table sets out the results of the data modelling for each staff group. It shows the requirement for staff each year based on current posts and additional service requirements within each grade of staff:

Table 7.6.1

Projected Requirements for Staff per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Consultants	136	137	101	112	112	112	125	126	127	137
GPs	75	77	80	87	83	89	98	105	107	114
SpR	118	133	139	144	149	154	163	169	176	181
NCCG	34	32	29	23	20	15	20	17	17	21
GP Reg	75	77	80	87	83	89	98	105	107	114
SHO	226	243	241	246	251	256	265	271	277	283
PRHO	216	221	226	231	236	240	246	252	258	264

It is important to bear in mind that this is the number of staff required per annum and therefore covers staff leaving requiring replacement. Therefore for the training grades (SpR, SHO and PRHO), the above numbers do not equate to the number of qualified staff available each year to progress to the next stage of training.

The following section sets out the number of staff completing each stage of training each year and compares this to the number required.

7.7 Projected Shortfalls in Available Staff

The following tables summarise the projected shortfalls in staff as set out in the data models. These are based on training timescales of 1 year at PRHO, 4 at SHO and 5 at SpR level. (NOTE – these are annual shortfalls, based on workforce requirements within each group, and assume that projections for previous years are met. This is not necessarily realistic and it is therefore important to bear in mind that some of these shortfalls may need to be added together to give a cumulative figure.):

Table 7.7.1

Projected Requirements for newly qualified SpR per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Consultants Required	136	137	101	112	112	112	125	126	127	137
Available SpR	94	95	99	103	107	112	117	122	128	133
Over supply / (Shortfall)	-42	-42	-2	-9	-5	0	-8	-4	1	-4

For the next two years there will be a significant shortfall in staff available to meet Consultant requirements. Whilst the numbers available in the future more closely match need, they are not sufficient to cover the shortfall from previous years, nor do they allow for an over supply of qualified doctors.

Table 7.7.2

Projected Requirements for newly qualified SHO per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
SpR Required	118	133	139	144	149	154	163	169	176	181
NCCG Required	34	32	29	23	20	15	20	17	17	21
GP Reg Required	75	77	80	87	83	89	98	105	107	114
	227	242	248	254	252	258	281	291	300	316
Available SHO	180	184	192	197	202	207	212	218	224	230
(Shortfall)	-47	-58	-56	-57	-50	-51	-69	-73	-76	-86

As a result of the projected increase in GPs required (and therefore the knock-on effect on GP Registrar posts) there is an annual shortfall of qualified SHO staff to fill these posts and additional staff would need to be attracted in from elsewhere.

Table 7.7.3

Projected Requirements for newly qualified PRHO per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
SHO Required	226	243	241	246	251	256	265	271	277	283
PRHO Supply	188	214	219	224	229	233	238	244	250	256
(Shortfall)	-38	-29	-22	-22	-22	-23	-27	-27	-27	-27

There is a small projected shortfall in qualified PRHO staff per annum, so again, staff would need to be attracted in from elsewhere.

Table 7.7.4

Projected Requirements for new Graduates per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
PRHO Required	216	221	226	231	236	240	246	252	258	264
Graduate Supply	183	173	169	169	180	180	180	180	180	180
(Shortfall)	-33	-48	-57	-62	-56	-60	-66	-72	-78	-84

The shortfall in graduates over the next four years will need to be met by attracting graduates from elsewhere in the UK or the Republic of Ireland. Additional capacity will need to be developed at QUB immediately if the continuing shortfall is to be met from within Northern Ireland. An increase in capacity at QUB to 250 per annum would be sufficient.

As can be seen from the above, the level of shortfalls in available staff are not the same at each grade. The greatest levels of shortfall are for graduates and SHO. This is principally because experienced SHOs are required to feed in to the Spr, NCCG and GP career routes, and is therefore impacted by the expansion of both Consultant and GP posts.

In order to meet this need, a greater number of PRHO posts than is necessary for service requirements would have to be established, which would have major implications for the availability of sufficient training for this number of doctors.

7.8 Sensitivity Analysis

The above models are developed using a series of assumptions, some of which have a greater impact than others. Therefore sensitivity analysis has been carried out on several of the larger variables to assess their impact. The three areas reviewed are the age of retirement, the annualisation of the career grades and the assumed increase in workload.

7.8.1 Age of Retirement

The models assume a current retirement age of 62, dropping to 59 by year ten, resulting in an anticipated 701 retirements (322 Cons, 39 NCCG, and 340 GP). However, if this is adjusted to an assumed annual retirement age of 60 for the ten years, this reduces the number of retirements to 613 (269 Cons, 34 NCCG, 310 GP). This has an impact on the number of training posts required per annum as follows:

Table 7.8.1

Projected Requirements for newly qualified staff per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Retire 62 - 59										
Consultants	136	137	101	112	112	112	125	126	127	137
Available SpR	94	95	99	103	107	112	117	122	128	133
Over supply / (Shortfall)	-42	-42	-2	-9	-5	0	-8	-4	1	-4
Retire 60										
Consultants	127	150	116	103	104	106	115	116	117	117
Available SpR	94	95	99	103	107	112	117	122	128	133
Over supply / (Shortfall)	-33	-55	-17	0	3	6	2	6	11	16

Table 7.8.1 (continued)

Projected Requirements for newly qualified staff per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Retire 62 - 59										
GPs needed	75	77	80	87	83	89	98	105	107	114
GP Reg	42	75	77	80	87	87	89	98	105	107
Over supply / (Shortfall)	-33	-2	-3	-7	4	-2	-9	-7	-2	-7
Retire 60										
GPs needed	64	92	95	82	84	85	94	95	97	97
GP Reg	42	64	92	95	95	95	95	95	95	97
Over supply / (Shortfall)	-22	-28	-3	13	11	10	1	0	-2	0

Maintaining a working life to 60 years enables sufficient newly qualified SpR to be trained to meet future needs, but will not cover shortfalls in the early years. Gaps in the early years could be partially bridged by enabling medical staff to feel comfortable working beyond 60.

7.8.2 Annualisation of Training Grades

The models assumed that 4 years are spent at SHO grade and 5 at SpR, and the baseline for the numbers of training doctors per year has been calculated by taking the current number of staff and dividing it by the relevant number of years.

However, we know that the training structure is complex and the time spent at the SHO and SpR grade will vary by specialty and individual. Therefore the models have also been calculated using a 3-year term at SHO and 6 year term at SpR. This results in a very different pattern of over supply and shortfall at the various grades as follows:

Table 7.8.2

Projected over supply / -shortfall of newly qualified staff per annum

	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
SpR	-57	-57	-18	-25	-21	-18	-27	-24	-20	-25
SHO	29	19	23	25	34	36	21	19	20	12
PRHO	-98	-91	-86	-88	-90	-92	-97	-100	-102	-104

As can be seen, this gives a significant shortfall of qualified SpR staff against Consultant posts, an over supply of SHO staff for SpR posts each year and a shortfall of PRHOs to fill SHO posts.

There are currently 471 SpR, which equates to 94 per annum on a five-year programme, and 79 per annum on a six-year basis. For SHO, of which there are currently 720, a four-year programme equates to 180 per annum, whereas a three-year programme equates to 240 per annum, a significant difference.

It is also known that a number of SHO qualified staff are currently working as Trust Doctors or Staff Graders because there are insufficient SpR posts available, and this will be distorting the figures available for modelling.

7.8.3 Workload Projections

The models assume an increase of 40% in Consultants (280) over ten years and 25% in GPs (250). Modelling an increase of 60% in Consultants (560) and 40% in GPs (430) has the following effect:

Table 7.8.3

Projected Requirements for newly qualified staff per annum

	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/12
SpR Shortfall	-61	-61	-21	-28	-23	-19	-27	-23	-18	-22
GP Reg Shortfall	-50	-3	-3	-7	4	-2	-9	-7	-1	-8
SHO shortfall	-64	-76	-74	-74	-68	-69	-86	-91	-93	-104

7.9 Additional Posts Requiring Funding

The data models project the number of staff required for each grade of post each year. However, many of these are required to fill posts which are already funded but become available e.g. retirements, leavers and current vacancies. It is also assumed that increases in staff numbers required due to the development of more flexible working patterns (work / life balance) are already funded as they will generally involve full time posts converting to part time posts, but equally the same whole time equivalent (w.t.e.) e.g. 1 full time post converting to two part time posts.

Therefore the areas where new funding for additional posts each year will be required will be for service expansion (Consultants, GPs and NCCGs), the working time directive (SpR, SHO, PRHO, and full time Staff Graders) and increases in GP Reg training posts. These are summarised below:

Table 7.9.1

Projected Requirements for Funding of Additional Staff per annum

	02/ 03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12	Total
Consultants	37	37	37	37	37	37	37	37	37	37	370
GP	25	25	25	25	25	25	25	25	25	25	250
NCCG	19	15	11	8	4						57
SpR		13	13	13	13	13	16	16	16	16	129
GP Reg	33	2	3	7	0	2	9	7	2	7	72
Staff Grade		2	2	2	2	2	3	3	3	3	22
SHO		13	13	13	13	13	17	17	17	17	133
PRHO		3	3	3	3	3	4	4	4	4	31

(note - NCCG above excludes Staff Graders shown separately)

8. CONCLUSIONS AND RECOMMENDATIONS

From both the qualitative analysis and the detailed data modelling we can draw the following conclusions and recommendations (it is recognised that these are all based on the premise that additional funding will be available to expand numbers of posts, and that this is not a given);

8.1 Complexity of Modelling

As can be seen from the sensitivity analysis, modelling the flow and requirements for staff at each level in the training programme is complex and subject to significant variation depending on the assumptions used. Varying the assumptions result in different levels of potential over or under supply, with the SpR and SHO grades being the main areas effected. This is complicated by the fact that the time period spent at each grade will vary by specialty and individual.

It must also be borne in mind that the shortfalls are against a backdrop of increasing the number of medical posts (all grades excluding “others”) by 965 (27%) over ten years, compared to recent expansion of 6% over the last four year period.

However, all of the modelling indicates a need to increase the number of graduates available to fill future posts, and (as is already known) an under supply of newly qualified SpR staff in the short term.

8.2 Shortfall in new Consultants

The current system in Northern Ireland is not producing sufficient qualified staff to meet the potential requirements for Consultant staff and work needs to be carried out in the short term to review potential ways to fill the gap in the intervening years before additional staff can be trained.

The new consultant contract is likely to go a long way towards addressing many of the problems identified by consultants. However, implementing the contract will require an increase in consultant numbers. It will also require a significant change in the way consultants work and, because there are insufficient doctors currently training to become consultants, it will require changes in skill-mix over the next few years. Other issues to be considered are;

8.2.1 Retain existing Consultants

Ways should be reviewed to encourage existing staff to remain in the health service beyond their current retirement plans. Many staff are retiring because they no longer wish to work the long hours or under the continued pressure which they currently experience. By being more imaginative with our working patterns, some may be encouraged to stay. This also enables very experienced staff to be retained within the service to assist in training additional doctors.

Work also needs to be carried out to ensure that NHS pension arrangements are such that consultants are not discouraged to take on different work patterns because of the potential impact on their pensionable salary.

8.2.2 International Recruitment

Northern Ireland should ensure it remains fully involved in UK wide initiatives to attract suitably qualified staff from abroad, either on a temporary or permanent basis.

8.2.3 Use of Funds

As and when funding becomes available to increase the number of consultant posts, this needs to be targeted sensibly, recognising where the most pressing service needs are, whilst also acknowledging that in some specialties consultant vacancies are proving difficult to fill in the short term due to the lack of candidates available.

8.2.4 NCCGs

There are a number of very experienced staff working at NCCG level, who may have the potential to be fast tracked to Consultant level, and this should be reviewed on a specialty basis.

Work also needs to be carried out to determine the future of NCCGs in Northern Ireland. There is substantial potential to develop these roles into meaningful career opportunities in their own right, with the potential to develop significant skill and experience with which to support Consultants. However, this needs to be balanced with the need to increase the number of Consultant staff in order to provide a “Consultant delivered” service.

If current consultant workload is to be reduced by the use of other staff then those staff must be sufficiently competent to require minimal supervision for the tasks they undertake – otherwise the consultants’ work will switch from doing it themselves to checking that others have done the same job correctly.

8.2.5 Use of GPs

At the moment in Northern Ireland, there are more doctors trained as general medical practitioners than there are GP vacancies. The results of the review of primary care in Northern Ireland may result in an increase in the requirement for GPs, which, as modelled, will absorb the above over supply.

However, whilst the new GP contract is likely to make a career in general practice (even if not working as a principal) more attractive, not all newly qualified GPs immediately want permanent, full-time positions or to become GP principals with the various responsibilities this entails, such as running a practice and employing staff.

The current situation may provide an opportunity to create jobs that combine a role in general practice with a role in hospital medicine as an NCCG. This could help to address the need for highly trained doctors working in a hospital

environment who would support a consultant-led service and need minimal supervision in doing so. It is recognised that many career hospital doctors neither have experience of general practice nor desire to go into it. However, all GPs have had experience of working in hospital and some would wish to continue to spend a significant proportion of their time in that environment. This could be an attractive option to those doctors who do not wish to (or cannot) take on the full responsibilities of being a consultant. It is also a potential way of providing a higher status to the non consultant career grade position in hospital.

Not all doctors wish to opt for a career that is either wholly hospital-based or general practice-based. This option is based on the well-established role of a number of GPs as clinical assistants or as hospital practitioners attached to a consultant. However, such doctors usually only work one or two sessions each week and often only in an outpatient department. The suggestion here is that such doctors would work more sessions in hospital, perhaps up to five, each week, and provide care in a larger number of stages in the patient journey.

8.2.6 Use of Other Staff to Support a Consultant Delivered Service

An increasing number of hospitals are employing other staff to support medical practitioners in on-take duties and in other work. Within the province this work is being taken forward by the Implementation Group on Junior Doctors Hours, and this should be supported and encouraged.

Whilst it is recognised that there are difficulties in recruiting and retaining staff, especially nurses, this does not mean it is an impossibility. Lessons can also be learned from successes in General Practice in terms of supporting the role of “lead doctors” (i.e. those who are ultimately responsible for the medical care of patients) in the provision of care, both face-to-face and over the telephone.

Any work taken forward should be carried out province wide to ensure effort is concentrated on the most urgent service needs first, rather than being taken forward by individual Trusts or Boards.

8.3 Infrastructure Development

The solution to the shortage of medical manpower does not lie only in increasing the number of doctors and changing the skill-mix of clinical teams. It will also require the development of the supporting infrastructure – principally the use of more clerical staff and Information Management and Technology (IM&T) – to reduce the burden of administrative tasks currently undertaken by clinical staff.

8.4 Training Numbers – Specialist Registrars

Work needs to be carried out at a specialty or sub-specialty level to determine where there is potential to increase training grade numbers, especially SpR numbers in the short term, whilst ensuring criteria for training are being met. Timescales and actions required to enable expansion in other areas then need to be determined.

8.5 Medical School

The requirements for expanding the capacity at Queens Medical School to 250 students per annum should be determined, including a potential timescale for delivery. The potential for attracting graduates to the PRHO programme from the rest of the UK and the Republic of Ireland should also be explored, especially given that many Northern Irish medical students study in Great Britain, and there is a planned expansion in student numbers across the UK as a whole.

8.6 Funding for Additional Teaching Capacity

Any additional investment in training grades requires a review of the cost and infrastructure available for teaching, not only in the educational system as mentioned above, but also in the health service, where additional funding will be required to support the necessary increase in in-service training provision.

8.7 Family Friendly Policies / Flexible Training

The availability of family friendly policies and flexible training patterns needs to be extended if we are to retain the high number of females currently coming through medical school. Reviews should be carried out to determine ways in which this can be achieved without significant financial penalty to the employing organisation.

8.8 Further Research

Further research would be useful to obtain definitive data to support future modelling assumptions, such as planned retirement ages, reasons for leaving (all grades), and requirements for additional posts to cover work / life balance.

8.9 Service Strategies

Workforce planning is very difficult to carry out with any degree of accuracy if the future shape and provision of services is unclear. As mentioned earlier, the report of the Acute Hospitals Review Group (Hayes Review) is now complete and the final outcome of the consultations on Primary Care is also awaited.

In the short term, networking arrangements across the province should be encouraged to alleviate the most severe pressures. As potential plans and strategies emerge, workforce requirements will need to be continuously reviewed. It is clear that the current service configuration is not sustainable with the workforce available.

8.10 Further Workforce Planning at Specialty Level

As previously mentioned, this report should act as a starting point for more detailed workforce planning. By its very nature it is a broad-brush approach, and more detailed planning should be carried out on a specialty basis (not necessarily on a trust or site basis). This would enable more detailed assessments to be made of the issues and allow alternative service configurations to be modelled.

This work is particularly imperative with regards to the implementation of the Working Time Directive, which is now European Law and requires to be complied with as soon as possible.

To be effective, workforce planning in the NHS must be a continuous process, with regular reviewing of assumptions and updating of the models to reflect ongoing changes.

APPENDIX A
STEERING GROUP MEMBERS

Membership of Steering Committee

<i>Chair:</i>	D. Bingham	HR Director DHSSPS
<i>Steering Committee Members:</i>	I. Carson	Royal Hospitals
	J. McFarland	UCHT
	G. Humphries	United Hospitals
	J. Kelly	Sperrin Lakeland
	L. McCaughey	Craigavon Hospital
	J. McCluggage	NICPMDE
	J. Orr	QUB Medical Faculty
	J. Jenkins	Implementation Support Group
	D. Stewart	EHSSB
	J. Peden	Mater Hospital
	M. Doherty	Altnagelvin Hospital
	P. Ramsay-Baggs	BMA
	P. Maguire	BMA
	P. Woods	DHSSPS
	J. Thompson	DHSSPS
	J. Cairns	DHSSPS

APPENDIX B

KEY INFORMANT INTERVIEWS

Table of Key Informant Interviews

Dr.Paul Bell	S&E Belfast Community Trust
Dr.Ian Carson	Royal Hospitals Trust
Dr.Dennis Connolly	Green Park Trust
Dr.Ken Fullerton	BCH Trust
Dr. Jim McFarland	Ulster Community and Hospital Trust
Prof Bowman	United Hospitals Trust
Ms Jacinta Molloy	Causeway Trust
Dr.Jim Kelly	Sperrin & Lakeland Trust
Ms Nuala Sheerin	Foyle Community Trust
Dr.Stephen Best	Craigavon & Banbridge Community Trust
Dr.Paddy Loughrane	Newry&Mourne Trust
Dr.Harold McNeill	Armagh & Dungannon Trust
Dr.Liam McCaughey	Medical Director Craigavon Area Hospital
Dr.Robin McKee and Dr.Caroline Marriott	N&W Belfast Community Trust
Dr.Jim Biers	Down & Lisburn Trust
DrJack McCluggage	NI Council for Postgraduate Medical/Dental Education
Dr.Agnes McKnight	NI Council for Postgraduate Medical/Dental Education
Dr.J Jenkins	Implementation Support Group, Junior Doctors Hours
Dr.D Stewart / Ms Janet Little	EHSSB
Dr Stanton Adair	EHSSB
Ms Mary Hinds	Mater Hospital
Dr.Paddy Woods	Medical Workforce Planning Advisor to Dept
Dr Peter Maguire	BMA Junior Doctors Hours
Mr P Ramsay-Baggs	BMA
Dr K McConkey	BMA
Dr S Austin	BMA

APPENDIX C
WORKFORCE COMPOSITION

APPENDIX D
SUB-SPECIALTY GROUPING

Appendix D

Grouping of Specialties and Sub-specialties for Data Analysis

Main Group	Specialties / Sub-specialties	Main Group	Specialties / Sub-specialties
Radiology	Radiology Mammography	Medical Paediatrics	Paediatrics Child Health Community Paediatrics
A & E	A & E		
Anaesthetics	Anaesthetics Pain relief	Neurosciences	Clinical Neuro-physiology Neuro Surgery Neurology Neuropathology
Ophthalmology	Ophthalmology		
ENT	ENT Otolaryngology	Clinical Oncology	Medical Oncology Radiotherapy
Orthopaedics	Orthopaedics	Psychiatry & Learning Disability	Mental Handicap Mental Illness Child & Adolescent Psychiatry Forensic Psychiatry Psychiatry of Old Age Alcoholism / Drug Abuse Psychotherapy
Surgical Specialties	General Surgery Paediatric Surgery Plastic Surgery Urology Vascular Surgery Gastroenterology Renal Failure Surgery Cardiac Surgery Thoracic Surgery	Pathology	Clinical Genetics Physiology General Pathology Chemical Pathology Haematology Histopathology Medical Microbiology Immuno Pathology Histo / Cyto Clinical Chemistry
Medical Specialties	General Medicine Rheumatology/ Rehab Infectious Diseases Thoracic Medicine Dermatology Cardiology Genito-urinary Med Nephrology Geriatric Medicine Endocrinology and Diabetes Gen Med Spec. Int Geriatrics	Other	General Practice Community Medicine Other Depts Occupational Medicine Advisory Public Health Medicine Well Women Clinics GP Contracts Family Medicine Anatomy
Obs & Gynae	Obstetrics and Gynaecology Maternity		

APPENDIX E
BREAKDOWN OF CALCULATIONS FOR MODELLING

Consultants

Table 7.5.1

Projected New Consultant Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	25	24	22	30	28	27	39	39	39	49
Leavers	28	28	28	28	28	28	28	28	28	28
Current Vacancies	37	37								
Work / life balance	9	11	14	17	19	20	21	22	23	23
Demand										
Increased workload	37	37	37	37	37	37	37	37	37	37
Total per annum	136	137	101	112	112	112	125	126	127	137
SpR Supply	94	95	99	103	107	112	117	122	128	133
Over supply / -Shortfall	-42	-42	-2	-9	-5	0	-8	-4	1	-4

Consultant baseline = 929 (current employees at September 2001 per HRMS).

Basis of calculations;

Retirements: Using the 5 year age band profile in Appendix C, assume a retirement age of 62 in 2002/03 moving down to a retirement age of 59 by 2011/12.

Leavers: Based on the information provided by DHSSPS for 2001, and excluding age retirements – 3% applied to consultant baseline for leavers per annum. ($929 \times 0.03 = 28$)

Current vacancies: Based on the DHSSPS annual survey for the projection of SpR posts for Sept 2001 – 74 vacancies, which, for the purposes of the model are assumed to be filled in the first two years ($74 / 2 = 37$).

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. In 2002/03 it is assumed that 1% of baseline staff wish to move to part-time ($929 \times 0.01 = 9$). This rises to 2% per annum by 2006/07 ($929 \times 0.02 = 19$) and 2.5% per annum in 2011/12 ($929 \times 0.025 = 23$)

Increased workload: 40% increase in the number of consultants employed, achieved over ten years ($929 \times 0.4 = 372$ – over 10 years = 37 per annum).

Total per annum: Total of all of the above factors.

SpR Supply: This is the number of SpR projected to “graduate” each year, and is the annual SpR figure shown at the top of the SpR table below.

Over supply / shortfall: The difference between the projected SpR supply and the total per annum.

Non-Consultant Career Grades

Table 7.5.2

Projected Non-Consultant Career Grade Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	4	4	5	2	3	2	6	3	3	7
Leavers	9	9	9	9	9	9	9	9	9	9
Work / life balance	2	2	2	2	2	2	2	2	2	2
Demand										
WTD		2	2	2	2	2	3	3	3	3
Increased workload	19	15	11	8	4					
Total per annum	34	32	29	23	20	15	20	17	17	21

NCCG baseline = 188 (current employees at September 2001 per HRMS).

Basis of calculations;

Retirements: Using the 5 year age band profile in Appendix C, assume a retirement age of 62 in 2002/03 moving down to a retirement age of 59 by 2011/12.

Leavers: Based on the information provided by DHSSPS for 2001, and excluding age retirements – 5% applied to baseline for leavers per annum. ($188 \times 0.05 = 9$)

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. For this staff group it is assumed that 1% of baseline staff wish to move to part-time ($188 \times 0.01 = 2$ per annum).

Working time directive: Within this staff group this applies only to full-time staff graders (98). The assumption is that a 14% increase in staff is required from 2003/04 and a further 14% from 2008/09. However, it is also assumed that the initial increase cannot be achieved in one year and is therefore spread over 5 years, with the second increase spread over four. ($98 \times 0.14 / 5 = 2$ per year, $98 \times 0.14 / 4 = 3$ per year).

Increased workload: 30% increase in the number of NCCG employed, achieved over the first five years on a declining basis ($188 \times 0.3 = 56$ – year 1 = $56 \times 5/15$, year 2 = $56 \times 4/15$ etc. to year 5 = $56 \times 1/15$).

Total per annum: Total of all of the above factors.

Specialist Registrars

Table 7.5.3

Projected New Specialist Registrar Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Annual SpR	94	95	99	103	107	112	117	122	128	133
Leavers	19	19	19	19	19	19	19	19	19	19
Work / life balance	5	6	8	9	10	10	11	12	13	13
Demand										
WTD	0	13	13	13	13	13	16	16	16	16
Total SpR per annum	118	133	139	144	149	154	163	169	176	181
Requirement for NCCG	34	32	29	23	20	15	20	17	17	21
Requirement for GP Reg	75	77	80	87	83	89	98	105	107	114
Total SHO Requirement	227	242	248	254	252	258	281	291	300	316
Current SHO Supply	180	184	192	197	202	207	212	218	224	230
Shortfall	-47	-58	-56	-57	-50	-51	-69	-73	-76	-86

SpR baseline = 471 (current employees at September 2001 per HRMS). Assume five year training programme.

Basis of calculations;

Annual SpR: It is necessary to calculate an annual intake into year 1 and the output (“graduation”) from year 5 of the SpR training programme. This gives you both the number of SpR posts available each year for incoming SHOs, and the number of “graduating “ SpRs available to take up Consultant posts. It is assumed that the number of staff are spread evenly across the five years. Therefore, for 2002/03 the baseline number of SpR posts has been spread over the five years to give an initial annual intake / output of $471 / 5 = 94$.

Each year, the total number of SpR posts will be increased by the additional posts required to meet the needs of the working time directive and the work/life balance. (Leavers have no impact on the overall number of posts, but do have an impact on the number of staff required.) These additional posts relate to the whole SpR workforce are therefore assumed to be spread across the five years of training doctors in the group. Therefore the number of posts in each training year is increased annually by 1/5 of the total increase in posts .

Applying this to the model, in 2002/03 the baseline is 471 SpR or 94 SpR per training year. There are 5 new posts created for work/life balance, giving a new baseline of 476 or 95 ($476 / 5$) SpR per training year. In 2003/04, 6 new posts are created for work/life balance and 13 for WTD giving an end of year baseline of 495 ($476 + 6 + 13$) or 99 ($495 / 5$) per training year. This pattern is followed throughout the rest of the model.

Leavers: Based on the information provided by DHSSPS for 2001, and excluding age retirements – 4% applied to baseline for leavers per annum. ($471 \times 0.04 = 19$)

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. In 2002/03 it is assumed that an additional 1% of baseline staff wish to move to part-time ($471 \times 0.01 = 5$). This rises to 2% per annum by 2006/07 ($5 \times 2 = 10$) and 2.5% per annum in 2011/12 ($5 \times 2.5 = 13$)

Working time directive: The assumption is that a 14% increase in staff is required from 2003/04 and a further 14% from 2008/09. However, it is also assumed that the initial increase cannot be achieved in one year and is therefore spread over 5 years, with the second increase spread over four. ($471 \times 0.14 / 5 = 13$ per annum, $471 \times 0.14 / 4 = 16$ per annum).

Total SpR per annum: Total of all of the above factors.

Requirement for NCCG: Total per annum from NCCG table above.

Requirement for GP Reg: Total per annum required from GP projections below.

Total SHO requirement: Total of SpR per annum + Requirement for NCCG + Requirement for GP Reg.

Current SHO Supply: This is the number of SHO projected to “graduate” each year, and is the annual SHO figure shown at the top of the SHO table below.

Over supply / shortfall: The difference between the current SHO supply and the total SHO requirement.

Senior House Officers

Table 7.5.4

Projected New SHO Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Annual SHO	180	184	192	197	202	207	212	218	224	230
Leavers	29	29	29	29	29	29	29	29	29	29
Vacancies	10	10								
Work / life balance	7	7	7	7	7	7	7	7	7	7
Demand										
WTD	0	13	13	13	13	13	17	17	17	17
Total per annum	226	243	241	246	251	256	265	271	277	283
Current PRHO Supply	188	214	219	224	229	233	238	244	250	256
Shortfall	-38	-29	-22	-22	-22	-23	-27	-27	-27	-27

SHO baseline = 720 (current employees at September 2001 per HRMS).

Assumed four year training programme.

Basis of calculations;

Annual SHO: It is necessary to calculate an annual intake into year 1 and the output (“graduation”) from year 4 of the SHO training programme. This gives you both the number of SHO posts available each year for incoming PRHOs, and the number of “graduating “ SHOs available to take up SpR, NCCG or GP Reg posts. It is assumed that the number of staff are spread evenly across the four years. Therefore, for 2002/03 the baseline number of SHO posts has been spread over the four years to give an initial annual intake / output of $720 / 4 = 180$.

Each year, the total number of SHO posts will be increased by the additional posts required to meet the needs of the working time directive and the work/life balance, and the filling of vacancies. (Leavers have no impact on the overall number of posts, but do have an impact on the number of staff required.) These additional posts relate to the whole SHO workforce are therefore assumed to be spread across the four years of training doctors in the group. Therefore the number of posts in each training year is increased annually by 1/4 of the total increase in posts .

Applying this to the model, in 2002/03 the baseline is 720 SHO or 180 SHO per training year. There are 7 new posts created for work/life balance and 10 vacancies filled, giving a new baseline of 737 or 184 ($737 / 4$) SHO per training year. In 2003/04, there are a further 10 vacancies filled, 7 new posts are created for work/life balance and 13 for WTD giving an end of year baseline of 767 ($737 + 10 + 7 + 13$) or 192 ($767 / 4$) per training year. This pattern is followed throughout the rest of the model.

Leavers: Based on the information provided by DHSSPS for 2001, and excluding age retirements – 4% applied to baseline for leavers per annum. ($720 \times 0.04 = 29$)

Current vacancies: Based on anecdotal evidence 20 vacancies, which, for the purposes of the model are assumed to be filled in the first two years ($20 / 2 = 10$).

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. It is assumed that each year an additional 1% of baseline staff wish to move to part-time ($720 \times 0.01 = 7$ per annum).

Working time directive: The assumption is that a 14% increase in staff is required from 2003/04 and a further 14% from 2008/09. However, it is also assumed that the impact of alternative patterns of care will reduce this increase by 33% and that the initial increase cannot be achieved in one year and is therefore spread over 5 years, with the second increase spread over four ($720 \times 0.14 \times (1.0 - 0.33) / 5 = 13$ per annum, $720 \times 0.14 \times (1.0 - 0.33) / 4 = 17$ per annum).

Total SHO per annum: Total of all of the above factors.

Current PRHO Supply: This is the number of PRHO projected to “graduate” each year, and is the annual PRHO figure shown at the top of the PRHO table below.

Over supply / shortfall: The difference between the current PRHO supply and the above total SHO per annum.

Pre-Registration House Officers

Table 7.5.5

Projected New PRHO Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Annual Intake	212	214	219	224	229	233	238	244	250	256
Leavers	2	2	2	2	2	2	2	2	2	2
Work / life balance	2	2	2	2	2	2	2	2	2	2
Demand										
WTD	0	3	3	3	3	3	4	4	4	4
Total PRHO needs	216	221	226	231	236	240	246	252	258	264
Student Supply	183	173	169	169	180	180	180	180	180	180
Shortfall	-33	-48	-57	-62	-56	-60	-66	-72	-78	-84

PRHO baseline = 188 (current employees at September 2001 per HRMS) August 2002 = 212 per NICPMDE.

Basis of calculations;

Annual Intake: The annual intake each year is increased by the number of posts created in the previous year for wtd and work/life balance.

Leavers: Based on anecdotal evidence - 1% applied to baseline for leavers per annum ($212 \times 0.01 = 2$ per annum)

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. It is assumed that each year an additional 1% of baseline staff wish to move to part-time ($212 \times 0.01 = 2$ per annum).

Working time directive: The assumption is that a 14% increase in staff is required from 2003/04 and a further 14% from 2008/09. However, it is also assumed that the impact of alternative patterns of care will reduce this increase by 33% and that the initial increase cannot be achieved in one year and is therefore spread over 5 years, with the second increase spread over four ($212 \times 0.14 \times (1.0 - 0.33) / 5 = 3$ per annum, $212 \times 0.14 \times (1.0 - 0.33) / 4 = 4$ per annum).

Total PRHO needs: Total of all of the above factors.

Student Supply: This is the number of students projected to “graduate” each year from Queens.

Shortfall: The difference between the current student supply and the above total PRHO per annum.

Others

Table 7.5.6

Projected New "Other" Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	6	7	7	13	8	9	15	8	7	24
Leavers	20	20	20	20	20	20	20	20	20	20
Total	26	27	27	33	28	29	35	28	27	44

Other baseline = 244 (current employees at September 2001 per HRMS).

Basis of calculations;

Retirements: Using the 5 year age band profile in Appendix C, assume a retirement age of 62 in 2002/03 moving down to a retirement age of 59 by 2011/12.

Leavers: Based on the information provided by DHSSPS for 2001, and excluding age retirements – 8% applied to the baseline for leavers per annum ($244 \times 0.08 = 20$ per annum)

Total per annum: Total of all of the above factors.

General Practitioners

Table 7.5.7

Projected GP Requirements per annum

	2002 /03	03/ 04	04/ 05	05/ 06	06/ 07	07/ 08	08/ 09	09/ 10	10/ 11	11/ 12
Supply										
Retirements	27	27	27	31	25	30	37	43	43	50
Leavers	12	12	12	12	12	12	12	12	12	12
Work / life balance	11	13	16	19	21	22	24	25	27	27
Demand										
Increased Workload	25	25	25	25	25	25	25	25	25	25
Total GP Reg Requirement	75	77	80	87	83	89	98	105	107	114
Supply	42	75	77	80	87	87	89	98	105	107
Shortfall	-33	-2	-3	-7	4	-2	-9	-7	-2	-7

GP baseline = 1,069 (current at September 2001 per CSA).

Basis of calculations;

Retirements: Using the 5 year age band profile in Appendix C, assume a retirement age of 62 in 2002/03 moving down to a retirement age of 59 by 2011/12.

Leavers: Based on the information provided by CSA for 1998 to 2001, and excluding age retirements – average over three years = 12 per annum

Work / life balance: Number of additional staff required to compensate for staff wishing to move to part-time working. In 2002/03 it is assumed that 1% of baseline staff wish to move to part-time ($1,069 \times 0.01 = 11$). This rises to 2% per annum by 2006/07 ($1,069 \times 0.02 = 21$) and 2.5% per annum in 2011/12 ($1,069 \times 0.025 = 27$)

Increased workload: increase of 250 in the number of consultants employed, achieved over ten years.

Total GP Reg Requirement: Total of all of the above factors.

Supply: For 2002/03 this is the number of GP Registrars who will complete training (per NICPMDE). For future years it is assumed that the number of training posts has been increased to meet the previous year's needs.

Shortfall: The difference between the projected GP Reg training posts and the total GP requirement per annum i.e. the continuing increased requirement for training posts.