

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

**WORKFORCE PLANNING REVIEW- TECHNICAL  
AND SCIENTIFIC STAFF GROUPS**

**Final Report**

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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 technical and scientific staff groups. These include Medical Laboratory Scientific Officer (MLSO), Medical Laboratory Assistant (MLA), Medical Technical Officer (MTO), Assistant Technical Officer (ATO) and Clinical Scientist (CS) grades.

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 technical and scientific services over the next 5 – 10 years.

The detailed terms of reference included:

- an analysis of the current technical and scientific 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 technical and scientific professionals required over the next five to ten years;
- a model that can be applied to predict trends in the supply and demand of technical and scientific 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 David Bingham, DHSSPS Director of Human Resources. 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.

Due to the diverse nature of the staff groups under review the Steering Group broke in to three sub-groups for much of the detailed work, these being:

- MLSOs, MLAs, and Cytoscreeners;
- MTOs (including ATOs); and
- Clinical Scientists.

The work format consisted of key informant interviews, focus groups, review 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 documents which will impact on the future delivery of service in Northern Ireland, including:

- The Acute Hospitals Review Group;
- Building the Way Forward in Primary Care;
- Agenda for Change and Making the Change;
- The European Working Time Directive; and
- Priorities for Action 2002 / 03.

## **1.3 Workforce Structure**

The data used for the review was the HRMS Payroll Information as at September 2001 as supplied by the DHSSPS. 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 MLSO, MLA, Cytoscreeners**

There were 545 MLSO in the workforce, an increase of 7% over the previous four years, with the majority (78%) on the lowest two grades. The modal age is 45-49, and there has been a 5% increase over the last four years in the number of female staff, to 52% of the workforce. 60% of MLSO1 are female, compared to 12% at MLSO4. 14% of staff work part-time.

There were 55 trainee MLSO of which 73% are female.

There were 118 MLA staff, an increase of 19% over the previous four years. This is a young staff group, with 42% under 25, and 67% under 30. The group is predominantly female (62%) and only 9% work part-time.

There were 7 Cytoscreeners, including a trainee, with an even spread of ages from early twenties to early sixties.

### **1.3.2 MTO, ATO**

The MTO group consisted of 306 staff at September 2001, a growth of 10% over four years. This group covers a wide range of specialties, from clinical roles such as in cardiology to medical physics and mortuary technicians. An increasing number of staff are under 25, with a modal age of 35-39, and 58% are female with 17% working part-time.

There were also 12 Trainee MTOs and 51 ATOs.

### **1.3.3 Clinical Scientists**

In September 2001 there were 93 Clinical Scientists working in both laboratories and medical physics. This is an older age group with 23% of staff over 50, and the largest proportion (19%) being 40-44. 60% of the group is male, and only 10% (all female) work part-time.

## **1.4 Key Issues – Supply**

During the key informant interviews and focus groups a range of key supply issues were identified in relation to recruitment and retention.

### **1.4.1 MLSO, MLA and Cytoscreener**

A major concern expressed by all grades of MLSO was the lack of bursary available to students in their placement year. This puts them at a disadvantage compared to other placements outwith the health service. Unlike other similar health care professions, such as nurses and PAMs (who receive bursaries or whose fees are paid) Biomedical Science students receive no financial assistance, so making the MLSO role less attractive in comparison. Concern was also expressed as to the availability of good structured training in organisations which are often struggling to meet ever increasing service demands.

Starting salaries for graduates are not attractive or competitive, and there is a lack of career structure, resulting in staff remaining on the same grade for many years. Work pressures and the demands for provision of out of hours services, coupled with the difficulties of meeting the working time directive with limited staff, and an increasing percentage of females entering the workforce looking for more family-friendly working practices, result in increased strains on the current workforce and do not make these roles attractive to new graduates.

Pressure is also being seen at the top of the MLSO scale as a result of shortages in (medical) consultant laboratory staff.

There is a very high turnover in MLAs (in 2001, 42 staff left, which represents approximately 24% of the staff group) and a serious difficulty in recruitment due to the low levels of pay and lack of a career structure.

Cytoscreeners are also on low pay, but a primary concern is the timescale for training (2 years) and the lack of succession planning to ensure trained staff are available for the future.

#### **1.4.2 MTOs**

As with Biomedical Science graduates, the lack of financial assistance during the Clinical Physiology degree course, (and in particular the placement year,) and the low levels of starting pay for graduates are significant factors in the ability to attract new staff to the profession.

At present the University of Ulster degree in Clinical Physiology provides modules suitable for four of the specialties which come under the RCCP banner – cardiology, respiratory medicine, audiology, and neurophysiology. There are currently difficulties providing relevant modules of the degree for those specialties outwith the four mentioned above, due to the small number of staff requiring training, primarily as a result of low turnover in these specialties

As a result, Trusts are offering students on their placement year full time employment, requiring the student to complete their degree studies on a part-time basis. As student numbers are small, this has a detrimental effect on the running of the degree course.

Pay levels for MTOs are low, and career progression is not automatic, resulting in staff remaining on the same grade for considerable periods of time. Due to the lack of trained staff in the market place, the ability of the service to provide family friendly policies and cover the service needs is limited, which is a serious issue in a workforce where more than 60% of the staff are female.

The Regional Medical Physics Agency is experiencing difficulties in recruiting and retaining MTO staff due to the lack of a structured education and training programme, and low levels of pay.

#### **1.4.3 Clinical Scientists**

The primary concern for laboratory Clinical Scientists is the potential number of retirements anticipated in the next ten years (23% of staff if they retire at 60), and the requirement to start succession planning now, due to the long timescale needed to train a Clinical Scientist (8-10 years). The DHSSPS currently funds three trainee Grade A posts in Biochemistry, but succession planning needs to be carried out for all disciplines.

The Regional Medical Physics Agency (RMPA) has had significant difficulty in recruiting Grade B Clinical Scientists, particularly in radiodiagnostic physics, as the number of qualified staff available to fill such posts in Northern Ireland is limited, and there is a shortage of such staff in the rest of the United Kingdom.

The Department currently funds four trainee Grade A Clinical Scientist posts in the Agency.

#### **1.4.4 Low Profile**

Common to all staff groups, except perhaps Clinical Scientists, was the view that their roles had a very low profile, both within the service and externally.

They felt that the public viewed the NHS as being “doctors and nurses” with little recognition for the essential role which they provide. This, coupled with the low levels of pay offered, in particular to University Graduates, does not make the roles attractive. Concern was also expressed that within organisations the role and workload of these groups of staff was not fully recognised, particularly in relation to appointment of new Consultant staff or the expansion of clinical services, where the implications for support functions may not be adequately acknowledged or resourced.

## **1.5 Key Issues – Demand**

### **1.5.1 Laboratories – covering MLSO / MLA / Cytoscreeners / Clinical Scientists**

The key areas of demand affecting laboratory staff are:

- an increase in the volume of activity. Recent data demonstrates that laboratories have consistently seen an increase in tests requested of, on average, 6-7% per annum for a number of years. For some specialties the increase is much greater. Significant increases in primary care requests and changes to clinical practice along with clinical governance and the increasing threat of litigation are considered key drivers behind this;
- an increase in the complexity of the tests requested and the depth and speed of reporting required;
- an increasing requirement for laboratories to achieve and maintain CPA accreditation, including requirements for the appointments of Quality Managers, along with increasing workload due to areas such as clinical governance, waste disposal, infection control, clinical audit, blood safety and blood transfusions;
- an increasing need to provide out of hours cover and for this cover to result in staff needing to work continuously throughout their on-call duty;
- an increasing demand on staff with regards to providing training officers for students on degree placements;
- the ongoing development of new areas of laboratory science, for example in the fields of genetics and molecular biology, along with increasing sub-specialisation, and the need to keep abreast of new techniques; and
- the development of near patient testing which could potentially require significant input from laboratory staff, particularly with regards to quality control.

### **1.5.2 Clinical MTOs**

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

- the changing roles of medical staff, with the requirement for other professions to take on extended roles previously delivered by doctors;
- potential developments in the delivery of health care such as digital hearing aids and the National Strategic Framework for Cardiac Services ;
- changes to the working patterns and hours of delivery, for example an increasing demand for evening and weekend clinics; and
- for certain specialties such as cardiac theatre technicians the requirements of the Working Time Directive will put significant pressure on services currently covered by a small number of staff.

## 1.6 Data Modelling

The baseline data used was supplied by the DHSSPS and was based on the annual Trusts' payroll download at September 20001. A series of assumptions was developed with the Steering Groups and applied to the data:

- **Retirements:** A retirement age of 60 was assumed for all staff;
- **Other leavers:** The DHSSPS completed an analysis of staff leaving in 2001 and a percentage estimated was calculated. With the exception of MTOs and Clinical Scientists these percentages were applied to the models. The MTO and Clinical Scientist percentages were felt to be unrealistically high and were adjusted down. The final percentages were MLSO – 3%, MLA – 29%, MTO – 1.5%, CS – 4%;
- **Graduating Students:** From information provided by the University of Ulster the estimated number of Biomedical Science graduates filling MLSO grades each year is 31;
- **Current Vacancies:** Based on information provided by the DHSSPS from its vacancy review in March 2001, and information gathered from key informants, the percentages applied were MLSO – 4%, MLA - 4%, MTO – 5%, RMPA MTO – 21%, CS – 3 vacancies;
- **Workload projections:** an increase in staff requirements of 1% rising to 2% after 5 years has been assumed, excluding the RMPA where specific figures (2 CS and 3 MTO per annum) have been included;
- **Working Time Directive:** It is assumed that MLAs, Clinical Scientists and most MTOs are not affected. A 10% increase in staff required has been assumed for MLSO and a small number of MTO specialties;
- **Loss due to work / life balance:** Due to an increasing percentage of females entering the profession, for MLSO it is assumed an additional 1.5% of the workforce will wish to move to part-time working each year. For the remaining staff groups, where the increase in females is not so marked, it is assumed that 1% per annum will wish to move to part-time; and

- **Continuing Professional Development:** 10 sessions per annum per member of staff have been included for MLSO and MTO staff. No CPD has been included for MLA staff, and CS staff are assumed to currently cover their CPD requirements.

The above assumptions were applied to the baseline data, resulting in the following estimated annual turnover and potential additional requirement projections over the next five years.

Table 1.1  
**Summary of Projections**

	2002/03	03/04	04/05	05/06	06/07	Total
<b>MLSO</b>						
Supply Shortage	3	7	7	7	7	31
Potential Additional Requirement	59	49	9	11	12	140
Net Demand	62	56	16	18	19	171

The major demand issue facing MLSO in the next few years will be the implementation of the working time directive, and filling the current shortfall in staff. The current number of graduates choosing to join the profession will not be sufficient to meet the total potential additional demand.

Table 1.2  
**Summary of Projections**

	2002/03	03/04	04/05	05/06	06/07	Total
<b>MLA</b>						
Estimated Annual Turnover	36	36	36	36	36	180
Potential Additional Requirement	3	3	2	2	2	12

The main problem faced by the MLA group is that of retention and high turnover, with their ability to fill posts dependent on market forces. Whilst they may attract staff into posts, they are unable to retain them with an annual turnover of 24%.

Table 1.3  
**Summary of Projections**

	2002/03	03/04	04/05	05/06	06/07	Total
<b>MTO</b>						
Estimated Annual Turnover	16	11	11	11	11	60
Potential Additional Requirement	34	30	7	8	9	88

Not all types of MTO require degree level entry qualifications, so student numbers have not been included above, however, in some specialties such as Cardiology it is known that there are insufficient graduates from the Clinical Physiology degree to meet their needs. The ability to fill potential new posts will vary by specialty, entry level requirements and market forces.

Table 1.4  
**Summary of Projections**

	2002/03	03/04	04/05	05/06	06/07	Total
<b>Clinical Scientist</b>						
Estimated Annual Turnover	6	6	6	6	6	30
Potential Additional Requirement	5	4	3	3	3	18

The ability to fill additional Clinical Scientist posts for laboratory scientists is dependent on the availability of funding for training posts (currently the DHSSPS funds three trainee posts). The ability to fill posts at the Regional Medical Physics Agency is more of a concern due to known national shortages (the DHSSPS fund four trainee posts).

## 1.7 Conclusions and Recommendations

From both the qualitative analysis and the detailed data modelling the following conclusions and recommendations were drawn:

### 1.7.1 MLSO/MLA/Cytoscreeners

For the MLSOs the projected shortfall in staff is a serious concern due to the very limited number of students currently studying for relevant degrees, and the ability to attract these students in to the HPSS. It is clear that in the next five years, these staffing gaps will not be able to be filled by graduates alone even if significantly more were attracted into HPSS careers, and alternative

measures will need to be taken. This has to include reviewing alternative strategies for service provision.

For MLAs, the most significant concern is the high level of turnover and the service's ability to retain staff given the low level of pay.

Whilst Cytoscreeners are small in number, they have an important role to play, and it is essential that the service is in a position to manage any anticipated changes in personnel.

We would make the following recommendations;

- **Bursaries for Student Placements:** The Department should review the potential for establishing some form of financial assistance to students undertaking the Biomedical Science degree in order to make it as attractive to students as other professions, and to encourage science students to undertake their placement year in the HPSS;
- **Extension of Biomedical Scientist Grade:** The implementation of the extension of the Biomedical Scientist grade in cytology should be reviewed to assess the appropriateness of extending the grade in other specialties, in order to alleviate pressures in laboratories resulting from a shortage of medical staff;
- **Diploma in Professional Practice (Pathology):** The pilot should be evaluated and modified if necessary to ensure its ready adoption on a wider scale within NI and elsewhere. Reducing the timescale for training required by new Biomedical Science graduates prior to State Registration should assist in the recruitment of new appropriately qualified staff to the profession;
- **Career Structure:** Work should be carried out to review the skill mix required and the potential to develop some form of career structure for MLAs which includes CPD and the potential to progress to MLSO grades. Trusts should also review the potential within their organisations to fast-track staff from MLSO1 to MLSO2 grades. The reasons for the currently low proportion of women at the more senior MLSO grades, in comparison with the profession as a whole, should also be investigated along with, if relevant, potential means by which to address the gap; and
- **Cytoscreeners Succession Planning:** The Department should review the potential for increasing the number of trainee Cytoscreeners over the next five years to ensure qualified staff are available to fill vacancies which will arise due to retirements.

### 1.7.2 MTOs

Again the modelling has demonstrated a potential shortfall in available staff over the next five years. A significant element of this relates to specialties such as Cardiology where there is a shortage of students graduating with relevant degrees. We would therefore make the following recommendations:

- **Clinical Physiology Degree:** Work should be carried out between the University of Ulster and the service to review the delivery of the Clinical Physiology degree to increase the flexibility of its approach and therefore the specialties that it can support. This should help to determine ways in which small numbers of staff for specialist areas can receive the relevant training and qualifications, whilst recognising that the numbers required each year will fluctuate; and
- **Bursaries for Student Placements:** As with MLSOs, there is again the view that the offering of some form of financial assistance for students would significantly assist in recruitment in to the Health Service, and bring this group of professions more in line with their clinical colleagues.

### 1.7.3 Clinical Scientists

Recruitment in to this staff group (for laboratory staff) is not a major concern, but a number of staff are due to retire in the next five to ten years and this needs to be recognised now. In order to ensure that suitably qualified staff will be available in the future, the Department should review the training currently funded for Grade A Clinical Scientists to extend it, where necessary, across the laboratory specialties. It should be targeted to specialties of greatest need, based on an annual review of future staffing shortages and succession planning for retirements.

Current national shortages for CS staff for the RMPA are a concern and alternative measures may need to be reviewed to overcome this. The Department and the RMPA should also review the potential for further developing training schemes in the Agency to help overcome their recruitment problems and increase the potential to develop expertise in these areas within Northern Ireland.

### 1.7.4 Service Wide

There are also a number of recommendations we would wish to make which apply to all specialties and staff groups covered by this review:

- **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 currently being considered. Whilst this clearly sets out a potential shape for the future provision of services, the outcome of the review is not yet known;

A clear strategy for the future structure of laboratory services in Northern Ireland is needed. The Hayes review stated that “We believe that the pressures on the pathology service to deliver a high quality cost effective service will make it increasingly difficult to sustain the current configuration of laboratories”. Alongside this, development of an integrated IT strategy and system would significantly assist

laboratories in the management of their workload and would need to play a key role in any redeveloped service model. Common approaches to equipment purchase will enable easier movement of staff without requiring additional training;

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;

- **Raising Role Profiles:** We would recommend that work be carried out to review current recruitment practices in the service. The aim should be to increase the profile of roles carried out by the Technical and Scientific staff groups and increase public awareness, particularly amongst school leavers, in order to attract a greater proportion in to relevant further education courses;
- **Benchmarking:** Benchmarking is already carried out in the Belfast Link Laboratories and work should be carried out to set benchmarked norms for workload across the province based on volumes, complexity, training obligations etc. to assess staff numbers required. This would assist in determining detailed workforce planning and aid decisions with regards to priorities for future resource investment. It would also provide a useful tool for assessing, for example, potential service reconfigurations such as those proposed by Hayes. This recommendation echoes that of the NI Assembly Public Accounts Committee following its review of Pathology Laboratories (reference: 06/01/R);
- **Funding for Training:** Work is required to quantify the financial impact of the increasing requirements for training, including the appointment of training officers, and the impact of proposed requirements for CPD for those staff groups where such formal training programmes do not currently exist;
- **Categorisation of Staff on Payroll:** It would be useful if agreement could be reached as to the classification of staff on the payroll system to enable valid comparisons of staffing levels to be made between organisations in the future. For example, the range of names used for differing specialties does not lend itself to useful comparisons between organisations; and
- **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.

## 2. INTRODUCTION

### 2.1 Background

A modern NHS 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 NHS 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 technical and scientific staff across Northern Ireland. The aim of the review is to inform the Department's planning in the provision of training for these professions to facilitate service continuity and development over the next five to 10 years. This report is the result of that review.

Technical and scientific staff provide a range of scientific, clinical and technical expertise across an array of specialties and sub-specialties. They are employed generally on Medical Laboratory Scientific Officer (MLSO), Medical Laboratory Assistant (MLA), Medical Technical Officer (MTO), Assistant Technical Officer (ATO) and Clinical Scientist (CS) grades and typically work across a number of directorates and locations, principally (but not exclusively):

- laboratories;
- medical physics;
- blood transfusion service;
- mortuaries;
- audiology, respiratory medicine;
- EEG, neurophysiology;
- cardiac and cardiology services; and
- theatres.

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 technical and scientific workforce required in the future. These include:

- the increasing scope for extension of roles 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; and
- the problems of recruiting and retaining trained staff because of competition from other sectors.

### **2.1.1 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 professional technical and scientific services over the next 5 – 10 years.

The detailed terms of reference included:

- an analysis of the current technical and scientific 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 should set out the following key elements:

- the predicted number of technical and scientific professionals required over the next five to ten years;
- a model that can be applied to predict trends in the supply and demand of technical and scientific 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.

## **2.2 Review Methodology**

### **2.2.1 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 David Bingham, DHSSPS Director of Human Resources. 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.

### **2.2.2 Sub-groups**

The Technical and Scientific staff group is a large and diverse group requiring input and involvement from a range of individuals. It was therefore decided at the initial Project Initiation meeting to sub-divide the group into three for the purposes of the detailed discussions, with the whole group reconvening for approval of the final report. These three groups were;

1. MLSOs, MLAs and Cytoscreeners;
2. MTOs (including ATOs); and
3. Clinical Scientists.

### **2.2.3 Work Format**

The format for the work carried out was the same for each group and consisted of the following;

- i. Key informant interviews with relevant personnel (see Appendix B for a complete list of personnel interviewed) and a series of focus groups (see Appendix C) with a range of staff and students. These were held to identify the key issues affecting recruitment and retention within the disciplines, 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.

## **2.3 Structure of this Report**

This report sets out the findings of the review of the technical and scientific workforce as follows:

- Section 2 – An overview of the context within which the review is taking place, including key policy drivers;
- Section 3 - A breakdown of the current workforce, including current career structures and roles;
- Section 4 – Analysis of the current supply issues being faced by each staff group;
- Section 5 – Analysis of the current major demand issues affecting the service and impacting on staff workloads;
- Section 6 – Modelling of the current workforce data to provide a prediction of future need against the projected supply within the workforce;

- Section 7 – A review of current national policies which will have an impact on a number of the issues raised; and
- Section 8 – Conclusions and recommendations arising from the report.

### **3. CONTEXT**

#### **3.1 Overview**

The NHS, 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:

- 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 standards; and
- European legislation and the impact on available staff.

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;
- planning needs to be integrated with service and financial planning;
- the use of a holistic approach, looking across primary, secondary and tertiary care or across staff groups;
- response to service changes and developments; and
- support for 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.

The elements of these strategies that impact on workforce planning are discussed below.

### **3.2.1 The Acute Hospitals Review Group**

The Health Service in Northern Ireland is currently considering the recommendations of the Acute Hospitals Review Group 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 Agenda for Change and Making the Change**

Through “Agenda for Change”, Northern Ireland is working in conjunction with the rest of the UK to modernise the NHS pay system, to reward staff for what they do and for their skills and ability, rather than for the job title.

The proposals aim to facilitate the introduction of new ways of working that will accommodate technical advances and break down traditional professional boundaries. Section 8.1 sets out these proposals in more detail.

As an extension to Agenda for Change, “Making the Change” sets out a framework for the way the Healthcare Science professions need to develop and plan for the changing environment of health care in the future. It builds on the impact that science and technology has already had on the NHS and recognises that new developments will continue to be a major driver for change amongst the professions. Section 8.2 sets out the key issues and proposals.

### **3.2.4 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. Whilst it is recognised that this has not yet been achievable it is a necessary requirement for all HPSS organisations to meet the Directive as soon as possible.

### **3.2.5 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.

## **4. THE SCIENTIFIC AND TECHNICAL WORKFORCE**

### **4.1 Workforce Structure**

As previously mentioned, the Technical and Scientific workforce is made up of a number of different staff grades, with different roles, entry requirements and career structures. The following provides a brief overview of the main grades covered by this report.

#### **4.1.1 MLSOs**

MLSOs analyse a variety of sample types to diagnose different disease states or to monitor drug treatments, providing services within recognised quality systems. They use sophisticated analysers along with manual interpretative techniques within a diverse range of specialties. These include cytopathology, haematology, histopathology, microbiology, immunology, clinical chemistry, medical genetics, tissue typing and transfusion science. Many provide training programmes for trainee scientists and have management responsibilities for their laboratories. Where required, they provide a comprehensive out of hours working regime. .

Trainee MLSOs require a recognised or accredited Biomedical Science Degree (provided by the University of Ulster, Coleraine). This degree normally includes a year of work placement, preferably undertaken in a NHS laboratory. They are also required to undergo training for at least one year post graduation before applying for State Registration. University of Ulster Destination Survey data indicates that in 2001, 18 of the 40 graduates on the approved degree went into health care employment. However only an estimated half of these went into HPSS employment in Northern Ireland. Others took up employment in health sector positions in GB or the Republic of Ireland. Some graduates from the recognised degree choose to complete the MSc in Biomedical Science before entering employment. University of Ulster estimates that of the 10 students completing the full-time MSc each year, approximately 2/3 will enter HPSS employment in NI.

Graduates are also recruited from degrees that have not been approved or accredited but whose qualifications have been accepted by the Health Professions Council (HPC) as suitable. They must complete a Postgraduate Certificate in Biomedical Science (provided by the University of Ulster, Coleraine) and undertake training in an approved laboratory prior to applying for State Registration. In 2001, 15 trainees completed the Postgraduate Certificate and in 2000, 17 completed it.

Trainee MLSOs typically take between 1 and 2 years to complete the training required for State Registration depending on whether they entered with or without the recognised degree. However, Trainees are providing a service in the labs and in some cases, staff shortages restrict their ability to rotate between the required areas.

On achieving State Registration Trainees move to an MLSO Grade 1. It is generally thought that they need another two years of work experience before they can provide a stand alone out of hours service.

Post qualification there is no automatic career progression, other than through vacancies or service expansion.

#### **4.1.2 MLAs**

MLAs carry out a range of functions in pathology laboratories assisting MLSOs, including preparation of test media, making up and sterilising chemical solutions, plating samples, separating blood serum and plasma and patient identification entry. Whilst many enter the profession with a science degree, the minimum level of qualification required is five "O" levels, . MLAs are not State Registered, and there is no established career structure.

#### **4.1.3 Cytoscreeners**

Cytoscreeners check for early signs of cellular abnormality in women by examining cervical smears under the microscope. Entry-level requirements for the profession are five "O" levels, including English and at least one science subject. At present it takes two years to train a cytoscreener in the laboratory, at the end of which they are required to pass the NHS CSP exam in cervical screening. They are then reassessed every eight months, and receive update training every three years. The volume of work that staff members are allowed to undertake must be within a set range, and the quality of their work is constantly monitored.

#### **4.1.4 ATO/MTO**

ATOs provide support to the MTOs in a range of clinical areas, such as audiology, cardiology and renal medicine. There are no entry level requirements and they are not State Registered, nor is there a career structure.

MTOs work in a range of clinical and non-clinical areas. Those in clinical specialties such as Cardiology, Respiratory Medicine, Audiology, and Neurophysiology usually require a Clinical Physiology degree from the University of Ulster for entry. This degree includes a work placement year and can be completed either full or part time. Many specialties also require a year of training post graduation. At present, due to the short supply of staff particularly in Cardiology, this degree is not the only entry route, and trainees with alternative science degrees are also taken on. (According to the University of Ulster's Destination Survey figures, in 2000, 10 out of 20 graduates of the degree went in to MTO posts in Northern Ireland, and in 2001 the figures were 11 out of 16.)

State Registration is currently being developed with the Health Professions Council for a number of specialties and it is likely that later in 2002 it will be determined that the Clinical Physiology degree will be required for registration for these professionals.

However, it should also be noted that not all MTOs require degree entry, and some will not be required to become State Registered in the foreseeable future e.g. cardiac theatre technicians, post mortem technicians etc.

MTOs working for the Regional Medical Physics Agency have two entry routes, either degree or non-degree with BTEC/ONC being the minimum qualification. They provide technical services in scientific and other departments or are involved in the maintenance and development of biomedical equipment. The diversity of roles requires different academic qualifications and training, such as radiation physics, computing, physiology and instrumentation. Whilst there is no formalised training scheme in NI, a national scheme has recently been launched.

As with other technical and scientific roles, there is no automatic career progression for MTOs, and higher grades typically have a range of management responsibilities.

#### **4.1.5 Clinical Scientists**

Laboratory clinical scientists provide clinical interpretation of scientific data and advise on the diagnosis of disease and monitoring of treatment. They are involved in evaluation, research and development of investigative systems and set and monitor quality standards to meet current and future demand. Clinical Scientists at the highest grade (Grade C) provide scientific leadership and direction and may act as Head of Department.

At present a new (laboratory) Clinical Scientist would join the profession as a trainee on Grade A with both a primary degree (the minimum entry requirement) and, more normally, in addition a post graduate qualification such as a Masters and / or PhD. After 3-4 years training they would move to a Grade B (which is considered the career grade) and work towards their MRC Pathology qualification. This would normally take a further 5 – 6 years.

Appointments to Grade B positions may occur in some disciplines where expertise in a specialised field is required. Progression up the Grade B salary scale requires formal assessment.

To move to a Grade C post requires formal assessment by external assessors, as does attainment of any discretionary points.

Clinical Scientists employed by the Regional Medical Physics Agency can generally be split into medical physicists or clinical engineers. They apply scientific and clinical skills at a high level and provide advice, innovation and development to diagnostic and therapeutic techniques. Their roles range from Radiation Protection Advisors to provision of specialised clinical physiological measurement services.

The current main career route within the Agency is graduate entry followed by two years full-time education, incorporating a recognised MSc, and in-service testing. Two years part-time training leading to State Registration follows this. Further in-service development leads to Clinical Engineer, Chartered Physicist or Corporate Membership of the professional body and eligibility for Principal Clinical Scientist grading.

## 4.2 Workforce Composition

The data used for the analysis of the current workforce composition and data modelling has been provided by the DHSSPS and is based on the annual Trusts' download of payroll information (HRMS) as at September 2001.

This is the only source of information of this type available within the timescale of this review, and whilst it is recognised that discrepancies exist with regards to how the individual trusts have categorised their staff (whether within specialty, grade, or site) it is felt that for overall trends it is sufficiently robust.

Appendix D provides a series of tables showing the composition of the MLSO, MLA, MTO, ATO and Clinical Scientist workforces as per the Trust downloads, and key trends, in terms of:

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

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  
**Technical and Scientific Workforce (2001)**

<b>Workforce Group</b>	<b>Number in Workforce</b>	<b>Change 1998-2001</b>	<b>% Change 1998-2001</b>
MLSO	545	38	7%
Trainee MLSO	55	24	77%
MLA	118	19	19%
Cytoscreeners	7	1	17%
MTO	306	29	10%
Trainee MTO	12	3	33%
ATO	51	2	4%
Clinical Scientist	93	27	41%

Source: HRMS September 2001 – RMPA own data 1998

### 4.2.2 MLSOs

In 2001 the largest proportion of MLSOs worked in Haematology (120), with significant numbers in Microbiology (76), Biochemistry (69), Bacteriology (69) and Clinical Chemistry (56). Between 1998 and 2001, largest growth areas in percentage terms were Histo/cytopathology and Tissue Typing which increased by 43% each (from 4 to 7 staff). Greatest MLSO numbers were

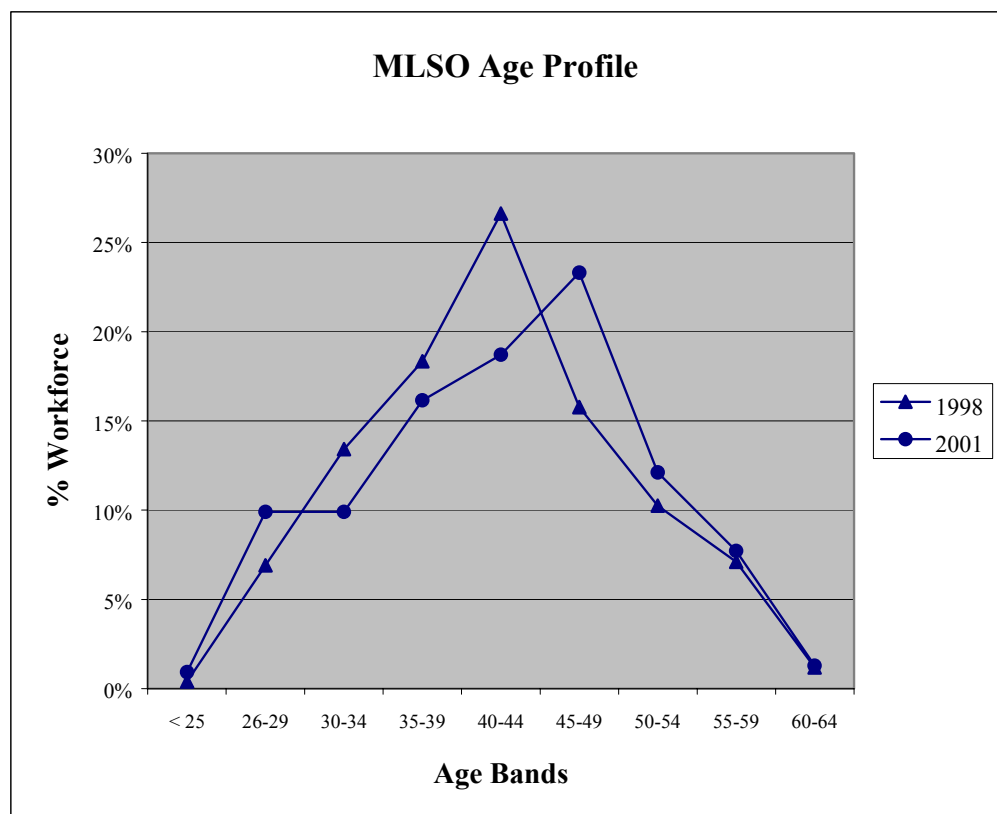
present in Belfast Link Labs which accounted for 225 MLSOs (41% of the total workforce).

In terms of grade mix within the MLSO group, the largest number work in the MLSO1 and MLSO2 grades. The breakdown in 2001 was as follows:

- MLSO1 – 194
- MLSO2 - 232
- MLSO3 – 86; and
- MLSO4 – 33.

Figure 4.1 shows the age profile for MLSOs for 1998 and 2001. It illustrates the recent shift in age distribution from a modal age of 40-44 to a modal age of 45-49 and the drop in numbers at lower age categories.

Figure 4.1  
**MLSO Age Profile**



Source: HRMS

The gender split within the MLSO group has changed between 1998 and 2001, with a 5% increase in the proportion of females in the workforce. The balance in 2001 was:

- Female 52% workforce; and
- Male 48% workforce.

The proportion of women MLSOs decreases as grade increases. At MLSO1 grade, 60% were female (September 2001), but this decreases to 48% at MLSO2, 16% at MLSO3 and 12% at MLSO4.

The number of MLSOs working part-time has increased only slightly, from 64 in 1998 to 78 in 2001. This represents a percentage increase of one per cent from 13% to 14% in this period.

Overall, the MLSO staff group has grown by 7% between 1998 and 2001.

In 2001 there were an additional 55 MLSO Trainees not included in the figures above. These are staff providing laboratory services while undertaking the training required to achieve state registration. Almost three-quarters (73%) of the MLSO Trainees in 2001 were female.

#### **4.2.3 MLA**

The MLA workforce has grown rapidly between 1998 and 2001. Total numbers stood at 99 in 1998 but had risen to 118 by 2001 – a 19% increase. The MLA staff group is very young, with 42% being aged under 25 in 2001 and 25% being aged between 26 and 29. The workforce is predominantly female (62%), although the proportion of men has increased slightly (from 34% in 1998 to 38% in 2001).

Part-time working has decreased slightly in recent years – 11% of the group worked part-time in 1998 but only 9% were working part-time in 2001.

In 2001, the main work areas for MLAs were in Haematology, Bacteriology, Microbiology, Biochemistry and the Blood Transfusion Service. Each of these areas had between 11 and 23 MLA staff.

#### **4.2.4 Cytoscreeners**

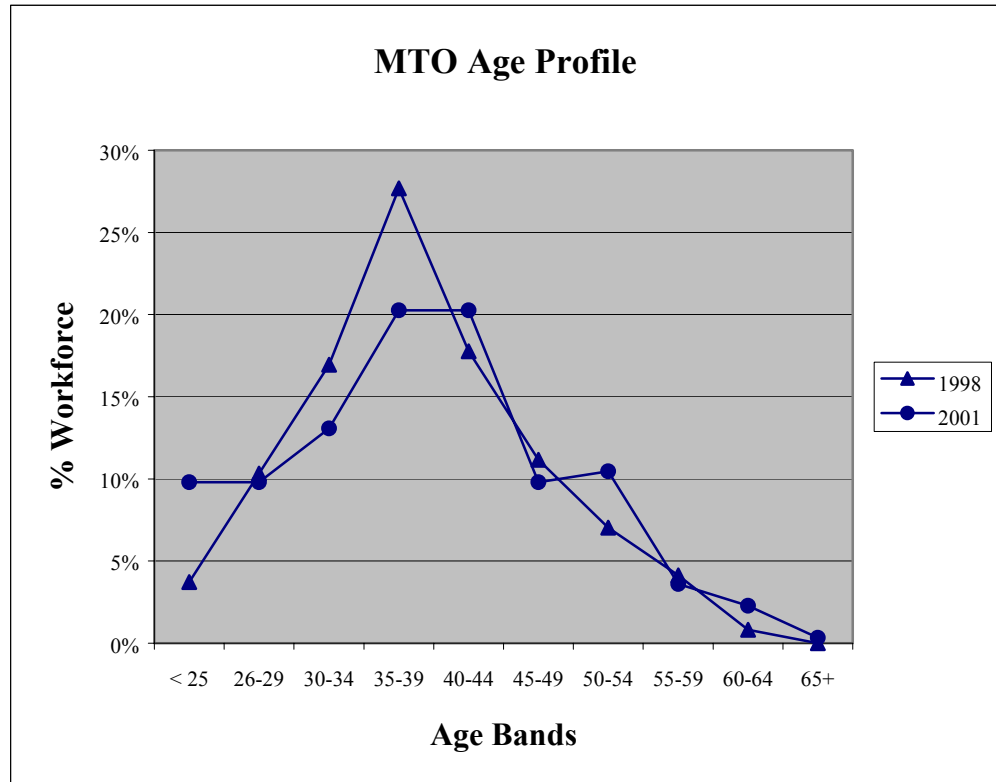
There are 7 Cytoscreeners in Northern Ireland, including one trainee, with an even spread of ages from early twenties to early sixties.

#### **4.2.5 MTOs/ATOs**

The MTO staff group has grown by 10% in recent years – total workforce size was 277 in 1998 and 306 in 2001. In addition, there were 51 ATOs and 12 Trainee MTOs in 2001. Many of the Trainee MTOs in 2001 were employed in Cardiology (5 in total) at either the Belfast City Hospital Trust or the Royal Group of Hospitals Trust.

The MTO age profile illustrates recent shifts, with an increasing proportion of staff in the lowest age category (under 25) and decreasing proportions in 30-39 age categories.

Figure 4.2  
**MTO Age Profile**



Source: HRMS

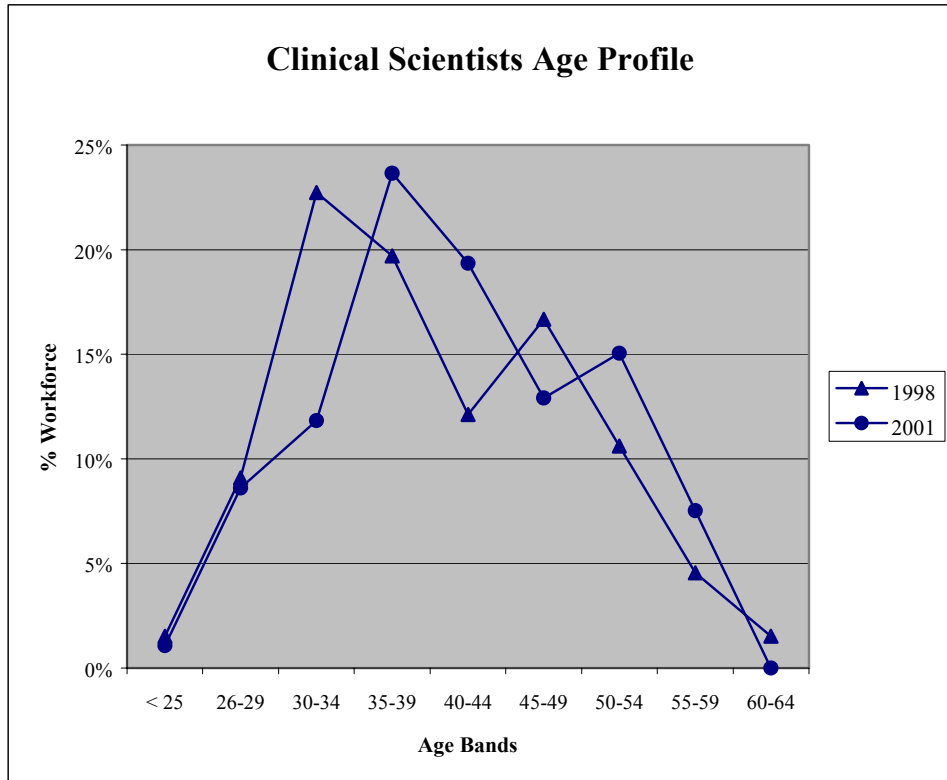
There are more women than men working as MTOs but the proportion of men in the workforce has increased slightly, from 40% in 1998 to 42% in 2001. Less than a fifth of the workforce works part-time and the proportion with part-time status has decreased slightly. In 1998, 20% worked part-time but the proportion had dropped to 17% by 2001. Almost all part-time MTOs are female (98%).

#### 4.2.6 Clinical Scientists

The number of Clinical Scientists increased by 7% between 1998 and 2001 from 87 to 93. The largest proportion of this increase related to growth at Grade B. Clinical Scientists are primarily employed at the Belfast City Hospital Trust, the Royal Group of Hospitals Trust and the Regional Medical Physics Agency (RMPA). These account for 95% of the professional group.

As with MLSOs, the Clinical Scientists' age profile has changed in recent years. There was a substantially lower proportion within the 30-34 age group in 2001 than in 1998 (12% compared to 23%), and a larger proportion within the 40-44 age group (19% in 2001 compared to 12% in 1998). At September 2001, 23% were over 50.

Figure 4.3  
**Clinical Scientists Age Profile**



Source: HRMS

60% of the Clinical Scientist group is male. This represents an increase since 1998 when 55% of the group was male. Only 10% of the workforce group works part-time and all of these Clinical Scientists are women.

## **5. KEY ISSUES - SUPPLY**

Set out below are the key supply issues raised during key stakeholder interviews and focus groups in relation to recruitment and retention within their areas of the workforce.

### **5.1 MLSOs**

#### **5.1.1 Student Placements**

A major concern expressed by all grades of MLSO was the lack of bursary available to students in their placement year. In other parts of the UK, such as Wales, students receive a bursary, and in other similar health care professions students receive some form of financial assistance during their degree, such as the bursary for nurses and the payment of fees for PAMs. In addition, placements outside of the NHS (for example in industry) are generally salaried. This inevitably makes the placements in the Health Service significantly less attractive than those outside the sector and there are concerns that it results in a lower calibre of student applying.

It also affects the number and calibre of graduates applying for permanent employment on graduation, as less numbers will have been inclined to experience the Health Service than might otherwise be the case. At present there are approximately 40 places on the University of Ulster's Biomedical Science degree, of whom on average only 17 / 18 will go on to NHS employment, not all necessarily in Northern Ireland. When recruiting new graduates, the service prefers to employ those who have completed their placement year in an NHS laboratory, but these numbers are limited.

Students expressed a concern that while they contribute significantly to the workload of the laboratory, they receive no financial recognition. Due to pressures on qualified staff, including the need to cover out of hours (which students cannot partake in) and the resultant time off "normal" hours to compensate, the availability of staff to provide proper structured training is limited. Placement students are concerned that they are perceived as simply 'an extra pair of hands' without always having the structured approach to training they require.

Staff also expressed a concern that trusts did not recognise the role which MLSOs play in delivering training to graduates, or the level of time and commitment which this requires.

#### **5.1.2 Starting Salaries MLSO1**

The starting salary for the entry-level Trainee MLSO grade at April 2002 is £11,181 - £12,527. This is considerably lower than most university graduates can expect to earn, particularly after 4 years of studies that incorporate work experience. After completion of training to state registration this rises to £15,244. These timescales and pay rates do not compare favourably with other healthcare professions who follow a similar degree based training route

e.g. nurses and PAMs. Concern has also been expressed that males are not attracted in to the profession because the low salary levels on offer are considered insufficient.

### **5.1.3 Pre-Registration Training**

The duration of the pre-registration training varies for each student as they are required to gain experience in a range of specialties and it is sometimes difficult to release them from one area into another due to staff shortages. The indeterminate duration of the pre-registration training is discouraging to graduates considering a career in the health service.

### **5.1.4 Career Structure**

Due to the lack of career structure, automatic promotion up the pay scale is not available, and staff may remain on the same grade for many years if no opportunities for progression arise.

In many trusts it is necessary to achieve a Masters prior to promotion to a MLSO Grade 2. Access and support to study is very dependent on the individual organisation in which the staff work. Progression beyond MLSO Grade 2 can also be slow. However, it should be recognised that some trusts have implemented quick progression from MLSO 1 to MLSO 2 grades, and this has been considered beneficial to their ability to retain staff.

An alternative career progression route for MLSOs is to transfer to the Clinical Scientist career path, providing the relevant entry qualifications for the Clinical Scientist grade are met. Whilst there are examples of staff who have achieved this, it is not a common career move.

### **5.1.5 Out of Hours Requirements**

At present on-call is not a contractual requirement and is staffed on a voluntary basis. As the requirements for out of hours cover increase, along with increased constraints due to the working time directive, providing safe levels of cover, particularly on the smaller sites, is becoming a major issue.

If we anticipate an increased requirement for flexible and family friendly working practices and a continuing trend towards shift and extended working patterns, this situation will only become exacerbated. Multidisciplinary on call arrangements raise significant concerns about maintaining competence in a structure of training which is based around single disciplines. Staff participating on an on call rota are normally not available prior to or immediately after their shift, so reducing the availability of trained staff to supervise work during normal hours.

Many staff view on-call arrangements as their only way of boosting their take-home pay. Whilst this is available to them in some specialties, it is not available in those, such as tissue pathology, where out of hours cover is not required. This makes the salaries in these areas even less attractive and gives rise to disparities between staff on the same grade. Many staff are also concerned that a move to shift patterns to meet the Working Time Directive may have a detrimental effect on their earnings potential.

Some staff commented that there is significant pressure to do on call, even though it is voluntary, and that they are viewed unfavourably if they do not participate. However, they appreciate the pressure that their non-participation puts the remaining staff under in order to cover the hours.

#### **5.1.6 Work/Life Balance**

As we have seen, there are an increasing number of females entering the profession, although the numbers at higher grades are still low. Approximately 65% of relevant degree students are female and this is continuing to rise.

This rise in the number of females, coupled with a greater emphasis on family friendly policies, is going to put a greater strain on staff resources. Some part timers expressed concern that they were overlooked for promotion, and also that there was a gender bias towards males because they were willing to participate in on-call arrangements, which did not suit females with young families.

#### **5.1.7 Shortfall in Consultant Staff**

Concerns are being expressed with regards to the current and potential shortfall of (medical) Consultant level laboratory staff, particularly given their age profile. Whilst medically trained staff will be the subject of a separate review, the workload and quality issues which this raises impact on MLSOs and Clinical Scientists. Work is being carried out to extend the role of biomedical scientists (see section 7.4) which could potentially relieve some of the pressure whilst also providing additional career opportunities for these highly qualified and experienced staff.

### **5.2 MLAs**

#### **5.2.1 Pay Levels**

This staff grade attracts very low levels of pay, significantly less than professions outside of the healthcare sector, including supermarket checkouts. Data from the annual Trusts' download of payroll information to the Department indicates that 92% of current MLA staff are without discretionary points, on a salary scale of £8,656 - £10,803. This inevitably gives rise to significant difficulties with recruitment and high turnover rates. For example, 42 MLA staff left HPSS employment in 2001 – approximately 24% of the workforce.

#### **5.2.2 Career Structure**

The entry criteria for this level are relatively low. However, whilst applications are generally small in number (and in some cases difficult to attract at all), of those received, many are from candidates who are significantly better qualified, to at least primary degree level. With current employment and recruitment practice it is inevitable that these candidates will be more successful at interview. Unfortunately, these staff are much more likely to be looking for a career with prospects, will become bored with the

routine nature of the work, and will move on as soon as a better opportunity presents itself.

Many of them enter at MLA as they see it as a route in to MLSO posts, or they have been given the impression that there is potential for a good career. Such potential very much depends on the management and site at which they work, and is by no means a certainty. Currently there is no requirement for MLAs to undertake CPD, nor is this anticipated in the foreseeable future.

### **5.3 Cytoscreeners**

#### **5.3.1 Pay Levels**

Cytoscreeners pay scales at April 2002 are £9,784 - £10,106 for a trainee and £11,609 - £15,244 (excluding discretionary points) for an experienced member of staff. This does not compare favourably with other skilled roles, either within or outwith the health service.

#### **5.3.2 Availability of Trained Staff**

The numbers of screeners in Northern Ireland are very small (7), and turnover is very low. Should a vacancy arise, there are no trained staff available to fill such gaps. It is a major concern that succession planning needs to be managed and additional staff trained. However, this is difficult to achieve if there are no guarantees of a post once training has been completed.

### **5.4 Clinically Linked MTOs**

(This report does not cover MTOs currently working in Dentistry, Pharmaceutical Services, Medical Photography, Works and Maintenance or Estates.)

#### **5.4.1 Student Placements**

As with Biomedical Science students, Clinical Physiology students do not receive a bursary during their work placement year. This does not compare favourably with their student colleagues in professions such as nursing and PAMs who receive financial assistance towards their degree costs, whether as a bursary or the payment of fees.

#### **5.4.2 State Registration**

At present there is no requirement for most MTOs to be State Registered although state registration is being explored for some of the clinical specialties. This results in a number of concerns. Firstly in relation to patient safety, where no track can be kept of an employee's competence or suitability for a post which delivers direct patient care. Secondly, there is a concern amongst staff with regards to the lack of recognition that their skills deserve, and which would be addressed by registration. Along with it would come a driver for ensuring the availability and need for continuing professional development, which would be welcomed by staff.

However, concerns have been expressed by staff in roles which are not at present expected to move to state registration, that this would devalue their skills and expertise, resulting in different levels of pay for essentially equivalent roles, so increasing the difficulty in recruiting to their professions.

It is also likely that state registration may in future require degree entry qualifications in to the profession.

#### **5.4.3 Undergraduate Training**

At present the University of Ulster degree in Clinical Physiology provides modules suitable for four of the specialties which come under the RCCP banner – cardiology, respiratory medicine, audiology, and neurophysiology. There are a maximum number of 35 places per annum on the degree course. The University of Ulster is the only University in Northern Ireland providing this degree.

There are currently difficulties providing relevant modules of the degree for those specialties outwith the four mentioned above, due to the small number of staff requiring training. Because MTO staff generally remain in their jobs for long periods of time, there are not necessarily going to be posts available for students when they graduate. However, it also means that when staff do leave and posts become vacant, there are no “spare” qualified staff in the market place to fill these vacancies. In specialties where numbers of staff are low this has a serious impact on their ability to continue to provide a service.

As a result, Trusts are offering students on their placement year full time employment, requiring the student to complete their degree studies on a part-time basis. As student numbers are small, this has a detrimental effect on the running of the degree course.

#### **5.4.4 Pay Levels and Career Progression**

Starting salaries for MTOs are very low, with a trainee scale of £8,163 - £9,784 and an MTO1 scale of £10,803 - £13,026 (excluding discretionary points). This is not attractive to graduates after four years of study, especially when compared to other healthcare professions. Progression through the grades is not automatic, and unless posts become available through service expansion, staff can remain on their current grades for very long periods of time.

In order to move up the grades staff are often required to undertake extra study. The potential to do so and the support available to achieve this are dependent on the site at which the employee works. In many hospitals, heavy workloads make this difficult to accommodate.

Due to the specialisation now required it is not easy to transfer between specialties, so many staff feel they have “nowhere else to go”.

#### **5.4.5 Staff Levels and Work/Life Balance**

Because staff levels in a number of specialties, such as respiratory medicine, are low, and there are few unemployed trained staff in the market place, it is

very difficult to provide family friendly policies such as part time working, and to cover breaks such as maternity leave. Inevitably it results in other members of staff having to provide extra cover. As over 60% of this group of staff are female, this is a long-term issue that requires addressing.

As a result of staff shortages (either when posts become vacant or new posts are created due to service expansion) staff from other areas e.g. other specialties or qualifications, such as nursing, are being used to fill the gap, and this raises concerns about levels of expertise and patient safety.

#### **5.4.6 Training Trusts**

No recognition is received by trusts (or the staff involved) who carry out the training of students. The majority of training is carried out by the two main Belfast Trusts – Belfast City Hospital Trust and The Royal Group of Hospitals Trust. These organisations tend to see these students move on to other posts as vacancies arise, which means they are continuously training staff (this applies in particular to Cardiology services).

In order to gain relevant experience, many students are required to undertake part of their placements in a tertiary centre, rather than at a smaller site. At times it can be very difficult to provide the level of training expected, due to the requirement to also manage heavy workloads.

#### **5.4.7 Regional Medical Physics Agency**

Significant difficulties are being experienced in recruiting and retaining MTO staff, due to the lack of a structured education and training programme and the low levels of pay. A number of MTOs have trained as radiographers and undertake similar roles, but there is an increasing differential between the two pay scales, now estimated at over 20%, which has a significant impact on the Agency's ability to recruit.

### **5.5 Clinical Scientists**

#### **5.5.1 Training Structure, Funding and Succession Planning**

The Department funds three places for trainee Grade A posts in Biochemistry. However, no training for any other specialties is currently centrally funded. Some specialties fund their own training programmes, such as Haematology and Medical Genetics, but these are ad-hoc.

Due to the small number of posts in individual specialties and the long timescale required to train replacements, long-term succession planning is very important. There is considerable concern that there will be insufficient trained staff available to replace forthcoming retirements. Using a retirement age of 55, 36% of clinical scientists could potentially retire in the next ten years. Even if this retirement age is increased to 60, 23% will retire.

#### **5.5.2 Regional Medical Physics Agency**

The Regional Medical Physics Agency has had significant difficulty in recruiting Grade B Clinical Scientists, particularly in radiodiagnostic physics,

as the number of qualified staff available to fill such posts in Northern Ireland are limited, and there is a shortage of such staff in the rest of the UK.

The Department currently funds four trainee Grade A Clinical Scientist posts in the Agency.

## **5.6 Low Pay and Profile**

Common to all staff groups, except perhaps Clinical Scientists, was the view that their roles had a very low profile, both within the service and externally. They felt that the public viewed the NHS as being “doctors and nurses” with little recognition for the essential role which they provide. This means that few school leavers are aware of, and therefore going to consider, a career in their professions, so reducing the pool of potential applicants or relevant graduates. This, coupled with the low levels of pay offered, in particular to University Graduates, does not make the roles attractive.

Concern was expressed that within organisations the role and workload of these groups of staff was not fully recognised, particularly in relation to appointment of new Consultant staff or the expansion of clinical services, where the implications for support functions may not be adequately acknowledged or resourced.

However, there was a strong view that the jobs were rewarding (albeit not necessarily in financial terms), with good experience, challenging work, in a constantly changing environment and with a worthwhile purpose.

## **6. KEY ISSUES - DEMAND**

### **6.1 Laboratories – covering MLSO / MLA / Cytoscreeners / Clinical Scientists**

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

- an increase in the volume of activity. Data from the Belfast Link Labs, which represents approximately 60% of Northern Ireland lab activity and the Craigavon Area Hospital Trust labs indicates that laboratories have consistently seen an increase in tests requested of, on average, 6-7% per annum for a number of years. For some specialties the increase is much greater. For example, the NI Assembly Public Accounts Committee report on pathology labs noted that over the last five years the volume of tests had increased by 60% in biochemistry whereas in other specialties the increase was around 4% (reference 06/01/R, published February 2002). The PAC recommended that the Department review how workload is measured in laboratories, so that it can properly benchmark activity at different locations. Significant increases in primary care requests and changes to clinical practice – “whereas senior consultants would use a test to confirm a diagnosis, nowadays less experienced doctors are using tests to assist diagnosis”, along with clinical governance and the increasing threat of litigation are considered key drivers behind this. Trusts also need to recognise that appointments of additional medical consultants in any specialty inevitably result in an increase in workload for support areas such as laboratories, and such areas have little control over this increase;
- an increase in the complexity of the tests requested and the depth and speed of reporting required;
- an increasing requirement for laboratories to achieve and maintain CPA accreditation, including requirements for the appointments of Quality Managers, along with increasing workload due to areas such as clinical governance, waste disposal, infection control, clinical audit, blood safety and blood transfusions;
- an increasing need to provide out of hours cover and for this cover to result in staff needing to work continuously throughout their on—call duty. The ability of staff groups to provide this cover within their current establishments whilst meeting the requirements of the Working Time Directive and the needs of staff with regards to family friendly working practices is limited. In order to achieve compliance with the Working Time Directive, the availability of staff during normal hours is significantly reduced if compensatory rest requirements are to be properly met;
- an increasing demand on staff with regards to providing training officers for students on degree placements;

- the ongoing development of new areas of laboratory science, for example in the fields of genetics and molecular biology, along with increasing sub-specialisation, and the need to keep abreast of new techniques; and
- the development of near patient testing which could potentially require significant input from laboratory staff, particularly with regards to quality control.

## 6.2 Clinical MTOs

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

- the changing roles of medical staff, with the requirement for other professions to take on extended roles previously delivered by doctors;
- potential developments in the delivery of health care e.g. digital hearing aids and neonatal screening, which will significantly increase the level of audiology technicians required, and the National Strategic Framework for Cardiac Services, which will have a significant impact on Cardiology services;
- changes to the working patterns and hours of delivery. At present many clinics staffed by MTOs are run during normal “office hours”. However, with the drive towards family friendly services and with the pressure on waiting lists etc. we are likely to see an increasing demand for evening and weekend clinics;
- for those staff groups who currently provide a 24-hour service, such as cardiac theatre technicians and perfusionists, the requirements of the Working Time Directive will put significant pressure on services currently covered by a small number of staff; and
- some of the impact of demand increases at smaller sites could potentially be offset by increases in technology such as telemedicine, allowing junior staff on site to carry out relevant tests and submit results to larger sites for analysis and diagnosis.

## **7. DATA MODELLING**

### **7.1 Source of Data**

The baseline data used has been supplied by the DHSSPS, and is based on the annual Trusts' download of payroll information (HRMS) as at September 2001. As previously acknowledged, whilst it is known that there are discrepancies within the way in which the relevant organisations have categorised their staff, particularly between specialties, it is felt that the overall numbers (which are used for the data modelling) are sufficiently robust as to enable trends to be predicted.

All calculations are based on headcount, as opposed to whole time equivalents (w.t.e.).

### **7.2 Modelling Assumptions**

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

#### **7.2.1 Retirements**

The following average retirement ages are based on information gathered by the Department on current retirement trends;

MLSO	56 years
MLA	55 years
MTO	53 years
CS	57 years

Age information for each staff group had been provided in 5-year age bands (see Appendix D). We have assumed a linear age spread within each 5-year band and taken a retirement age of 60 for each group. This is to take account of the fact that while the average retirement age is seen to be dropping, some staff are still working well beyond 60. Whilst the trend is currently towards a younger retirement age, the extension of the state pension age for women to 65 may effect this in due course.

#### **7.2.2 Other Leavers**

The Department has completed an analysis of staff leaving HPSS employment during 2001 and a percentage estimate has been calculated for each staff group (excluding retirements). Whilst it is recognised that this is based on a snapshot in time, the estimates are considered conservative. The estimate for MTOs based on this information was 5%, however, on discussion, the Steering Group felt this was unusually high and the estimate has therefore been reduced to 1.5%. The Clinical Scientists also recommended a reduction from the 6% calculated to 4%, which they felt

more accurately reflected the norm. The following have therefore been applied:

MLSO	3%
MLA	29%
MTO	1.5%
Clinical Scientist	4%

Categories are used by the Trusts to record the reason for leaving. They included, for example, those leaving for reasons of ill health, dismissal, personal reasons, family reason, job offer from elsewhere etc. However, it was considered that the categorisation of the data was insufficiently robust to enable a thorough breakdown to allow projections by category of leaver.

### 7.2.3 Graduating Students

The number of graduating students available to fill MLSO vacancies has been estimated on the basis of information provided by University of Ulster for the last two years. The estimated annual number of students entering the workforce is 31:

- 9 of the 40 graduates from the BSc in Biomedical Science;
- 6 of the 10 graduates from the MSc in Biomedical Science;
- 16 graduates from other degrees enrolling on the Postgraduate Certificate in Biomedical Science.

While an Honours degree is the minimum entry requirement for Clinical Scientist positions, the entry requirements for MLA and MTO positions are variable - only some require degrees as a minimum criterion. Where a degree is required, the subject varies by specialty. Therefore, it is not possible to estimate the flow of new graduates/recruits into these professions.

### 7.2.4 Current Vacancies

The Department carried out a vacancy review in March 2001 for MLSO and CS grades and a percentage by staff group has been applied. Information gathered during the interview process has been used to estimate a percentage for MTOs and MLAs. These percentages have been adjusted for known current vacancies in the Regional Medical Physics Agency (RMPA). The percentages applied to the model are:

MLSO	4 %
MLA	4%
MTO	5% (RMPA 21%)
Clinical Scientist	3 vacancies

It is assumed that any current vacancies will be filled in the first two years.

### **7.2.5 Workload Projections**

This is to cover general increases in workload and known service developments (cancer and cardiology) but excludes the impact of the Working Time Directive. Whilst data is available on annual increases in volumes of tests requested in laboratories, which indicates increases of 6-7% per annum, this does not take in to account many factors which are more difficult to quantify. These factors include increasing complexity, reporting requirements and timescales, the impact of increased clinical governance and areas such as CPA accreditation, the need for training time, and the offsetting benefit of increased technology. A conservative estimate has therefore been made of an impact on MLSO and MLA staffing of 1% per annum increasing to 2% per annum by year 5.

For MTO staff the measurement of increased workload is even more difficult, particularly given the range of specialties included in the group. Most of the staff in this group are not currently impacted by the Working Time Directive, and therefore no major increase for this has been projected (see below).

However, it needs to be recognised that developments in Primary Care, the potential requirements for evening clinics, the reduction in junior doctors hours, high waiting times (for example there is currently a 6 – 9 month waiting time for a non-urgent echocardiogram at the Royal Group of Hospitals Trust) and other such factors will all impact on future workload. We have estimated an annual increase in workload of 5% per annum which is assumed to result in a requirement for an additional 1% staffing per annum increasing to 2% over five years for all specialties (except the Regional Medical Physics Agency). This equates to 3 staff in 2002/03 rising to 6 in 2006 / 07. Known developments included within this are 1 MTO for Spinal Monitoring and potentially 2 MTO Cardiology for Altnagelvin.

Based on detailed workforce planning carried out by the Regional Medical Physics Agency, an annual increase of 2 Clinical Scientists and 3 MTOs has been included. This includes 1 CS and 1 MTO per annum under service expansion for cancer services.

### **7.2.6 Working Time Directive**

All of the Trusts are currently considering the impact of WTD on their staffing and rotas but while some are testing pilot shift patterns, very little definitive work has been undertaken on which to base an estimate of the impact of WTD on this professional group. Trusts are at such an early stage in Trade Union consultation and equality proofing that it has not been possible to obtain any estimates of WTD impact in terms of increased staff requirements. Therefore assumptions have been developed on the basis of qualitative feedback from key informants and agreed with the Steering Group.

It is assumed that MLAs, Clinical Scientists and the majority of MTOs (with the exception of theatres and Cardiology) are not currently affected by the Working Time Directive as they either do not provide an out of hours service, or are unlikely to exceed the 48 hour week, nor are they anticipated to do so over the next five years.

The main group of staff currently affected is the MLSOs. The impact will be greater on smaller sites where compliant shift patterns are difficult to achieve with small staff numbers. A 10% increase in staff numbers has been assumed to accommodate new shift patterns. On the assumption that these are filled in the first two years, no further increase for WTD is projected.

For the MTOs the main staff groups assumed to be affected are theatres and Cardiology. Very little work has as yet been carried out to determine the increased staff numbers required, so a similar estimation as that used for the MLSOs of 10% increase in staff numbers for those specialties has been applied.

### **7.2.7 Loss to Workforce Due to Work / Life Balance**

Whilst it is recognised that there may be an increase in males requesting reductions in working hours for family or other reasons, this number is assumed to be small, and the projections have therefore been based on the numbers of females entering the workforce.

Looking at the current composition of the MLSO workforce and student population, we have assumed that there will be an increase in the percentage of women in the workforce and that the percentage of women working part-time will remain fairly constant (at around 25%). Therefore we have assumed that an additional 1.5% of the workforce will wish to work part time per year. This is considered conservative given the increasing introduction of family friendly policies.

For MLAs, both the percentage of women, and the percentage working part-time have decreased over the last four years. We have therefore projected a conservative estimate of a 1% increase each year in part-time working for the next five years.

For MTOs the percentage of women in the workforce has remained fairly constant, at around 58%, with 30% working part-time. We have therefore projected an estimated increase of 1% of the workforce wishing to move to part-time each year.

For Clinical Scientists, whilst the percentage of women in this staff group have dropped, the percentage working part-time has increased, so again an increase of 1% per annum has been assumed.

### **7.2.8 Continuing Professional Development**

Whilst no policies currently exist for CPD across the workforce, we have assumed 10 sessions per annum per member of staff and converted this to a w.t.e. for MLSOs and MTOs. Clinical Scientists have been excluded as their career path currently provides (in the main) for their CPD and no significant changes are anticipated at present. No CPD has been included for MLAs as there is currently no requirement for this staff group to undertake a minimum level of CPD.

### 7.2.9 Cytoscreeners and ATOs

Due principally to the small number of staff involved, data modelling has not been carried out for these staff groups.

In 2001, there were 6 Cytology Screeners in Northern Ireland and one Trainee Cytology Screener. Their age profile indicates that one of these six professionals is anticipated to retire in the next 5 years (assuming a retirement age of 65). There are two Cytology Screeners aged between 50 and 59, two aged between 40 and 49 and one aged between 20 and 29. Therefore, in terms of succession planning no immediate issues exist for this group. However, in the longer term, new trainee Cytology Screeners will be required to replace those lost due to retirement, particularly if early retirement is anticipated for this group.

Due to the entry level and qualification requirements of ATOs they are not impacted by some of the same issues as above, and staff increases or shortages will be as a result of service expansion and market forces.

## 7.3 Models

Applying the above supply and demand assumptions for each staff group results in the following estimates of staff losses and requirements for additional staff in the 5 year period from 2002 to 2007. Each table includes an estimate of the number of additional posts to be filled and comments about the potential sources of recruits for these posts and their likely availability are included below.

### 7.3.1 MLSO

Table 7.1

#### Supply and Demand Estimates - MLSO

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
<b>Supply</b>						
Retirements	7	11	11	11	11	51
Other Leavers	18	18	18	18	18	90
Worklife Balance loss	9	9	9	9	9	45
Graduating Students	-31	-31	-31	-31	-31	155
<b>Supply Shortage</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>31</b>
<b>Demand</b>						
Current vacancies	11	11	0	0	0	22
Workload Projections & Service Expansion	6	8	9	11	12	46
Working Time Directive	30	30	0	0	0	60
CPD	12	0	0	0	0	12
<b>Potential Additional Requirements</b>	<b>59</b>	<b>49</b>	<b>9</b>	<b>11</b>	<b>12</b>	<b>140</b>
<b>Net Demand</b>	<b>62</b>	<b>56</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>171</b>

**Note: Total Workforce 2001= 600 (Including 55 Trainee MLSOs)**

In terms of meeting the net estimated demand over the five years (171 posts) there is scope to increase the proportion of graduates from the University of Ulster Biomedical Science BSc and MSc degrees entering health service employment in Northern Ireland . Only around 20% of those currently completing these degrees take up health service employment in NI. Addressing the supply issues set out in Section 5.1 could result in a larger number of these students entering the workforce.

The proportion of graduates from the Biomedical Science BSc entering HPSS employment would need to increase to 50% to meet the current vacancies estimated in Table 7.1 for year 1 and 2 of the projections. This would equate to an estimated 11 more new entrants to the profession per year – 55 in total. Further increases to the proportion of students entering HPSS employment could contribute to meeting the additional potential demand identified.

Demand issues, especially with regards to the working time directive may potentially create a significant number of additional posts to be filled. If these demand issues such as current vacancies and WTD are not filled in 2002/03 or 2003/04, they will need to be carried forward in to subsequent years.

### 7.3.2 MLA

Table 7.2  
**Supply and Demand Estimates - MLA**

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
<b>Supply</b>						
Retirements	1	1	1	1	1	5
Other Leavers	34	34	34	34	34	170
Worklife Balance loss	1	1	1	1	1	5
<b>Estimated Annual Turnover</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>180</b>
<b>Demand</b>						
Current vacancies	2	2	0	0	0	4
Workload Projections & Service Expansion	1	1	2	2	2	8
<b>Potential Additional Requirements</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>12</b>

**Note: Total Workforce 2001- 118**

Retention is a particular problem for MLAs resulting in much higher rate of staff leaving health service employment than for any other technical and scientific group. The lack of career prospects and salary levels for MLAs means that the potential to fill the vacancies created by these losses is dependent on market forces. Whilst the service may be able to fill posts for short periods, there is considerable effort and cost associated with the ongoing recruitment required at this grade. It is therefore important that the service looks to ways in which retention can be improved.

### 7.3.3 MTO

Table 7.3  
Supply and Demand Estimates - MTO

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
<b>Supply</b>						
Retirements	8	3	3	3	3	20
Other Leavers	5	5	5	5	5	25
Worklife Balance loss	3	3	3	3	3	15
<b>Estimated Annual Turnover</b>	<b>16</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>60</b>
<b>Demand</b>						
Current vacancies	8	8	0	0	0	16
Workload Projections & Service Expansion	6	6	7	8	9	36
Working Time Directive	16	16	0	0	0	32
CPD	6	0	0	0	0	6
<b>Potential Additional Requirements</b>	<b>36</b>	<b>30</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>90</b>

**Note: Total Workforce 2001- 318 (Includes 12 Trainee MTOs)**

Not all types of MTO staff require degree level entry qualifications. Therefore, it is not valid to include only the number of Clinical Physiology degree graduates in the above model. (In 2000, 50% (10) of Clinical Physiology graduates took up MTO posts in Northern Ireland and in 2001 this rose to 69% (11) but the number of students graduating from the course dropped to 16.)

However, it is clear that in some specialities – particularly cardiology - there are not sufficient numbers of graduates at present to meet current demand. The potential increases in demand modelled above would further exacerbate this situation in some specialties. Further work should be carried out on a specialty basis using the above model to determine the exact number required and the size of the shortfall.

### 7.3.4 Clinical Scientist

Table 7.4  
**Supply and Demand Estimates - Clinical Scientist**

	2002/03	2003/04	2004/05	2005/06	2006/07	Total
<b>Supply</b>						
Retirements	1	1	1	1	1	5
Other Leavers	4	4	4	4	4	20
Worklife Balance loss	1	1	1	1	1	5
<b>Estimated Annual</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>30</b>
<b>Turnover</b>						
<b>Demand</b>						
Current vacancies	2	1	0	0	0	3
Workload Projections & Service Expansion	3	3	3	3	3	15
<b>Potential Additional Requirements</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>18</b>

**Note: Total Workforce 2001- 93**

Whilst Table 7.4 suggests a shortfall of staff the supply of potential applicants for laboratory CS posts is not considered to be a limiting factor. The ability to fill these posts will be much more dependent on the funding available to increase the number of posts and training provided. (At present the Department funds three trainee laboratory CS places in Biochemistry.)

The availability of staff to fill RMPA posts is more of a concern, particularly in areas where there are known national shortages, and where funding for training is currently limited (the Department currently fund four trainee Grade A posts).

## **8. CURRENT NATIONAL POLICIES**

It is very important to take cognisance of work that is currently being developed, both on a UK wide basis and in Northern Ireland, in areas which will make a contribution to alleviating many of the issues raised. Whilst it is recognised that much of this work will take some time to bring to completion, Northern Ireland should be looking to see which areas it can progress in tandem with or ahead of the rest of the UK.

### **8.1 Agenda for Change**

This sets out the Government's proposals to link pay progression to development of skills and knowledge and includes plans for:

- the introduction of a new NHS Job Evaluation Scheme that will ensure that the new pay system is consistent with legislation on equal pay for work of equal value;
- the inclusion of some smaller groups of highly qualified staff within the remit of the Review Body;
- the creation of a single pay negotiating council for staff who stay outside the Review Body system, replacing the current separate Whitley Councils and negotiating bodies;
- the harmonisation of core national conditions of service, giving staff an NHS-wide pay system, rather than the mixture of rules that apply at present;
- new, simplified and fairer national pay bands defined by job weight as determined by the system of Job Evaluation rather than by history or job title;
- the ability to develop new roles and jobs locally or nationally and reward them fairly using the Job Evaluation system;
- improved opportunities for switching between roles at the same level, or progressing to more demanding roles within the new system of simplified pay bands;
- pay progression within pay bands linked to a new skills and knowledge framework, to reward staff who take on new skills and responsibilities; and
- the proposals to be agreed in partnership with trade unions and professional bodies.

These proposals will give help to defining career pathways, which will be assisted by the development of detailed job descriptions that reflect ability and achievement as well as local needs and circumstances. They will also allow for the development of staff into advanced roles without this necessarily requiring a move into management.

## 8.2 Making the Change

This sets out the way the Healthcare Science Professions need to develop and plan for the future in order to:

- improve the supply of scientific and technical staff, so that adequate numbers of professional staff are available to deliver high quality scientific services;
- strengthen and modernise education and training, so that staff are fit for purpose and committed to ongoing development;
- introduce a robust regulatory infrastructure to enhance public confidence;
- value staff for the work they do and create a good working environment;
- develop an infrastructure for building attractive career pathways so that high quality staff can be recruited and retained; and
- ensure their contribution is fully recognised within the NHS, particularly by Trust Boards.

Key Issues being addressed include:

- the creation of a new Health Professions Council to replace CPSM, with a strategic role in setting and reviewing standards. This council will have a duty to work in partnership with key stakeholders, such as education providers, employers and the Quality Assurance Agency, to streamline the development and maintenance of education and training standards. It will also be able to regulate current and emerging staff groups;
- establishment of a single transparent and accessible Health Professions Register and explicit linkage of registration to evidence of continuing professional development and maintenance of competence;
- protection of common professional titles; and
- proposals for the effective regulation of support workers.

## 8.3 Diploma in Professional Practice (Pathology)

A new placement scheme has been developed in partnership between the School of Biomedical Sciences, University of Ulster (UU) and the N.I. Institute of Biomedical Sciences (IBS). This diploma was piloted in 2001 at Antrim Hospital and in the current academic year (2002) a further three sites have joined the scheme.

The aim is to shorten the time taken to achieve State Registration post graduation for BSc (Hons) students of Biomedical Science from UU. To complement the placement a half module of academic study (Biomedical Professional Practice) will be delivered to students in the academic semester prior to their placement year. This module is delivered mainly by practising MLSOs and will further prepare the students for placement in a hospital pathology laboratory setting.

Evaluation of this new placement training will be carried out by University staff, the N.I. IBS and those sites that have participated in its delivery. It will take place at the

end of each academic year to ensure appropriate monitoring of the content, process and effectiveness.

#### **8.4 Extended Role of Biomedical Scientists**

Currently there are severe difficulties being experienced by the service as a result of the shortage in Consultant histopathologists. With the increasing pressure for specialisation, particularly with regards to cancers, increasing reporting requirements and the multidisciplinary approach now being adopted towards cancer treatment, requiring consultants to spend more time attending meetings, there is severe pressure on their workload.

As a result, advanced biomedical practitioners have been introduced for cervical cytology. This will enable suitably experienced and qualified staff, other than consultant staff, to sign out abnormal smears, so significantly decreasing the pressure on consultant staff. It also provides a further career opportunity for highly experienced biomedical staff.

Whilst there are issues such as continuing registration which still need to be resolved, the success of this new position should be monitored to evaluate its potential for introduction to other specialties.

## **9. CONCLUSIONS AND RECOMMENDATIONS**

From both the qualitative analysis and the detailed data modelling we can draw the following conclusions and recommendations;

### **9.1 MLSO/MLA/Cytoscreeners**

For the MLSOs the projected shortfall in staff is a serious concern due to the very limited number of students currently studying for relevant degrees, and the ability to attract these students in to the HPSS. It is clear that in the next five years, these staffing gaps will not be able to be filled by graduates alone even if significantly more were attracted into HPSS careers, and alternative measures will need to be taken. This has to include reviewing alternative strategies for service provision.

For MLAs, the most significant concern is the high level of turnover and the service's ability to attract staff to these posts given the low level of pay and the ability to retain them.

Whilst Cytoscreeners are small in number, they have an important role to play, and it is essential that the service is in a position to manage any anticipated changes in personnel.

We would make the following recommendations;

#### **9.1.1 Bursaries for Student Placements**

There is a strong view that the offering of a bursary or some form of financial assistance for students in their placement year for the Biomedical Science degree would significantly assist in recruitment to the Health Service for MLSO staff. Unlike other healthcare professions such as nursing, the Department does not currently fund this course. It should review the potential for establishing some form of financial assistance and therefore bring these staff more in line with their colleagues in other professions.

#### **9.1.2 Extension of Biomedical Scientist Grade**

As previously mentioned, the implementation of the extension of the Biomedical Scientist grade in cytology should be reviewed to assess the appropriateness of extending the grade in other specialties, in order to alleviate pressures in laboratories resulting from a shortage of medical staff.

#### **9.1.3 Diploma in Professional Practice (Pathology)**

The pilot should be evaluated and modified if necessary to ensure its ready adoption on a wider scale within NI and elsewhere. Reducing the timescale for training required by new Biomedical Science graduates prior to State Registration (and therefore the increase in salary scale that goes with it) should assist in the recruitment of new appropriately qualified staff to the profession.

#### **9.1.4 Career Structure**

Work should be carried out to review the skill mix required and the potential to develop some form of career structure for MLAs which includes CPD. Given the current shortfall in MLSO staff, the potential for current MLA staff to progress to MLSO grades should also be considered.

Trusts should also review the potential within their organisations to fast-track staff from MLSO1 to MLSO2 grades.

The reasons for the currently low proportion of women at the more senior MLSO grades, in comparison with the profession as a whole, should be investigated along with, if relevant, potential means by which to address the gap.

#### **9.1.5 Cytoscreeners Succession Planning**

The Department should review the potential for increasing the number of trainee Cytoscreeners over the next five years to ensure qualified staff are available to fill vacancies which will arise due to retirements.

### **9.2 MTOs**

Again the modelling has demonstrated a potential shortfall in available staff over the next five years. A significant element of this relates to specialties such as Cardiology where there is a shortage of students graduating with relevant degrees. We would therefore make the following recommendations:

#### **9.2.1 Clinical Physiology Degree**

Work should be carried out between the University of Ulster and the service to review the delivery of the Clinical Physiology degree to increase the flexibility of its approach and therefore the specialties that it can support. This should help to determine ways in which small numbers of staff for specialist areas can receive the relevant training and qualifications, whilst recognising that the numbers required each year will fluctuate.

#### **9.2.2 Bursaries for Student Placements**

As with MLSOs, there is again the view that the offering of a bursary or some form of financial assistance for students in their placement year would significantly assist in recruitment in to the Health Service, and bring this group of professions more in line with their clinical colleagues.

### **9.3 Clinical Scientists**

Recruitment in to this staff group (for laboratory staff) is not a major concern, but a number of staff are due to retire in the next five to ten years and this needs to be recognised now.

Current national shortages for CS staff for the RMPA are a concern and alternative measures may need to be reviewed to overcome this.

### **9.3.1 Training Funding**

In order to ensure that suitably qualified staff will be available in the future, the Department should review the training currently funded for Grade A Clinical Scientists to extend it, where necessary, across the laboratory specialties. It should be targeted to specialties of greatest need, based on an annual review of future staffing shortages and succession planning for retirements.

The Department and the RMPA should also review the potential for further developing training schemes in the Agency to help overcome their recruitment problems and increase the potential to develop expertise in these areas within Northern Ireland.

## **9.4 Service Wide**

There are also a number of recommendations we would wish to make which apply to all specialties and staff groups covered by this review:

### **9.4.1 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 currently being considered. Whilst this clearly sets out a potential shape for the future provision of services, the outcome of the review is not yet known.

A clear strategy for the future structure of laboratory services in Northern Ireland is needed. The Hayes review stated that “We believe that the pressures on the pathology service to deliver a high quality cost effective service will make it increasingly difficult to sustain the current configuration of laboratories”. Alongside this, development of an integrated IT strategy and system would significantly assist laboratories in the management of their workload and would need to play a key role in any redeveloped service model. Common approaches to equipment purchase will enable easier movement of staff without requiring additional training.

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.

### **9.4.2 Raising Role Profiles**

We would recommend that work be carried out to review current recruitment practices in the service. The aim should be to increase the profile of roles carried out by the Technical and Scientific staff groups and increase public awareness, particularly amongst school leavers, in order to attract a greater proportion in to relevant further education courses.

### **9.4.3 Benchmarking**

Benchmarking is already carried out in Belfast Links Laboratories and work should be carried out to set benchmarked norms for workload across the province based on volumes, complexity, training obligations etc. to assess staff numbers required. This would assist in determining detailed workforce planning and aid decisions with regards to priorities for future resource investment. It would also provide a useful tool for assessing, for example, potential service reconfigurations such as those proposed by Hayes. This recommendation echoes that of the NI Assembly Public Accounts Committee following its review of Pathology Laboratories (reference: 06/01/R).

### **9.4.4 Funding for Training**

Work is required to quantify the financial impact of the increasing requirements for training, including the appointment of training officers, and the impact of proposed requirements for CPD for staff grades where such formal training programmes do not currently exist.

### **9.4.5 Categorisation of Staff on Payroll**

It would be useful if agreement could be reached as to the classification of staff on the payroll system to enable valid comparisons of staffing levels to be made between organisations in the future. For example, the range of names used for differing specialties does not lend itself to useful comparisons between organisations.

### **9.4.6 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.

**APPENDIX A**  
**COMPOSITION OF STEERING GROUP**

## APPENDIX A – Steering Group Members

### MLSO, MLA and Cytoscreeners

Alfie Stewart	Royal Hospital HSS Trust
Alison Geddis	Belfast City Hospital HSS Trust
Andrew Mc Cann	Craigavon Area Hospital Group HSS Trust
Chris Funston	United Hospitals HSS Trust
David Moorehead	Royal Group of Hospitals HSS Trust
Billy Gilmore	School of Biomedical Sciences, UU Coleraine
Colin Hamilton	WHSSB
Yvonne Barnett	School of Biomedical Sciences, UU Coleraine
Fiona Jennings	NI Blood Transfusion Service
Gerry Clarke	MSF Representative, Belfast Links Labs
Ivan Ritchie	Royal Group of Hospitals HSS Trust
Jackie Jamison	United Hospitals HSS Trust
John McLuckie	Belfast Links Labs
Martyn Simpson	Royal Group of Hospitals HSS Trust
Sean Conlin	Belfast Links Labs
Tom Morton	Greenpark HSS Trust
Winston Pinkerton	Belfast Link Labs

### MTO

Barbara Martin	Royal Group of Hospitals HSS Trust
Brian Buick	Belfast City Hospital HSS Trust
Carol Montgomery	Royal Group of Hospitals HSS Trust
Catherine O'Neill	School of Applied Medical Sciences and Sports Studies, University of Ulster, Jordanstown
Colin Hamilton	WHSSB
Geraldine McParland	Belfast City Hospital HSS Trust
Ian Logan	School of Applied Medical Sciences and sports studies, University of Ulster, Jordanstown
Ivan Ritchie	Belfast Links Labs
Peter H S Smith	NI Regional Medical Physics Agency
Raymond Flanagan	Royal Group of Hospitals HSS Trust
Stephen Kennedy	Belfast City Hospital HSS Trust
Vera Hodgkinson	Royal Group of Hospitals HSS Trust

### Clinical Scientist

Alistair Crockard	Royal Group of Hospitals HSS Trust
Billy Gilmore	School of Biomedical Sciences, University of Ulster, Coleraine
Colin Hamilton	WHSSB
Ellie Duly	Ulster Community and Hospitals HSS Trust
Ivan Ritchie	Royal Group of Hospitals HSS Trust
Paul Boreland	United Hospitals HSS Trust
Peter H S Smith	NI Regional Medical Physics Agency

### Department of Health, Social Services and Public Safety

David Bingham (Chair)	Director of Human Resources
Joyce Cairns	Deputy Director of Human Resources
Jennifer Thompson	Workforce Planning

**APPENDIX B**  
**KEY INFORMANT INTERVIEWS**

## KEY INFORMANT INTERVIEWS

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### MLSO/MLA/Cytoscreeners

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Morris O’Kane	Lab Director/ WHSSB, Altnagelvin
Gerry Clark	MSF, Belfast Link Labs (BLL)
Brian Magee	Lab Services Mgr, Craigavon Area Hospital
John Corry	Lab Services Mgr, Sperrin Lakeland
Jack Barr	Director of Lab Services, Belfast Link Labs
Ivan Ritchie	Personnel Manager, Belfast Link Labs
James Carson	Consultant Histopathologist, Antrim Hospital
Chris Funston	MLSO, Antrim Hospital
Jackie Jamison	MLSO, Antrim Hospital
Tom Morton	MLSO, Antrim Hospital
Yvonne Barnett	School of Biomedical Sciences, UU, Coleraine
Billy Gilmore	School of Biomedical Sciences, UU, Coleraine
Fiona Jennings	Corp. Services Mgr, Blood Transfusion Agency
John Savage	Lab Services Mgr, Blood Transfusion Agency
Helen Allen	CPSM Chairwoman, MLSO, Altnagelvin
Martyn Simpson,	BMS Manager Microbiology Service, BLL
Sean Conlin,	MLSO, RVH
Thomas McLaughlin	Biomedical Services Manager, BLL
Laurence Nolan	Deputy BMS Manager Haematology Service, BLL
John McClintock	MLSO, Ulster Hospital

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### MTO

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Barbara Martin	MSF Rep. MTO Resp Med, RVH
Geraldine McParland	MTO Cardiology BCH
John Meeklan	MTO, Cardiac Theatres Intensive Care, RVH
Ian Logan	Applied Medical Sciences & Sports Studies, UUJ
Catherine O’Neill	Applied Medical Sciences & Sports Studies, UUJ
Peter Smith	Chief Executive, Regional Medical Physics Agency
Vera Hodgkinson	MTO, Cardiology RGH
Stephen Kennedy	Unison Rep BCH

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### Clinical Scientists

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Elizabeth Trimble	Chair/Lab Medicine, Clinical Inst; Dept of Clinical Biochemistry
Terry Lapin	Prof of Haematology, Queens University
Paul Boreland	C.S. Ulster Hospital and Antrim Hospital
Alaistair Crockard	C.S. Belfast Link Labs
Ellie Duly	C.S. Belfast Link Labs
Peter Smith	Regional Medical Physics Agency

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**APPENDIX C**  
**FOCUS GROUPS**

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**FOCUS GROUPS**

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<b>Workforce Category</b>	<b>Key Contact</b>	<b>Location Held</b>
MLSO / MLA / Cytoscreeners	Gerry Clarke	BLL
MLSO / MLA	Brian Magee	Craigavon
MLSO / MLA	Chris Funston	Antrim
MLSO students	Billy Gilmore	UU, Coleraine
MTO's	Geraldine McParland	BCH
Clinical Scientists	Alistair Crockard	RVH

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**APPENDIX D**  
**WORKFORCE COMPOSITION TABLES**